Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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December 30, 2011

Geoghan Coogan, Chairman, Selectman
Town of Tisbury
51 Spring Street
Tisbury, Massachusetts 02568

and

Eric T. McLean, P.E.
American Capital Energy
15 Tyngsboro Road, Suite 4A
North Chelmsford, Massachusetts 01863

RE: Approval with Conditions
Application for: BWP SW 36 Post-Closure Use - Major
Solar Photovoltaic Array
Transmittal #: X238619

AT: Tisbury Landfill
59 High Point Lane
Tisbury, Massachusetts
Facility ID#: 39804, Regulated Object#: 173006

Dear Mr. Coogan and Mr. McLean:

The Massachusetts Department of Environmental Protection, Solid Waste Management Section (MassDEP), has completed its Administrative and Technical review of the referenced Post-Closure Use permit application (Application) for the Tisbury landfill (Landfill). The Application was prepared and submitted on behalf of the Town of Tisbury and American Capital Energy (Applicants) by Weston & Sampson Engineers, Incorporated (Weston or Engineer) of Peabody, Massachusetts.

MassDEP has determined the Application is administratively and technically complete and hereby **Approves** the Post-Closure Use of the Landfill for a 1.2 megawatt (MW) solar photovoltaic (PV) array subject to conditions as specified herein.

I. SUBMITTALS:

MassDEP has reviewed the Application pursuant to 310 CMR 19.000: *Solid Waste Regulations*, 310 CMR 19.143: *Post-Closure Use of Landfills* and MassDEP's *Landfill Technical Guidance Manual, May 1997* (Manual). The Application consists of the following:

A. The permit transmittal, application forms for Post-Closure Use - Major (BWP SW 36), narrative describing the proposed use, engineering calculations, seven engineering drawings and documents received by MassDEP on November 23, 2011.

B. Supplemental Application information, prepared by Weston & Sampson, consisting of a report dated December 16, 2011, revised engineering drawings, engineering calculations, and documents received by MassDEP on December 19, 2011.

C. A letter report dated December 16, 2011, prepared by Weston & Sampson and received by MassDEP on December 16, 2011.

D. Supplemental Application information, prepared by Weston & Sampson, consisting of a report dated December 21, 2011, revised engineering drawings and engineering calculations, and documents received by MassDEP on December 22, 2011.

The Application is signed and stamped by Duane C. Himes, Massachusetts Professional Engineer No. 32336.

II. SITE DESCRIPTION & INVESTIGATIONS:

The Tisbury landfill is located on an approximately 22 acres of a Town owned parcel (Site), of which approximately 15 acres have been landfilled in four distinct solid waste disposal areas: Area A, B, C and D. The closed unlined Landfill Areas A, B, C, and D correspond with the northeast, southeast, south central, and southwest portions of the Site, respectively. Approximately 4 acres of the final cover system in Area A is paved (parking lot and access road) to facilitate the post-closure use for a "Park-N-Ride" and the Town of Tisbury's transfer station and recycling drop-off facility. Approximately 2.3 acres of Area A is covered with a vegetated topsoil layer as part of the multilayered final cover system.

Area A is located on the north side of the Site and is separated from Areas B, C and D by an easement for Commonwealth Electric Company power lines that bisects the Site. The Site is abutted by a privately owned gravel pit and Town owned land to the north; wooded, residential and Town owned property to the south; wooded and Town owned land to the east; and private residential/commercial property and Town owned, wooded land to the west. Disposal of municipal solid waste and construction and demolition debris began in the 1960s and continued until 1994.

Existing Final Cover System Design: The Tisbury Landfill is divided into four areas, designated as Areas A, B, C and D. Area A is 6.8-acres and was completed in April 2000. The PV array is

not proposed to be located on any portion of Area A. The PV array is proposed to be constructed on the final cover system for Area B, C and D of the Tisbury landfill. The final cover system for the Tisbury landfill consists of three final cover designs[1]: 1). Area B, 2). Area C, and 3). Area D.

On November 12, 1985 MassDEP approved closure plans for Area B of the Landfill. The final cover system for Area B was completed in 1985. The final cover was installed with a minimum top slope of 5 % and side-slopes no greater than 3:1. The final cover system for the Area B consists of the following components from bottom to top:

- intermediate cover soil, overlain by
- approximately 12 inch thick low permeability soil barrier layer ($k < 1 \times 10^{-5}$ cm/s)
- approximately 6-inch thick vegetated topsoil layer

On October 16, 1989 MassDEP approved closure plans for Area C of the Landfill. The final cover system for area C was completed in 1990. The final cover system was installed with a minimum top slope of 5 % and side-slopes no greater than 3:1. The final cover system for Area C for the Landfill consists of the following components from bottom to top:

- 40 mil High Density Polyethylene (HDPE) flexible membrane liner (FML) barrier layer
- approximately 12 inch sand drainage layer
- approximately 6 inch vegetated topsoil layer

The final cover system for Area D of the Landfill was completed in 1999. The final cover system was installed with a minimum top slope of 5 % and side-slopes no greater than 3:1. The final cover system for Area D for the Landfill consists of the following components from bottom to top:

- 6 inch gas venting layer
- 40 mil Linear Low Density Polyethylene (LLDPE) FML barrier layer
- 12 inch sand drainage layer
- 6 ounce nonwoven geotextile filter fabric
- 6 inch vegetated topsoil layer

On May 30, 2007, MassDEP approved Area A, B, C and D landfill final closure construction certification report.

The Area B, C, and D final cover system designs all incorporate a passive gas venting system consisting of 4 gas vents, 7 gas vents and 3 gas vents, respectively.

> Note 1: For a complete description of the Tisbury final cover system refer to MassDEP's May 20, 2007 Landfill Final Closure Certification permit application approval letter and the referenced submittals.

Existing Post Closure Uses: On September 16, 1999, MassDEP approved a post-closure use permit application for the construction of a "Park-N-Ride" in Area A. Area A consists of 6.3 acres with 4 acres paved and 2.3 acres covered with a vegetated topsoil layer as part of the capping system.

Post-Closure Environmental Monitoring: A Comprehensive Site Assessment (CSA) for the Landfill was completed by Earth Tech, Inc. in May 1997 and approved by MassDEP on April 23, 2002.

Post-closure environmental monitoring (groundwater and soil-gas monitoring) is currently conducted by the Town. The Town has not proposed any changes to the post-closure environmental monitoring plan based on the proposed post-closure use.

III. POST-CLOSURE USE PROPOSAL SUMMARY:

American Capital Energy (ACE or Developer), through an agreement with the Town of Tisbury (Town) and Cape and Vineyard Electrical Cooperative, Incorporated (CVEC), proposes to develop 1.2 MW solar photovoltaic installation on the Landfill. Hereinafter, the Town of Tisbury, American Capital Energy and all construction and maintenance personnel associated with the Town's Landfill shall be referred to as the "Applicants' Contractors". ACE in conjunction with the Town is proposing to construct and maintain a PV array on the capped Landfill, consisting of the following components:

- Upgrading of the existing on Landfill access road and additional temporary access roads;
- Approximately 1,070 precast concrete ballasts (70 inches x 40 inches by 14 inches thick) will be placed within the topsoil support layer for Area B final cover system or on the sand drainage layer for Areas C and D final cover system;
- Approximately 500 PV panel support racks (SunLink Groundmounted System) installed on the concrete ballasts;
- Approximately 4,600 PV modules (Yingli Solar Modules) will be placed on the PV panel support racks;
- One electrical equipment concrete pad will be installed on the final cover system of Area B. The electrical equipment concrete pad will support the electrical equipment, including inverters, transformers, switchboards and switchgear;
- Switching gear and a recording meter (25KV switch and meter) will be mounted on one concrete pad on the final cover system of Area B;
- The photovoltaic panel support racks will be interconnected using above-ground and underground cables;
- The output from the PV array will be connected via underground cable conduits to the grid at the NSTAR interconnection point located within an electrical power easement that runs through the Landfill;
- An 8 foot high chain link fence will enclose the entire PV array.

The existing access roads located on Areas B and C and may be utilized to construct the PV array. The existing road construction will be verified prior to construction. The existing access roads for Area B and C consist of 6 inches of gravel. The existing access road will be upgraded with a woven filter fabric and an additional 16 inches of dense graded crushed stone, as needed, in accordance with the GSE Lining Technology LLC design manual for soil thickness over liners to maintain the required protection on the FML. If the existing access road is to be used for heavy equipment traffic additional dense graded crushed stone will be added to provide a 36 inch separation between the FML and/or the low permeability soil layer and the road surface.

Temporary access roads will be constructed, if needed, during construction to minimize impact to the Landfills final cover systems. The temporary access roads will be constructed by

placement of a woven filter fabric over the vegetative support layer, and the addition 18 inches of compacted dense graded crushed stone. The temporary access roads will be removed within six months of completion of construction and the road areas will be restored to meet the specifications of the final cover system.

Most of the array will be on areas of the Landfill with a slope of less than 5% (2.9 degrees) but the edges may expand into areas where there is up to a 15% (8.5 degrees**)** slope.

The solar array will utilize PV modules (3.25-foot by 5.42-foot) mounted on galvanized steel, aluminum, or stainless steel framed racks attached to the precast concrete ballast. The racking system will hold the panels at a fixed tilt of 20 degrees from horizontal. The PV array will use monocrystalline PV modules mounted on racks consisting of nine modules in a single row (panel layout 1 x 9) with two ballasts per rack. Each panel support rack or assembly will utilize a fully ballasted mounting system with no penetrations of the low permeability layer of the final cover systems. The modules and the associated racking will be approximately 3 feet high in the front and 5 feet high in the rear. The rows of PV panels will be oriented east-west and the spacing between each row will vary from 5'5" to 9'7" (north-south measurement). The Landfill contours are not aligned with the east-west axis of the PV racks, therefore the rows will be at a slight cross-slope angle.

The existing elevation and grade of the Landfill will be minimally altered. The proposed design will impact limited portions of the topsoil layer of the final cover system. The impacts result from: installation of rack ballasts; installation of the inverter/transformer concrete pad, and two switchgear and meter pads, and installation of above and below grade electrical wiring.

The ballast will be precast concrete slabs and will be brought into the Site via pickup trucks or lightweight all-terrain forklifts. In Area D and Area C, the precast concrete ballasts will be placed by excavating the topsoil from beneath the proposed ballast location, placing a geotextile fabric on the existing sand drainage layer, and then placing a layer of compacted crushed stone or gravel in preparation for the installation of the concrete ballasts. To install the precast concrete ballasts in Area B, the vegetation and topsoil will be removed to a depth of 3 inches. After excavating, a layer of geotextile fabric will be placed onto the prepared base and then a layer of crushed stone or gravel will be placed and compacted in preparation for placement of the concrete ballasts. Crushed stone or gravel will be installed in Areas B, C, and D such that the maximum slope on the concrete ballasts will be 5% or less. Once this is accomplished, the vegetation and topsoil surrounding each ballast will be restored.

The support racks will house all wiring between the modules. The electrical transmission wiring will run within cable conduits above grade, mounted on the rack assemblies where applicable, or mounted on conduit supports (block assemblies) above grade to keep the cables off the ground surface. At existing and temporary access road crossings the electrical wiring will run below ground. The electrical wiring that will be placed below these temporary roads will be placed in 4 inch fiberglass reinforced epoxy (FRE) cable conduits, at a minimum depth of 1 foot below the road surface.

Along the eastern perimeter of the PV array in Area B, the above grade electrical transmission wiring cable conduits will transition to a below ground concrete encased duct bank. The below ground duct bank is located outside the limits of Area B final cover system and connects the inverter/transformers to the interconnection point which is an existing utility pole located within the electrical power easement. There are no subsurface penetrations at the inverters/transformers and switchgear concrete pads. Conduits will not enter the concrete pads from beneath the pad. Conduits will be mounted on aboveground supports except at subsurface road crossings, where the conduits will surface and run into the side of the inverters/transformers and other equipment with the use of flexible gas tight connections. All underground conduits will be sealed, have gas tight fittings and will include flexible connections at transition points. All electrical work will be designed for the most recent version of the Massachusetts Electrical Code (MEC) which includes and incorporates the requirements of the National Electric Code (NEC). Prior to construction, an electrical permit will be obtained from the local building department official, and the project will incorporate any additional electrical requirements stipulated by the building department official. (**refer to condition #13**).

A single concrete electrical equipment pad for the inverters/transformers will either be precast offsite or formed on site. The location beneath the concrete electrical pad will be prepared by excavating approximately 3 inches of the 6 inch topsoil layer in Area B. After excavating, a layer of geotextile fabric will be placed onto the existing topsoil and then a minimum of 12 inches of crushed stone or gravel will be placed and compacted in preparation for placement of the concrete ballasts. The concrete pad will be formed and the concrete will be poured on top of the crushed stone layer. (**refer to condition #11**).

A proposed 25 KV disconnect switch and NSTAR meter is proposed on a concrete pad adjacent to the inverter/transformer electrical equipment concrete pad in Area B. An additional meter ("for customer") is proposed on a concrete pad adjacent to the disconnect switch and NSTAR meter. The area beneath the disconnect switch and meter concrete pad(s) will be prepared in a similar fashion to the inverter/transformer concrete pad. Final concrete pad design (dimensions) for both the inverter/transformer and the switchgear will be determined based on the final equipment selection and approval by electrical inspector and/or utility representative. The inverter/transformer and switchgear pads will be designed such the conduits feeding the equipment will enter the pad above grade (**refer to condition #13**).

Geotechnical Evaluation: The Application included a geotechnical evaluation for the installation of the array and supporting structures on the final cover systems.

The Application included an analysis of the foundations for the PV array that will bear directly on the final cover systems (HDPE, LLDPE and low permeability soil liner) and has considered the dead load, snow load and wind loading. The results of the geotechnical evaluation are as follows;

- The modules, panel support racks, and ballasts do not exceed the loading criteria for the Landfill.
- The electrical equipment concrete pad (inverters/transformers) does not exceed the recommended loading criteria for the Landfill.
- The PV array will not cause adverse Landfill settlement.

- The Engineer determined the potential vehicle loading on the proposed permanent and temporary access roads would not produce unacceptable loading stresses to the Landfill final cover systems.
- The PV array is stable on a slope up to 15%.
- The 4 inch FRE electrical cables conduit buried under the proposed permanent and temporary access roads, and the road base soil surrounding the conduit, will support the applied vehicle loads.

The anticipated maximum loading scenario (ballasts, racking system, and modules) on the Landfill surface will result in a bearing pressure of approximately 389 pounds per square foot. The maximum bearing pressure is less than 1,000 pounds per square foot (less than 7 psi).

The estimated settlement resulting from the static loads increase of the PV array ballasts was 0.84 inches for the Area C and Area D final cover systems. The Engineer has stated the FML of the final cover systems can undergo this distortion without impacting the integrity of the liner.

A sliding stability evaluation was performed for the ballasts. A maximum slope of 15% was evaluated. The Engineer determined the factor of safety for sliding of the PV ballasts on the underlying soils was approximately 1.5 on a 15% slope.

Storm Water: The Engineer performed calculations using Hydro CAD modeling software (TR-20) analysis for the 24-hour, 25 year storm and again under the 24-hour, 100 year storm. The PV array will modify run off characteristics of a limited portion of the Landfill by changing some of the landfill grass cover to impervious surfaces. The additional impervious surfaces (i.e. ballasts and electrical equipment concrete pads) represents less than 5% of the of the closed Landfill surface that is to be covered by the PV array. The capacity of various elements of the Landfill storm water conveyance systems were reviewed including, swales, stoned line ditches, storm water piping and detention basins. The Engineer concluded there should be adequate capacity to properly manage the post development at the Landfill: therefore there is no need to modify the existing storm water management system.

Post Closure and Post-Closure Use Operations and Maintenance: On November 12, 2003 MassDEP approved the Post Closure Operation, Maintenance and Monitoring plan for the Tisbury landfill. The Town currently implements the Landfill's post closure monitoring and maintenance plan. The Town is to continue to perform all post closure environmental monitoring (groundwater and soil gas monitoring) for the Landfill. Operations and maintenance for the Landfill for the area where the PV array is located up to a distance of 10 feet away from the edge of the PV array is to be the responsibility of the project Developer: American Capital Energy. The Town is to maintain responsibility for the remainder of the Landfill outside the 10 foot buffer around the PV array.

There are no proposed changes to the post closure operation and maintenance plan for the area to be maintained by the Town and not used for the PV array. Currently, the Landfill is mowed at least annually with quarterly cover system inspections by the Town.

A post-closure use operation and maintenance plan for the post-closure use area used for the PV array was submitted with the Application. The Developer proposes to provide: site security; electrical maintenance; module cleaning; and final cover system maintenance including but not limited to, mowing, undergrowth control, pest control, and erosion control. The Developer proposes to conduct monthly inspections to check the landfill final cover system for erosion and changes in vegetative growth following the first year of construction of the PV array (**refer to condition #15**).

The Application included a Health and Safety Plan for operation and maintenance activities to be performed by employees at the Harwich landfill solar project for the operation and maintenance of the proposed PV array. The Application did not include a health and safety plan for the construction of the proposed PV array (**refer to condition #7**).

Site Security: The Applicants have proposed to install an 8 foot high fence with a gate around the entire PV array. The fence is proposed to be located off the final cover system on the eastern, western and southern side of the PV array. The fence is proposed to be located on the final cover system for Areas B, C and D of the Landfill approximately coincident with the utility easement bounds. Fence ballasts installed on the final cover system will be installed by removing the top 3 inches of the topsoil layer and spreading topsoil mixed with bentonite powder (approximately 0.25 pounds of powder per ballast) within the excavation. Concrete ballasts 2' x 2' x 6 inches thick will be placed on the bentonite topsoil mixture. The concrete ballast will extend approximately 3 inches above the final cover existing grade.

Decommissioning Plan: Decommissioning and site restoration will include dismantling and removal of all panels and supporting equipment, transformers, overhead cables and foundations and restoration of the roads, and modules sites to substantially the same physical condition that existed immediately before construction of the PV array.

IV. PERMIT DECISION:

MassDEP, having determined the information in the Application is satisfactory and in accordance with its authority granted pursuant to M.G.L. c.111, s. 150A, and 310 CMR 19.000, hereby **APPROVES** the Post-Closure Use of the Tisbury Landfill for a Solar Photovoltaic Array subject to the conditions identified herein.

V. GENERAL PERMIT CONDITIONS:

1. Permit Limitations: The issuance of this approval is limited to the proposed Solar Photovoltaic Array at the Tisbury landfill as detailed in the Application and does not relieve the Applicants from the responsibility to comply with all other regulatory or permitting requirements. Post-Closure Use construction shall proceed in complete compliance with the approved plans, MassDEP's regulations and requirements, the Manual or as required by this Approval. This approval does not relieve the Town, as the owner of the Landfill, from its responsibility to comply with all post closure monitoring and maintenance requirements for the entire Landfill. There shall be no deviation from this Approval without prior consent from MassDEP. MassDEP shall be consulted prior to any deviation from the approved design. MassDEP may require a permit modification application for significant design modifications.

2. Regulatory Compliance: The Applicants, Engineers and Applicants' Contractors shall fully comply with all applicable local, state and federal laws, regulations and policies, by-laws, ordinances and agreements. This includes but is not limited to, 310 CMR 19.142: *Post-Closure Requirements*, 310 CMR 19.143: *Post-Closure Use of Landfills*, and 310 CMR 19.043: *Standard Conditions*. Applicable federal regulations include, but are not limited to, 29 CFR Part 1910, OSHA standards governing employee health and safety in the workplace and all applicable local, state and federal electrical codes and permits, including National Electrical Code (NEC), 2011 Edition, Article 690-"Solar Photovoltaic (PV) Systems".

3. Inspection and Repair of Settlement Areas: Prior to construction of the PV array, any suspect settlement areas on the Landfill project area shall be surveyed to determine the lowest spot. The surrounding area should be then surveyed to find the "relief point" defined as the lowest surrounding area where ponded water would flow off the cap. The elevation difference is defined as the "pond value". Minor settlement shall be defined as less than a 12 inch pond value. 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 with the pond value. Any future settlement should be recorded cumulatively. If/when the total settlement reaches 12-inches, the area will be considered to have suffered major settlement and appropriate repairs to eliminate ponding shall be performed.

   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 Applicants may either:

   1. 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

   2. 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.

   Any proposal to repair minor settlement may be done as routine maintenance, provided that the Applicants report the settlement to MassDEP and state their intent to perform repairs and provides MassDEP with final survey results and a summary write up.

   Any proposal to do major settlement repair must be submitted within a Corrective Action Design (BWP SW 25) permit application since disruption of the final cover system will take place and repair details must be submitted and approved.

4. Notification of Construction: The Applicants shall notify MassDEP in writing (e-mail is acceptable) when the post-closure use construction commences and is completed.

5. Oversight and Certification Report: All construction work shall be completed under the supervision of a Massachusetts Registered Professional Engineer who shall have sufficient staff on-site to provide quality assurance/quality control (QA/QC) oversight for all construction work at the Landfill. Within **seven (7) months** of completing the installation of solar photovoltaic array, MassDEP shall be provided with a certification report. The report shall be signed and stamped by a Massachusetts-registered professional engineer and include, at a minimum, written certification from the supervising engineer that the project was performed in accordance with MassDEP regulations, requirements and the approved Post-Closure Use permit application. At a minimum, the report shall include as-built drawings depicting all pertinent site features, equipment used etc.

6. Preconstruction Work: Prior to commencement of construction activities all landfill gas passive vents, soil-gas monitoring wells, groundwater monitoring wells and other existing above ground structures on the Landfill cap and appurtenances shall be flagged for visibility, and protective barriers shall be placed around such structures as needed to prevent damage by vehicles accessing the area.

7. Health and Safety: The Applicants, Engineers and Applicants' Contractors are responsible to ensure all necessary precautions are taken to protect the health and safety of workers and the general public during both the construction phase and during the operation and maintenance phase of the post-closure use.

   A copy of the site specific health and safety plan for the post-closure use CONSTRUCTION phase, shall be submitted to MassDEP (for its files) prior to the beginning of any construction work. The health and safety plan shall include as a minimum;
   - protocols for monitoring of landfill gas (i.e. methane, hydrogen sulfide, etc.) as needed,
   - protocols for modifying work practices if landfill gas is detected at levels deemed unsuitable.

8. Vehicles Operating on the Landfill Final Cover System: Vehicles operating on the Landfill final cover system shall only operate on the designated permanent and temporary access roads, except for low-pressure construction equipment (with ground pressures of **7 psi** or less) in accordance with the remaining conditions of this permit. Low-pressure construction equipment operating off the access road shall limit turning on the vegetative support layer as much as possible. If MassDEP determines the use of excavation equipment is creating the potential for damage to the FML, the usage of such equipment shall immediately cease upon notification by MassDEP. All operators of the vehicles entering the final cover system area shall be clearly instructed by the on-site engineer and/or the contractor of the requirements of this permit prior to arrival, to avoid damage to the Landfill final cover system components. A list of low ground pressure equipment used and the pressure rating of each vehicle shall be indicated in the certification report required in condition #5.

9. Permanent and Temporary Roads and Low Ground Pressure Equipment: Low ground pressure equipment shall not access the final cover system from permanent and temporary roads where the transition will result in excessive pressure and wear on the Landfill vegetative service. The on-site engineer may construct ramps as necessary.

10. Construction Precautions: All necessary precautions shall be taken to protect the Landfill storm water control system, environmental monitoring network and the Landfill gas vents. All operators of vehicles entering the area should be clearly instructed by the on-site engineer and/or the Applicants' Contractor of the permit requirements to avoid damage to the Landfill components. The on-site engineer shall observe the extent of each excavation performed on the Landfill cover system. If any damage occurs to the any Landfill components, the Engineer shall notify MassDEP within 24 hours and provide a written plan with a schedule for repairs.

11. Integrity of the Final Cover System: All disturbances of the Landfill shall be limited to the proposed excavations and installations as depicted and described within the Application and approved plans. Excavations shall be limited to the topsoil layer. No excavations shall penetrate the sand drainage layer during construction, including staking for concrete forms, or during operation and maintenance of the PV array without written approval by MassDEP. The Engineer and Applicants' Contractors shall ensure that vehicles operating on the Landfill surface do not compromise the integrity of the Landfill final cover system.

12. Personnel Training: The Applicants, Engineers and Applicants' Contractors shall instruct all personnel regarding the potential hazards associated with landfill gas and shall give on-the-job training involving in any activity authorized by this permit. Such instruction and on-the-job training shall teach personnel how to comply with the conditions of the permit to carry out the authorized activity in a manner that is not hazardous to public health, safety, welfare or the environment.

13. Proposed Inverter/Transformer Pad (PowerStation) and Interconnection Equipment: The Applicants stated within the permit application that manufacturers "cut sheets" for the electrical equipment were included in Appendix B for informational purposes only and were only representative of equipment that is proposed. Final equipment selection may vary based on availability and other factors at the time of construction.

    If the Applicants propose to change the electrical equipment a copy of the final design for the inverter/transformer pad and any other electrical pads and protective switchgear (interconnection equipment) proposed on-site shall be submitted to MassDEP for review and approval. The Applicant, Engineers and Applicants' Contractors are responsible to ensure that utilities/structures will not accumulate landfill gas during construction and operation. There shall be no penetrations (utility, conduits or other) at the base of any concrete pads or foundations. There shall be no penetration of any kind of the impermeable layer of the final cover system.

14. Landfill Gas Notification Requirements:

    a. As specified in solid waste management regulations at 310 CMR 19.132 (4) (g),

        "When, at any time, the concentration of explosive gases exceeds 10% of the lower explosive limit (LEL) in any building, structure, or underground utility conduits, excluding gas control, gas recovery and leachate collection system components, the owner/operator shall:

            1. Take immediate action to protect human health and safety;
            2. Notify the Department within two hours of the findings; and
            3. undertake the actions specified under 310 CMR 19.150, Landfill Assessment and 310 CMR 19.151: Corrective Action, as required by the Department."

    b. If at any time monitoring detects the presence of any combustible gases at or in excess of 10% of the lower explosive limit at any location within a building or within any utility conduits on site or off-site, the Town shall notify MassDEP's Bureau of Waste Site Cleanup-Emergency Response Section (508) 946-2714 within two (2) hours of the exceedance as per 310 CMR 40.0321(1) (a) of the regulations.

15. Post-closure Use Operation and Maintenance Plan: During the first year after completion of construction of the PV array, inspections of the Landfill final cover system shall be performed on a monthly basis. Monthly inspection reports shall be submitted to MassDEP within **fourteen (14) days** of completion. Following the first year of operation of the PV array, and if no problems have been documented, inspections of the Landfill shall be performed on a quarterly basis and shall be submitted to MassDEP within **fourteen (14) days** of completion. Pursuant to 310 CMR 19.142(6) inspections shall be conducted by a third-party consulting Massachusetts Registered Professional Engineer, or other qualified solid waste professional. The Applicants, Engineers and Applicants' Contractors shall monitor the effectiveness of the storm water management system which should include; swales, structures and any and all conveyance systems. MassDEP shall be consulted prior to any deviation from the approved storm water design. MassDEP may require a permit modification application for significant design modifications. Any erosion, settlement, security problems or other issues observed at the Landfill shall be reported to MassDEP and repaired immediately.

16. Entries and Inspections: In accordance with *310 CMR 19.043: Standard Conditions*, MassDEP and its agents and employees shall have the right 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.

17. Reservation of Rights: MassDEP reserves the right to require additional assessment or action, as deemed necessary to protect and maintain an environment free from objectionable nuisance conditions, dangers or threats to public health, safety and the environment. MassDEP reserves all rights to suspend, modify or rescind this permit if it determines the solar array compromises

the integrity of the final cover system and/or results in a threat to public health, safety or the environment.

This approval pertains only to the Solid Waste Management aspects of the proposal does not negate the responsibility of the owners or operators 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 the owners or otherwise legally responsible parties from any other applicable laws, statutes or regulations now or in the future.

RIGHT OF APPEAL

Right to Appeal – This approval has been issued pursuant to M.G.L. Chapter 111, Section 150A, and 310 CMR 19.037: Review Procedures for Permit Modifications, Permit Renewals and other Approvals, of the "Solid Waste Management Regulations". Pursuant to 310 CMR 19.037(5), any person aggrieved by the issuance of this determination may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, § 150A and M.G.L. c. 30A not later than thirty (30) days following receipt of the final permit. The standing of a person to file an appeal and the procedures for filing such an 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 permit by a court of competent jurisdiction, the permit decision shall remain effective or become effective at the conclusion of the thirty (30) day period.

Notice of Appeal - Any aggrieved person intending to appeal a grant of a permit to the Superior Court shall first provide notice of intention to commence such action. Said notice of intention shall include the Department transmittal number X238619 and shall identify with particularity the issues and reason why it is believed the 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 at least five days prior to the filing of an appeal.

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

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

No allegation shall be made in any judicial appeal of a 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.

Please direct any questions regarding this matter to me at (508) 946-2833 or to Mark Dakers at (508) 946-2847, or Dan Connick (508) 946-2884 or write to the letterhead address.

Very truly yours,

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

David B. Ellis, Chief
Solid Waste Management Section

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