

## **Section 17**

# **Wastewater Disposal**

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## ATTACHMENTS

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## **17.0 SITE PLAN**

The subsurface wastewater disposal system will be located on-site within the project limits and is shown on the operations and maintenance (O&M) facility site plan (please refer to sheet C-401-33 in Exhibit 1).

### **17.1 Subsurface Wastewater Disposal System**

The wind turbines and electrical transmission lines and components produce no wastewater. The only wastewater generated by the Canton Mountain Wind Project (Project), as designed, will involve discharge of up to 90 gallons per day of wastewater associated with the O&M building. Attachment 17-1 includes the design of the subsurface wastewater disposal system by Maine Licensed Site Evaluator Albert Frick, Registration No. 163. The system is designed to meet the standards of 10-144A CMR 241, Maine's Subsurface Wastewater Disposal Rules. The Project's septic system is designed on soils suitable for treatment of wastewater discharge as required by Maine's Subsurface Wastewater Disposal Rules.

There will be no commercial or industrial wastewater discharged from the Project, and wastewater will be limited to domestic wastewater.



**Attachment 17-1**  
**Subsurface Wastewater Disposal System Design**

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services  
Division of Health Engineering, Station 10 - SHS  
(207) 287-5672 FAX (207) 287-4172

PROPERTY LOCATION		>> Caution: Permit Required - Attach In Space Below <<	
City, Town, or Plantation	CANTON	The Subsurface Wastewater Disposal System <i>shall not</i> be installed until a Permit is attached HERE by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.	
Street or Road	CANTON MOUNTAIN		
Subdivision, Lot *			
OWNER/APPLICANT INFORMATION			
Name (last, first, MI)	Owner		
PATRIOT RENEWABLES			
Mailing Address of	c/o ANDY NOVEY PATRIOT RENEWABLES AND JAY CASHMAN		
<input type="checkbox"/> Owner <input checked="" type="checkbox"/> Applicant	549 SOUTH STREET QUINCY, MA 02469		
Daytime Tel. *	857-403-0119		
		Municipal Tax Map * _____ Lot * _____	
Owner or Applicant Statement		Caution: Inspections Required	
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.	
_____ Signature of Owner / Applicant		_____ Local Plumbing Inspector Signature	
_____ Date		_____ (1st) Date Approved	
		_____ (2nd) Date Approved	

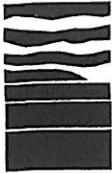
PERMIT INFORMATION			
<b>TYPE OF APPLICATION</b> 1. <input checked="" type="checkbox"/> First Time System 2. <input type="checkbox"/> Replacement System Type Replaced: _____ Year Installed: _____ 3. <input type="checkbox"/> Expanded System a. <input type="checkbox"/> Minor Expansion b. <input type="checkbox"/> Major Expansion 4. <input type="checkbox"/> Experimental System 5. <input type="checkbox"/> Seasonal Conversion	<b>THIS APPLICATION REQUIRES</b> 1. <input checked="" type="checkbox"/> No Rule Variance 2. <input type="checkbox"/> First Time System Variance a. <input type="checkbox"/> Local Plumbing Inspector Approval b. <input type="checkbox"/> State & Local Plumbing Inspector Approval 3. Replacement System Variance a. <input type="checkbox"/> Local Plumbing Inspector Approval b. <input type="checkbox"/> State & Local Plumbing Inspector Approval 4. <input type="checkbox"/> Minimum Lot Size Variance 5. <input type="checkbox"/> Seasonal Conversion Approval	<b>DISPOSAL SYSTEM COMPONENTS</b> 1. <input checked="" type="checkbox"/> Complete Non-Engineered System 2. <input type="checkbox"/> Primitive System (graywater & alt toilet) 3. <input type="checkbox"/> Alternative Toilet, specify: _____ 4. <input type="checkbox"/> Non-Engineered Treatment Tank (only) 5. <input type="checkbox"/> Holding Tank, _____ Gallons 6. <input type="checkbox"/> Non-Engineered Disposal Field (only) 7. <input type="checkbox"/> Separated Laundry System 8. <input type="checkbox"/> Complete Engineered System (2000 gpd+) 9. <input type="checkbox"/> Engineered Treatment Tank (only) 10. <input type="checkbox"/> Engineered Disposal Field (only) 11. <input type="checkbox"/> Pre-treatment, specify: 12. <input type="checkbox"/> Miscellaneous components	
<b>SIZE OF PROPERTY</b> 10 + <input type="checkbox"/> sq. ft. <input checked="" type="checkbox"/> acres	<b>DISPOSAL SYSTEM TO SERVE</b> 1. <input type="checkbox"/> Single Family Dwelling Unit, No. of Bedrooms: _____ 2. <input type="checkbox"/> Multiple Family Dwelling, No. of Units: _____ 3. <input checked="" type="checkbox"/> Other: <u>OPERATION AND MAINTENANCE BUILDING</u> SPECIFY _____ Current Use <input type="checkbox"/> Seasonal <input type="checkbox"/> Year Round <input checked="" type="checkbox"/> Undeveloped	<b>PROPOSED TYPE OF WATER SUPPLY</b> 1. <input checked="" type="checkbox"/> Drilled Well 2. <input type="checkbox"/> Dug Well 3. <input type="checkbox"/> Private 4. <input type="checkbox"/> Public 5. <input type="checkbox"/> Other:	
<b>SHORELAND ZONING</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
<b>TREATMENT TANK</b> 1. <input checked="" type="checkbox"/> Concrete a. <input checked="" type="checkbox"/> Regular b. <input type="checkbox"/> Low Profile 2. <input type="checkbox"/> Plastic 3. <input type="checkbox"/> Other: _____ CAPACITY <u>1000</u> gallons	<b>DISPOSAL FIELD TYPE &amp; SIZE</b> 1. <input checked="" type="checkbox"/> Stone Bed 2. <input type="checkbox"/> Stone Trench 3. <input type="checkbox"/> Proprietary Device a. <input type="checkbox"/> Cluster array c. <input type="checkbox"/> Linear b. <input type="checkbox"/> Regular d. <input type="checkbox"/> H-20 loaded 4. <input type="checkbox"/> Other: _____ SIZE <u>450</u> <input checked="" type="checkbox"/> sq. ft. <input type="checkbox"/> lin. ft.	<b>GARBAGE DISPOSAL UNIT</b> 1. <input checked="" type="checkbox"/> No 3. <input type="checkbox"/> Maybe 2. <input type="checkbox"/> Yes >> Specify one below: a. <input type="checkbox"/> Multi-compartment tank b. <input type="checkbox"/> _____ tanks in series c. <input type="checkbox"/> Increase in tank capacity d. <input type="checkbox"/> Filter on tank outlet	<b>DESIGN FLOW</b> 90 gallons per day BASED ON: 1. <input checked="" type="checkbox"/> Table 501.1 (dwelling unit(s)) 2. <input type="checkbox"/> Table 501.2 (other facilities) SHOW CALCULATIONS - for other facilities - 6 EMPLOYEES (MAX) AT 15 GALLONS PER DAY PER EMPLOYEE
<b>SOIL DATA &amp; DESIGN CLASS</b> PROFILE <u>3</u> / CONDITION <u>B</u> / DESIGN <u>I</u> AT Observation Hole * <u>TP 51</u> Depth <u>24</u> " Elevation <u>-49</u> " OF MOST LIMITING SOIL FACTOR	<b>DISPOSAL FIELD SIZING</b> 1. <input type="checkbox"/> Small - 2.0 sq.ft./gpd 2. <input type="checkbox"/> Medium - 2.6 sq.ft./gpd 3. <input checked="" type="checkbox"/> Medium-Large - 3.3 sq.ft./gpd 4. <input type="checkbox"/> Large - 4.1 sq.ft./gpd 5. <input type="checkbox"/> Extra-Large - 5.0 sq.ft./gpd	<b>EFFLUENT/EJECTOR PUMP</b> 1. <input type="checkbox"/> Not required 2. <input checked="" type="checkbox"/> May be required 3. <input type="checkbox"/> Required Specify only for engineered systems: DOSE: _____ Gallons	3. <input type="checkbox"/> Section 503.0 (meter readings) ATTACH WATER-METER DATA <b>LATITUDE AND LONGITUDE</b> at center of disposal area Lat. <u>N44</u> d <u>29</u> m <u>47.44</u> s Lon. <u>W70</u> d <u>20</u> m <u>20.34</u> s if g.p.s., state margin of error

SITE EVALUATOR STATEMENT		
I certify that on <u>11/30/10</u> (date) I completed a site evaluation on this property and state that the data reported is accurate and that the proposed system is in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241).		
_____ Site Evaluator Signature	_____ SE *	_____ Date
_____ ALBERT FRICK	_____ (207) 839-5563	_____ AFA@MAINERR.COM
Site Evaluator Name Printed Telephone Number E-mail Address ALBERT FRICK ASSOCIATES - 95A COUNTY ROAD ROAD GORHAM, MAINE 04038 - (207) 839-5563		
Note: Changes to or deviations from the design should be confirmed with the Site Evaluator		







**Albert Frick Associates, Inc.**

**Soil Scientists & Site Evaluators**

95A County Road Gorham, Maine 04038

(207) 839-5563

CANTON	CANTON MOUNTAIN	PATRIOT RENEWABLES
TOWN	LOCATION	APPLICANT'S NAME

1) The Plumbing and Subsurface Wastewater Disposal Rules adopted by the State of Maine, Department of Human Services pursuant to 22 M.R.S.A. § 42 (the "Rules") are incorporated herein by reference and made a part of this application and shall be consulted by the owner/applicant, the system installer and/or building contractor for further construction details and material specifications. The system installer should contact Albert Frick Associates, Inc. 839-5563, if there are any questions concerning materials, procedures or designs.

The system installer and/or building contractor installing the system shall be solely responsible for compliance with the Rules and with all state and municipal laws and ordinances pertaining to the permitting, inspection and construction of subsurface wastewater disposal systems.

2) This application is intended to represent facts pertinent to the Rules only. It shall be the responsibility of the owner/applicant, system installer and/or building contractor to determine compliance with and to obtain permits under all applicable local, state and/or federal laws and regulations (including, without limitation, Natural Resources Protection Act, wetland regulations, zoning ordinances, subdivision regulations, Site Location of Development Act and minimum lot size laws) before installing this system or considering the property on which the system is to be installed a "buildable" lot. It is recommended that a wetland scientist be consulted regarding wetland regulations. Prior to the commencement of construction/installation, the local plumbing inspector or Code Enforcement Officer shall inform the owner/applicant and Albert Frick Associates, Inc of any local ordinances which are more restrictive than the Rules in order that the design may be amended. All designs are subject to review by local, state and/or federal authorities. Albert Frick Associates, Inc.'s liability shall be limited to revisions required by regulatory agencies pursuant to laws or regulations in effect at the time of preparation of this application.

3) All information shown on this application relating to property lines, well locations, subsurface structures and underground facilities (such as utility lines, drains, septic systems, water lines, etc.) are based solely upon information provided by the owner/applicant and has been relied upon by Albert Frick Associates, Inc. in preparing this application. The owner/applicant shall review this application prior to the start of construction and confirm this information. Well locations on abutting properties but not readily visible above grade should be confirmed by the owner/applicant prior to system installation to assure minimum setbacks.

4) Installation of a garbage (grinder) disposal is not recommended. If one is installed, an additional 1000 gallon septic tank or a septic tank filter shall be connected in series to the proposed septic tank. Risers and covers should be installed over the septic tank outlet to allow for easy maintenance.

5) The system user shall avoid introducing kitchen grease or fats into this system. Chemicals such as septic tank cleaners and/or chlorine (such as from water treatment units) and controlled or hazardous substances shall not be disposed of in this system. Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life.

6) The septic tank should be pumped within two years of installation and subsequently as recommended by the pump service, but in no event should the septic tank be pumped less often than every three years. All septic tanks, pump stations and additional treatment tanks shall be installed to prevent ground water and surface water infiltration. Risers and covers should be properly installed to provide access while preventing surface water intrusion.

ATTACHMENT TO SUBSURFACE WASTEWATER DISPOSAL APPLICATION

CANTON	CANTON MOUNTAIN	PATRIOT RENEWABLES
TOWN	LOCATION	APPLICANT'S NAME

7) The actual water flow or number of bedrooms shall not exceed the design criteria indicated on this application without a re-evaluation of the system as proposed. If the system is supplied by public water or a private service with a water meter, the water consumption per period should be divided by the number of days to calculate the average daily water consumption [water usage (cu. ft.) x 7.48 cu. ft. (gallons per cu. ft.) ÷ (# of days in period) = gals per day].

8) The general minimum setbacks between a well and septic system serving a single family residence is 100-300 feet, unless the local municipality has a more stringent requirement. A well installed by an abutter within the minimum setback distances prior to the issuance of a permit for the proposed disposal system may void this design.

9) When a gravity system is proposed: BEFORE CONSTRUCTION/INSTALLATION BEGINS, the system installer or building contractor shall review the elevations of all points given in this application and the elevation of the existing and/or proposed building drain and septic tank inverts for compatibility to minimum slope requirement. In gravity systems, the invert of the septic tank(s) outlet(s) shall be at least 4 inches above the invert of the distribution box outlet at the disposal area.

10) When an effluent pump is required: Provisions shall be made to make certain that surface and ground water does not enter the septic tank or pump station, by sealing/grouting all seams and connections, and by placement of a riser and lid at or above grade. An alarm device warning of a pump failure shall be installed. Also, when pumping is required of a chamber system, install a "T" connection in the distribution box and place 3 inches of stone or a splash plate in the first chamber. Insulate gravity pipes, pump lines and the distribution box as necessary to prevent freezing.

11) On all systems, remove the vegetation, organic duff and old fill material from under the disposal area and any fill extension. On sites where the proposed system is to be installed in natural soil, scarify the bottom and sides of the excavated disposal area with a rake. Do not use wheeled equipment on the scarified soil surface. For systems installed in fill, scarify the native soil by roto-tilling or scarifying with teeth of backhoe to a depth of at least 8 inches over the entire disposal and fill extension area to prevent glazing and to promote fill bonding. Place fill in loose layers no deeper than 8 inches and compact before placing more fill (this ensures that voids and loose pockets are eliminated to minimize the chance of leakage or differential setting). Do not use wheeled equipment on the scarified soil area until after 12 inches of fill is in place. Keep equipment off proprietary devices. Divert the surface water away from the disposal area by ditching or shallow landscape swales.

12) Unless noted otherwise, fill shall be gravelly coarse sand which contains no more than 5% fines (silt and clay). Crushed stone shall be clean and free of any rock dust from the crushing process.

13) Do not install systems on loamy, silty, or clayey soils during wet periods since soil smearing/glazing may seal off the soil interface.

14) Seed all filled and disturbed surfaces with perennial grass seed, then mulch with hay or equivalent material to prevent erosion. Alternatively, bark or permanent landscape mulch may be used to cover system. Woody trees or shrubs are not permitted on the disposal area or fill extensions.

15) If an advanced wastewater treatment unit is part of the design, the system shall be operated and maintained per manufacturer's specifications.



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