



~~Vanasse Hangen Brustlin, Inc.~~

RECEIVED  
OCT 21 2011

CONNECTICUT  
SITING COUNCIL

54 Tuttle Place  
Middletown, Connecticut 06457  
Telephone 860 632-1500  
FAX 860 632-7879  
www.vhb.com

Memorandum

To: BNE Energy Inc.  
Town Center Suite 200  
29 South Main Street  
West Hartford, CT 06107

Date: September 27, 2011

Project No.: 41604.03

From: Matthew Davison  
Registered Soil Scientist  
CT Certified Forester 193

Re: Wind Colebrook North  
Development & Management Plan

The following information is being provided in accordance with the Petition 984 Decision and Order, issued by the Connecticut Siting Council on June 9, 2011. Specifically, the following addresses information requested for incorporation into the Development & Management Plan ("D&M") as noted within items 2i and 2l of the Decision and Order.

2i: *"Wetland and Wildlife Restoration plan to include provisions for habitat restoration, invasive species control over a three-year period, and the maintenance of permanent meadow areas on the property in accordance with the Herpetological Assessment dated May 1, 2011 (Klemens);*

How? The following upland and wetland (streambank) restoration plan has been incorporated into the D&M plan set. This plan provides for the restoration of disturbed upland areas with New England Conservation/Wildlife Mix, a native herbaceous seed mixture that will form a permanent, maintenance free cover of grasses, forbs, wildflowers and legumes. This seed mixture will provide erosion control and wildlife habitat value. As detailed within the plan set, portions of the restoration area will be maintained as permanent meadow. Details regarding the maintenance schedule have been provided by Dr. Michael Klemens within a separate document. Areas that will not be subject to regular maintenance will revert to forest through the natural process of succession.

Disturbed wetland areas are related to the construction of two box culvert crossings. To ensure that the proposed culverts are installed in accordance with the natural stream crossing standards, a qualified wetland scientist will provide inspections both during and following the construction of these crossings. Box culverts will be backfilled with natural substrate material matching upstream and downstream streambed substrate and provide for unimpeded passage of fish and other aquatic organisms. The qualified wetland scientist will also inspect the plantings of native wetland shrubs (live stakes) in wetland areas and/or stream banks temporarily impacted by construction activities (Streambank Restoration Area).

Upland Restoration Plan Construction Sequence and Planting Schedule

1. Prior to all work, erosion control barriers will be installed as detailed on the Erosion Control Plan.

2. Where adequate topsoil ( $\pm 6$  inches) does not exist, disturbed areas shall be backfilled to a minimum depth of 6 inches with clean topsoil. Once final topsoil is in place, these areas will be planted with New England Conservation/Wildlife Mix after the completion of final grading. The seed mix will be applied at a rate of 1 lb/1,750 square feet. Soil conditioning activities, including raking, will be combined with the seed application process.
3. Where 2:1 slopes are utilized for final grading, or in areas specified on the plan sheets, biodegradable erosion control matting will be installed over the seed mixture to promote establishment of vegetation and aid in stabilization. The contractor will use "SC2" erosion control matting, available at New England Wetland Plants Inc. (413) 548-8000 or an approved equivalent.
4. The contractor will be responsible for the careful installation, maintenance (including watering) and establishment of native plant material in these areas.
5. The erosion control barriers shall be disassembled following successful stabilization of these areas. Sediment collected by these devices will be removed and disposed of in a manner that prevents erosion and transport to a wetland or watercourse.
6. Monitoring of revegetated areas will be conducted as follows by a qualified third party inspector. These areas will be monitored the first three growing seasons following establishment. Monitoring reports will be submitted to the Connecticut Siting Council no later than December 15 of each year. The reports will provide details on the three success standards described below. In the event that remediation measures are required, recommendations will be provided. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For monitoring purposes, a growing season starts no later than May 31.
7. Revegetated areas will be assessed using three success standards. Each standard is described below. Success Standard 1: At least 75% of the surface area of these areas should be reestablished with indigenous species within three growing seasons. Success Standard 2: Vegetation should be checked to ensure that no invasive species colonize in these areas. Success Standard 3: Slopes within and adjacent to the revegetated areas are stabilized.
8. In the event that remediation measures are recommended, BNE Energy will initiate these measures with the assistance of the qualified third party inspector.
9. If necessary to control invasive species, herbicide applications will be conducted by a state-licensed individual. If applications are required in proximity to site wetlands, the herbicide RODEO® [glyphosate (53.8% active ingredient)] shall be utilized as it is the only herbicide approved by CTDEP for application in aquatic environments.
10. Fertilizers will not be used to promote growth within these areas. The proposed seed mixture contains a variety of native herbaceous species adept at colonizing recently disturbed areas.

#### Planting Schedule 1: Upland Restoration Areas

Disturbed areas will be planted with New England Conservation/Wildlife Mix (or equivalent) at 1750 sq.ft./lb. or as recommended by manufacturer. This mix includes the following species: big bluestem (*Andropogon gerardii*), fringed brome grass (*Bromus ciliates*), creeping red fescue (*Festuca rubra*), Canada wild rye (*Elymus Canadensis*), Virginia wild rye (*Elymus virginicus*), switchgrass (*Panicum virgatum*), deer tongue grass (*Panicum clandestinum*), little bluestem (*Schizachyrium scoparium*), Indian

grass (*Sorghastrum nutans*), common milkweed (*Asclepias syriaca*), New England aster (*Aster novae-angliae*), partridge pea (*Chamaecrista fasciculata*), showy tick-trefoil (*Desmodium Canadense*), grass leaved goldenrod (*Euthamia graminifolia*), gray goldenrod (*Solidago nemoralis*).

---

#### Streambank Restoration Plan Construction Sequence and Planting Schedule

1. Prior to all work, erosion control barriers are to be installed as detailed on the Erosion Control Plan.
2. A qualified wetland scientist responsible for the Streambank Restoration Area shall be notified a minimum of seven (7) business days prior to any phase of the project including excavation and grading, soil transfer and planting, to monitor and oversee implementation of the plan.
3. The Streambank Restoration Area shall then be backfilled to a minimum depth of 8 inches with clean topsoil where necessary. Once final topsoil is in place, it shall be graded to achieve a relatively smooth surface.
4. Streambank Restoration Area plantings shall take place once the above listed tasks have been completed. This area will be planted with native shrubs and herbaceous vegetation as noted in the planting schedule and under sown with New England Conservation/Wildlife or Wetmix grass seed mix after the grading is completed. The seed mix will be applied to the Enhancement Area at a rate of 1 lb/1,750 or 1lb/2,500 square feet respectively. Soil conditioning activities, including raking, will be combined with the seed application process.
5. All plant materials installed shall meet or exceed the specifications of the "American Standards for Nursery Stock" by the American Association of Nurserymen. All plant materials shall be guaranteed for one year following date of final acceptance.
6. All plantings to be spaced randomly at the direction of the wetland scientist to simulate natural growth patterns.
7. The Contractor shall be responsible for the careful installation, maintenance (including watering), and establishment of native plant material in the Restoration Area. All plants shall be guaranteed by the contractor to remain alive and healthy for a full twenty four (24) month period.
8. Rocks and boulders, uncovered during earthwork, may be distributed throughout the Streambank Restoration Area. These rocks and boulders shall be placed in such a way as to provide crevices and cavities suitable for use by wildlife.
9. Fallen logs, branches, stumps and other natural debris will be relocated to the Restoration Area to provide beneficial habitat features for wildlife. This will include downed and uncovered material that is acquired on site by the wetland scientist and will be distributed to cover 2% of the area's substrate surface. The natural debris should be of varying sizes and in varying degrees of decomposition.
10. The erosion control barriers shall be disassembled following successful stabilization of this area. Sediment collected by these devices will be removed and disposed of in a manner that prevents erosion and transport to a waterway or wetland.

11. Long-term monitoring of the Streambank Restoration Area will be conducted as follows. The Restoration Area will be monitored the first three growing seasons following its construction. Monitoring reports will be submitted to the permitting agency no later than December 15 of each year. The reports will provide details on the three success standards described below. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For monitoring purposes, a growing season starts no later than May 31. However, if there are problems that need to be addressed and if the measures to correct them require prior approval from the agencies, the permittee will contact the agencies as soon as the need for corrective action is discovered.
12. The Streambank Restoration Area will be assessed using three success standards. Each standard is described below. Success Standard 1: At least 75% of the surface area of the mitigation area should be reestablished with indigenous species within two growing seasons. Success Standard 2: Vegetation should be checked to ensure that no invasive species colonize in the Restoration Area. Success Standard 3: Slopes within and adjacent to the Restoration Area are stabilized

Planting Schedule 2: Streambank Restoration Area

Quantity	Botanical Name	Common Name	Size
<b>Shrubs</b>			
TBD	<i>Salix discolor</i>	Pussy Willow	Live Stakes @12" OC"

The streambank restoration area will be undersown with New England Conservation/Wildlife Mix seed mixture at a rate of 1lb/1750 square feet as supplied by New England Wetland Plants, Inc. (413-548-8000) or appropriate substitute. Where wetland hydrology is present, New England New England Wetmix seed mixture will be used at a rate of 1lb/2,500 square feet

**2l: "Provision for an independent third party monitor to evaluate on-site construction erosion and sedimentation controls and to ensure establishment of appropriate environmental safeguards protective of amphibians and reptile species;**

The following notes regarding third party erosion and sedimentation control inspection notes have been included in the D&M plan set. Details regarding environmental safeguards that are protective of amphibians and reptile species have been provided by Dr. Michael Klemens within a separate document.

**Wind Colebrook North - Third Party Erosion and Sedimentation Control Inspections**

1. A qualified third party erosion and sedimentation control (E&S) inspector shall inspect the installation of erosion and sedimentation controls prior to the start of construction activities. A pre-construction meeting shall be held with the third party inspector and general contractor prior to the start of construction.
2. The qualified third party inspector will monitor E&S controls throughout the construction period to ensure that controls are properly maintained and any recommendations to remediate failing controls or removal accumulated sediment are implemented by the contractor in a timely fashion.
3. The qualified third party inspector shall monitor E&S controls on a weekly basis or within 24 hours of a rainfall event of 0.5 inches or greater.
4. E&S control monitoring reports will be prepared by the third party inspector on a bi-weekly basis and submitted to the Connecticut Siting Council.