



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

April 28, 2009

Thomas S. Burack
Chairman, NH Site Evaluation Committee
29 Hazen Drive
Concord, NH 03301

Subject: Final 401 Water Quality Certification for Granite Reliable Power Windpark

Dear Chairman Burack,

Under the authority of Section 401 of the federal Clean Water Act (CWA) and NH RSA 485-A:12, III, please be advised that following a public comment period that ended on March 18, 2009, the New Hampshire Department of Environmental Services (DES) recently issued a final 401 Water Quality Certification for the following project:

Applicant: Granite Reliable Power LLC.

Activity Description: Construction and operation of a new wind power facility consisting of 33 wind turbines and associated electrical interconnection facilities including 2 electrical substations, upgrading approximately 20 miles of existing gravel logging roads, and construction of approximately 12 miles of new gravel access roads in Coos County in the Town of Dummer and the unincorporated places of Dixville, Erving's Location, Millsfield and Odell (Activity).

A copy of the final 401 Certification, DES' response to public comment and list of substantive changes made to the draft 401 Certification is attached. For your information, copies are also available for download from our website at
http://des.nh.gov/organization/divisions/water/wmb/section401/coe_ind.htm

Regards,

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Granite Reliable Power LLC.
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Essex, CT 06426

WATER QUALITY CERTIFICATION
In Fulfillment of
Section 401 of the United States Clean Water Act (33 U.S.C 1341)
WQC # 2008-004

Activity Name	Granite Reliable Power Windpark
Activity Location	Coos County in the Town of Dummer and the unincorporated places of Millsfield, Odell, Erving's Location and Dixville.
Affected Surface waters	Androscoggin River, Pontook Reservoir, Pond Brook, Little Dummer Pond, Big Dummer Pond, Newell Brook, Phillips Brook, Unnamed Tributaries to Phillips Brook, Watkinson Brook, West Branch Phillips Brook, Kelley Brook, West Inlet to Millsfield Pond, West Branch Clear Stream, an unnamed tributary to Clear Stream, Clear Stream, Cascade Brook, and various unnamed wetlands
Owner/Applicant	Granite Reliable Power, LLC 8 Railroad Avenue Essex, Connecticut 06426
Appurtenant permit(s):	U.S. Army Corps of Engineers Individual Permit DES Wetlands Bureau Permit DES Alteration of Terrain Permit
DATE OF APPROVAL (subject to Conditions below)	April 27, 2009

A. INTRODUCTION

Granite Reliable Power (GRP) (Applicant), proposes the construction and operation of a new wind power facility consisting of 33 wind turbines and associated electrical interconnection facilities including 2 electrical substations, upgrading approximately 20 miles of existing gravel logging roads, and construction of approximately 12 miles of new gravel access roads in Coos County in the Town of Dummer and the unincorporated places of Dixville, Erving's Location, Millsfield and Odell (Activity). The Activity construction period is expected to take approximately two years, and the operation period is indefinite after completion of construction.

This 401 Water Quality Certification (401 WQC) documents laws, regulations, determinations and conditions related to the Activity for the attainment and maintenance of NH surface water quality standards, including the provisions of NH RSA 485-A:8 and NH Code of Administrative Rules Env-Wq 1700, for the support of designated uses identified in the standards.

B. 401 CERTIFICATION APPROVAL

Based on the findings and conditions noted below, the New Hampshire Department of Environmental Services (DES) has determined that any discharge associated with the Activity will not violate surface water quality standards, or cause additional degradation in surface waters not presently meeting water quality standards. DES hereby issues this 401 WQC subject to the conditions defined in Section E of this 401 Certification, in accordance with Section 401 of the United States Clean Water Act (33 U.S.C. 1341).

C. STATEMENT OF FACTS AND LAW

- C-1. Section 401 of the United States Clean Water Act (33 U.S.C. 1341) states, in part: "Any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate...that any such discharge will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of this title....No license or permit shall be granted until the certification required by this section has been obtained or has been waived...No license or permit shall be granted if certification has been denied by the State..."
- C-2. Section 401 further states, in part "Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations...and shall become a condition on any Federal license or permit subject to the provisions of this section."
- C-3. RSA 485-A:12, III, states: "No activity, including construction and operation of facilities, that requires certification under section 401 of the Clean Water Act and that may result in a discharge, as that term is applied under section 401 of the Clean Water Act, to surface waters of the state may commence unless the department certifies that any such discharge complies with the state surface water quality standards applicable to the classification for the receiving surface water body. The department shall provide its response to a request for certification to the

federal agency or authority responsible for issuing the license, permit, or registration that requires the certification under section 401 of the Clean Water Act. Certification shall include any conditions on, modifications to, or monitoring of the proposed activity necessary to provide assurance that the proposed discharge complies with applicable surface water quality standards. The department may enforce compliance with any such conditions, modifications, or monitoring requirements as provided in RSA 485-A:22."

- C-4. RSA 485-A:8 and Env-Wq 1700 (Surface Water Quality Regulations, effective May 21, 2008) together fulfill the requirements of Section 303 of the Clean Water Act that the State of New Hampshire adopt water quality standards consistent with the provisions of the Act.
- C-5. Env-Wq 1701.02, entitled "Applicability", states that:
"(a) These rules shall apply to all surface waters.
(b) These rules shall apply to any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters."
- C-6. Env-Wq 1702.18 defines a discharge as:
"a. The addition, introduction, leaking, spilling, or emitting of a pollutant to surface waters, either directly or indirectly through the groundwater, whether done intentionally, unintentionally, negligently, or otherwise; or
b. The placing of a pollutant in a location where the pollutant is likely to enter surface waters."
- C-7. Env-Wq 1702.39 defines a pollutant as: "pollutant" as defined in 40 CFR 122.2. This means "dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water."
- C-8. Env-Wq 1702.46 defines surface waters as "perennial and seasonal streams, lakes, ponds and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses and other bodies of water, natural or artificial," and waters of the United States as defined in 40 CFR 122.2."
- C-9. Surface waters are navigable waters for the purposes of certification under Section 401 of the Clean Water Act. Surface waters are

jurisdictional wetlands for the purposes of wetlands permitting under RSA 482-A.

- C-10. The named and unnamed rivers and streams, lakes and ponds, and wetlands, affected by the Activity, are surface waters under Env-Wq 1702.46.
- C-11. Env-Wq 1703.01 (c) states that "All surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters."
- C-12. Env-Wq 1703.19, entitled "Biological and Aquatic Community Integrity", states that
- "a. The surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region; and
 - b. Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function."
- C-13. Env-Wq 1703.21 (a)(1) states that "Unless naturally occurring or allowed under part Env-Ws 1707, all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that injure or are inimical to plants, animals, humans or aquatic life."
- C-14. The Activity reviewed for this 401 Certification requires a federal wetlands permit from the U.S. Army Corps of Engineers under the federal Clean Water Act Section 404. The Applicant has submitted an application for a U.S. Army Corps of Engineers individual wetlands permit.
- C-15. The Applicant is responsible for the Activity, including construction and operation.
- C-16. In accordance with RSA 162-H:7, the Applicant submitted an application for a Certificate of Site and Facility to the New Hampshire Site Evaluation Committee in July, 2008.
- C-17. The Applicant filed an application for a DES 401 Water Quality Certification dated July 15, 2008 for the Activity.
- C-18. Plans reviewed for this 401 WQC are entitled "Granite Reliable Power, LLC, Granite Reliable Power Wind Park, Coos County, New Hampshire, July 2008, Revised December 2008" and a revised sheet 143 which was received by the DES Alteration of Terrain Bureau on February 6, 2009.
- C-19. The applicant filed an application for the Activity for a DES Wetlands Bureau Permit dated July 11, 2008.

- C-20. The applicant filed an application for the Activity for a DES Alteration of Terrain Program Permit dated July 11, 2008.
- C-21. The U.S. Army Corps of Engineers (Corps) issued a public notice for the Activity (File Number: NAE-2008-410) on January 27, 2009. The public comment period ended on February 27, 2009.
- C-22. The Applicant submitted a Preliminary Water Quality Monitoring Plan, dated September 30, 2008, on October 2, 2008. The plan included preliminary thoughts regarding monitoring during construction and long term post construction monitoring.
- C-23. In the application for 401 Certification, the Applicant stated that a Stormwater Pollution Prevention Plan (SWPPP) will be prepared in accordance with the Environmental Protection Agency's (EPA) Construction General Permit (CGP).
- C-24. In the application for 401 Certification, the Applicant stated that a Spill Prevention Control and Countermeasure (SPCC) Plan in accordance with EPA criteria will be prepared.

D. FINDINGS

- D-1. The Activity reviewed for this 401 Certification consists of the construction and operation of a new wind power facility consisting of 33 wind turbines and associated electrical interconnection facilities including 2 electrical substations, upgrading approximately 20 miles of existing gravel logging roads, and construction of approximately 12 miles of new gravel access roads in Coos County in the Town of Dummer and the unincorporated places of Dixville, Erving's Location, Millsfield and Odell.
- D-2. The Activity requires water quality certification under Section 401 of the federal Clean Water Act and New Hampshire RSA 485-A:12, III.
- D-3. The Activity will result in a discharge and may cause the permanent alteration of, or temporary impacts to surface waters.
- D-4. Storm water runoff, including snowmelt, and groundwater flow to surface waters from within the area affected by the Activity during warm and cold-weather conditions are discharges under the definitions of Env-Ws 1702.18.
- D-5. Surface waters that could be potentially affected by the Activity and their associated DES assessment unit (AU) numbers (where available) include the following: Androscoggin River (NHRIV400010603-04), Pontook Reservoir (NHLAK400010602-11), Pond Brook (NHRIV400010602-12 and NHRIV400010602-13), Little Dummer Pond (NHLAK400010602-07), Big

Dummer Pond (NHLAK400010602-06), Newell Brook (NHRIV400010602-10), Phillips Brook (NHRIV801010704-03 and NHRIV801010704-04), 3 Unnamed Tributaries to Phillips Brook, Watkinson Brook, West Branch Phillips Brook (NHRIV801010704-03), Kelley Brook (NHRIV801010704-03), West Inlet to Millsfield Pond, West Branch Clear Stream (NHRIV400010502-02), an unnamed tributary to Clear Stream, Clear Stream (NHRIV400010502-01), Cascade Brook (NHRIV400010502-01), and various unnamed wetlands adjacent to the Activity.

The potentially affected surface waters are Class B waterbodies; Class B New Hampshire surface water quality standards (SWQS) apply to the Activity. Class B waterways are considered suitable for aquatic life, primary and secondary contact recreation, fish consumption, wildlife, and, after adequate treatment, as a water supply.

According to the NH Fish and Game Department on February 6, 2009, the brooks, streams, rivers, ponds/lakes in the vicinity of the proposed Activity are considered cold water fisheries.

- D-6. In accordance with RSA 162-H:7, the Activity requires a Certificate of Site and Facility from the New Hampshire Site Evaluation Committee.
- D-7. The Activity includes dredge and fill of wetlands. The 401 Certification decision relies, in part, on an approved permit from the DES Wetlands Bureau for the potential construction-related impacts to jurisdictional wetlands, which include all surface waters identified in section D-5 of this 401 Certification. Through its processing, and anticipated issuance, the DES wetlands permit will address the dredge and fill impacts to jurisdictional wetlands.
- D-8. The Activity may temporarily or permanently impact surface water hydrologic conditions, such as peak runoff. The 401 Certification decision relies, in part, on an approved permit from the DES Alteration of Terrain Program for the potential construction and operation-related impacts to surface hydrology. Through its processing and anticipated issuance, the DES Alteration of Terrain permit will address potential impacts to surface water hydrology and peak flows.
- D-9. Primary water quality issues of concern associated with the Activity include potential increases in turbidity and benthic deposits due to land disturbance and wet weather discharges of settleable and suspended solids during and after construction of the Activity; potential increases in water temperature due to reductions in riparian canopy and shading; potential increases in phosphorus and nitrogen due to the addition of fertilizers which can lead to excessive aquatic plant growth; potential spills of lubricating oil for the turbines and electrical transmission facilities; the potential application of herbicides and pesticides; and the potential

application of deicing materials, especially those containing chloride such as "rock salt" during the winter months. Other pollutants typically associated with vehicular traffic are not a concern as the project will only result in 2 to 3 vehicle trips per week.

- D-10. To control erosion and deposition of settleable and suspended solids in surface waters, the Activity has been designed with the following features: 1) the use of gravel surfaces with stabilized side slopes for access roads and pads that will resist disturbance by vehicular traffic 2) culverts spaced at frequent intervals under access roads to minimize concentration of stormwater flow to ensure that stormwater and shallow groundwater that travels downslope will continue downslope with little diversion by roadside ditches 3) construction of "rock sandwiches" to minimize changes in subsurface hydrology, 4) diversion of precipitation on steeper roadway surfaces through use of rubber diverters installed across the roadway at regular intervals to shorten flow path length and reduce erosion forces 5) stabilized ditches to resist erosion, 6) construction of sediment traps at culvert outlets, 7) strategically located outlet locations to provide longer travel times and filtering distances to surface waters, 8) construction of grass treatment swales at select locations, 9) construction of sediment basins at sub-station pads and 10) typical temporary erosion control measures during construction such as silt fences, hay bales, stone check dams etc.

The 401 Certification decision relies, in part, on an approved permit from the DES Alteration of Terrain Program which will ensure that erosion control measures are designed to meet state requirements. Construction and maintenance of erosion control measures as proposed and in accordance with DES Alteration of Terrain permit requirements are not expected to result in water quality violations for turbidity or benthic deposits due to settleable and suspended solids.

To ensure that erosion control measures are functioning properly and are protective of surface waters during construction, erosion control inspections and turbidity monitoring can be required. With regards to inspection of erosion control measures during construction, the plans referenced in C-18 of this 401 Certification, which are also part of the Alteration of Terrain permit application, indicate that the following will be done:

1. A Certified Professional in Erosion and Sediment Control or a Professional Engineer licensed in New Hampshire ("Monitor"), shall be employed to regularly inspect the site;
2. The Monitor shall inspect the site at least once a week and if possible during any ½ inch or greater rain event (i.e., ½ inch of

precipitation or more within a 24 hour period) or within 24 hours of such an event;

3. The Monitor shall provide technical assistance to the Contractor on appropriate Best Management Practices for Erosion and Sediment Control requirements;
4. Within 24 hours of each inspection, the Monitor shall submit a report to DES via email. Such reports shall include photographs of the site that are representative of the Activity.

In light of the sensitive resources within the project area and scale of the proposed Activity, the following additional construction BMP inspection and reporting requirements and turbidity monitoring are considered necessary to prevent construction related surface water quality violations.

A. Weekly Erosion Control Meeting: The Applicant's prime Contractor for the Activity (prime Contractor) shall hold weekly erosion control meetings with the Monitor. Minutes of the meeting shall be kept on file and made available to DES upon request.

B. Inspection Frequency

1. Daily Inspections: The prime Contractor shall inspect all erosion control measures every day that work is conducted from the time construction commences and earth is disturbed until construction is complete.
2. Weekly Inspections: After construction has commenced and earth has been disturbed, the Monitor shall conduct weekly erosion control site inspections to verify all erosion control measures are maintained properly to protect surface waters and wetlands. The Monitor shall document and report its findings, including recommendations for maintenance of BMPs or the addition of new control measures to the prime Contractor.
3. Pre-storm inspections: The Monitor shall print the 5-day forecast once daily (7-9 am) for the duration of the project. All forecasts shall be clearly marked with the date and time, kept on file, provided to the prime Contractor. In addition, the 5-day forecast on the day of the weekly meeting shall be attached to the weekly meeting minutes distributed by the Monitor. Inspection shall occur within 24 hours prior to the start of any rain event of 0.5 inches or more in a 24-hour period that is predicted to occur during the workweek. A normal workweek is Monday through Friday. Holidays and weekends are included as part of the normal workweek when work is anticipated to occur on those days. If the predicted event occurs outside of the normal workweek, the

inspection shall occur on the normal workday just before any scheduled days off, such as holidays and weekends. Unless otherwise approved by DES, the Accuweather website (<http://home.accuweather.com/index.asp?partner=accuweather>) shall be used for the purpose of predicting future precipitation amounts. Future precipitation amounts on the Accuweather web site may be determined by typing in the location of the project (city, state and/or zip code), clicking on the link for Days 1-5 forecasts and then clicking on the day(s) of interest.

- C. Emergency Inspections During Storm Events: Inspections shall occur during the daylight hours (Monday through Sunday, including holidays) during storm events whenever plumes are visible or if turbidity sampling indicates water quality standards are exceeded due to turbid stormwater from the construction site. Inspections and corrective action shall be implemented during the daylight hours (Monday through Sunday, including holidays) until turbidity water quality standards are met.
- D. Post Storm Inspections: Inspections shall occur on the first workday following storms of greater than 0.5 inches in a 24-hour period. Precipitation amounts shall be based on precipitation recorded at a rain gauge installed at the construction site or other approved method. Inspections and corrective action shall be implemented during the daylight hours (Monday through Sunday, including holidays) until turbidity water quality standards are met.
- E. Winter Shutdown Inspections: Inspections during winter shut down shall occur as specified in the NPDES General Permit for Stormwater Discharges from Construction Activities (commonly known as the Construction General Permit)
- F. Provisions for Handling Emergencies: Contact information shall be provided to DES for at least two people that DES can contact at any time regarding construction related stormwater concerns. The Applicant shall prepare an Emergency Procedures Plan describing procedures to address and correct emergency, construction related stormwater issues in an expeditious manner. The plan shall include the responsibilities of key individuals, the availability of equipment, and the availability of erosion control and BMP supplies. All emergency erosion control and BMP supplies must be kept on-site.
- G. Inspection and Maintenance Plans and Reports: Written inspection and maintenance reports shall include the items stipulated in the EPA NPDES General Permit for Stormwater Discharges from Construction Activities, as well as the predicted 24-hour rainfall for pre-storm inspection reports, measured rainfall amounts for post-inspection reports. The reports shall also indicate if erosion control measures "pass" or "fail". Unless otherwise

authorized by DES, the reports shall be submitted to DES by electronic mail (email) within 24 hours of each inspection.

- H. Weather Station Specifications: Unless otherwise authorized by DES, the Applicant shall be responsible for maintaining a weather station that can measure rainfall to an accuracy of 0.01 inches, monitor temperature to an accuracy of 1 degree Fahrenheit or Celsius, and has hourly data storage and download capabilities.
- I. Precipitation Notification Plan: The Applicant shall specify how the Monitor, and others, will be notified when precipitation has occurred that will trigger the need for inspections and/or turbidity sampling. Automatic notification is preferred. If considered necessary and feasible by DES, the weather station shall be equipped to send automatic email notifications to notify the Monitor when construction BMP inspections and/or turbidity sampling is necessary. Should automated email notification be considered necessary, it shall be capable of the following: Start of rain event: Once 0.25 inches of rain or rain-mix precipitation has been measured an automated email notification will be sent to the prime Contractor, the Monitor, and any other interested parties. The email shall provide hourly rainfall, and time of rainfall for the previous 24 hours. End of rain event: Once six hours without rain or rain-mix precipitation has passed an automated email notification will be sent to the prime Contractor, the Monitor and DES. The email shall provide hourly rainfall and time of rainfall from the start of the rain event to the end of the rain event, including the six hour "dry" period.
- J. Turbidity Monitoring: To confirm that construction best management practices (BMPs) for controlling erosion are performing as intended, turbidity monitoring is needed. Unless otherwise authorized by DES, the Applicant shall submit a Turbidity Sampling Plan that includes the turbidity monitoring elements specified in the February 2, 2009 DES Inter-Department Communication entitled "Amendment of the November 16, 2006 Guidance for BMP Inspection and Maintenance and Turbidity Sampling and Analysis Plans for I-93 Expansion Project Water Quality Certification". This document includes guidance regarding sampling station number and locations, sampling frequency, sampling duration, size of storms that need to be sampled, how soon after the start of precipitation sampling should begin, quality assurance quality control provisions, and turbidity meter specifications.

The above construction inspection/maintenance, turbidity monitoring and reporting requirements, combined with a requirement that a sufficient quantity of erosion control supplies shall be kept on site to expeditiously respond to erosion control issues, should be sufficient to ensure and confirm that proposed erosion control measures during construction are not causing or contributing to surface water quality violations.

Similar inspection, maintenance and monitoring can be required to ensure that permanent erosion control measures continue to function properly after construction.

- D-11. The potential discharge of lubricating oils to the ground and surface waters from the turbines and electrical transmission facilities associated with the Activity is a potential water quality concern. The Applicant has stated in its 401 Water Quality application that they will prepare a Spill Prevention Control and Countermeasure (SPCC) Plan in accordance with EPA criteria (40 CFR 112). The SPCC Plan will address operating procedures to prevent oil spills, control measures installed to prevent oil from entering surface waters and countermeasures to contain, clean up and mitigate the effects of and oil spill. According to 40 CFR 112.3(d), a licensed Professional Engineer must review and certify a Plan for it to be effective to satisfy the requirements. By means of this certification the Professional Engineer attests: (1) That she or he is familiar with the requirements of this part ; (2) That she or his agent has visited and examined the facility; (3) That the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part; (4) That procedures for required inspections and testing have been established; and (5) That the Plan is adequate for the facility. Proper implementation of an approved SPCC Plan certified by a Professional Engineer licensed in the State of New Hampshire is expected to prevent water quality violations associated with the discharge of lubricating oils.
- D-12. During construction of the Activity, improper management of concrete washout activities could result in surface water quality violations. The Applicant proposes to prohibit such discharges through signage and designation of washout areas designed to contain concrete wash water. Preparation and implementation of a DES approved concrete wash water plan can be required to prevent potential water quality violations due to concrete wash water.
- D-13. Operation of the Activity could result in the application of herbicides to control vegetation along access roads, pads and in the power line corridors. Improper application of herbicides can harm aquatic life and result in surface water quality violations. An email sent to DES on November 13, 2008 by Horizon's Engineering Inc. on behalf of the Applicant, stated that herbicide use will be limited to just the switchyard and substation areas. "This is due to safety concerns about using mechanized equipment (weed-whackers, and the like) around electrical equipment. If needed, herbicides will be applied in conformance with best management practices and per manufacturers recommendations. For all other areas vegetation management (typically once-a-year mowing of turbine pads and roadside slopes) will generally be done with a flail-type mower or rotary bush hog. Occasional management of successional

growth under powerlines will be done through mechanized means (typically a "Brontosaurus" type of boom mower) only." It is expected that such limited use of herbicides applied in accordance with best management practices and per manufacturer's recommendations will not significantly impact surface water quality.

- D-14. Maintenance of roads during the winter can sometimes involve application of de-icing chemicals that contain chloride (i.e. rock salt), which is potential water quality concern. Chlorides are conservative substances that persist in the environment. Frequent application of road salt can result in levels of chloride in surface waters that are harmful to aquatic life. In an email sent to DES on November 10, 2008 by Horizons Engineering on behalf of the Applicant, the following is stated: "Winter access for preventative maintenance will be done using tracked equipment (snowmobiles and snowcats), however plowing may be needed for unscheduled maintenance of turbines that require large or heavy component replacement if oversnow transport is not a feasible option. During such an unplanned event it is possible that sand or a sand/salt blend might need to be applied to the plowed road surface to aid in traction of a transport vehicle hauling a replacement part. Again, these type of events are considered infrequent and would be used if all other reasonable options (such as over snow transport) have been exhausted first." "The blending of salt with the sand is generally done to keep the sand from freezing so that the sand can be loaded into a spreading vehicle to be applied to roadway to aid in traction. Given the anticipated infrequent nature of needing a plowed access to a portion of the site (unforeseen equipment breakdown and replacement), the ability to find dry sand that is free from any salt in the dead of winter may severely hamper the ability to make repairs to their infrastructure." It is expected that such limited use of sand and chloride will not significantly impact surface water quality.
- D-15. Projects involving alteration of terrain can result in discharges to surface waters of nutrients such as phosphorus and nitrogen that can lead to excessive aquatic plant growth and impairment of aquatic life and contact recreational uses such as swimming or wading. Application of fertilizers can be a primary source of nutrients. An email sent to DES on November 13, 2008 by Horizon's Engineering on behalf of the Applicant, stated the following: "Fertilizers will only be used for initial vegetation establishment if soils analyses indicate a need for fertilizer. In such case the fertilizer will be applied only at agronomic rates indicated by such soil analyses." It is expected that a one time application of fertilizer with fertilizer application rates for nitrogen, phosphorus and potassium based on soils analyses coupled with requirements to only use fertilizers with slow release nitrogen and no pesticides will not result in any significant impacts to surface water quality.

- D-16. Projects involving alteration of terrain can result in water temperature increases due to removal of vegetation adjacent to surface waters that provide natural shading, construction of impervious surfaces such as pavement and rooftops and construction of best management practices such as detention ponds. Significant temperature increases can adversely impact the Biological and Aquatic Community Integrity (Env-Wq 1703.19) of surface waters especially in temperature sensitive cold water fisheries. The Activity has been designed to minimize thermal increases by utilizing gravel instead of impervious pavement for access roads and pads, by maintaining natural vegetated buffers to surface waters (except at stream crossings) that will aid in the re-assimilation of runoff into the ground where it can be cooled and enter the groundwater table, and by avoiding the use of best management practices that detain stormwater such as detention ponds. Construction of the proposed stormwater system for the Activity is not expected to result in any significant increase in water temperature and, therefore, should not cause or contribute to impairment of the Biological and Aquatic Community Integrity (Env-Wq 1703.19).
- D-17. Confirmation that operation of the Activity does not cause or contribute to surface water quality violations can be determined by development and implementation of a surface water monitoring plan with appropriate quality assurance/ quality control provisions.

E. WATER QUALITY CERTIFICATION CONDITIONS

- E-1. The Activity shall not cause or contribute to a violation of surface water quality standards. If DES determines that surface water quality standards are being violated as a result of the Activity, DES may modify this 401 Certification to include additional conditions to ensure the Activity complies with surface water quality standards, when authorized by law, and after notice and opportunity for hearing.
- E-2. The Applicant shall allow DES to inspect the Activity and its effects on affected surface waters at any time to monitor compliance with the conditions of this 401 Certification.
- E-3. The Applicant shall consult with DES regarding any proposed modifications to the Activity, including construction or operation, to determine whether this 401 Certification requires modification in the future.
- E-4. The Applicant shall comply with the conditions of the DES Wetlands Bureau Permit issued for the Activity by the DES Wetlands Bureau, including any amendments. The conditions shall become conditions of this 401 Certification upon issuance of this 401 Certification. This 401

Certification approval is contingent upon issuance of the DES Wetlands Bureau permit.

- E-5. The Applicant shall comply with the conditions of the DES Alteration of Terrain Program Permit issued for the Activity by the DES Terrain Alteration Bureau, including any amendments. The conditions shall become conditions of this 401 Certification upon issuance of this 401 Certification. This 401 Certification approval is contingent upon issuance of the DES Alteration of Terrain Program permit.
- E-6. Unless otherwise authorized by DES, the Applicant shall keep a sufficient quantity of erosion control supplies on the site at all times during construction to facilitate an expeditious (i.e., within 24 hour) response to any construction related erosion issues on the site.
- E-7. The Applicant shall develop and submit a Construction BMP Inspection and Maintenance Plan to DES for approval at least 90 days prior to construction. Unless otherwise authorized by DES, the plan shall incorporate all elements described in section D-10 (items A through I) of this 401 Certification. The Applicant shall then implement the approved plan.
- E-8. The Applicant shall prepare a turbidity sampling plan to confirm that measures to control erosion during construction are not causing or contributing to surface water quality violations. Unless otherwise authorized by DES, the turbidity sampling plan shall include the turbidity monitoring elements specified in the February 2, 2009 DES Inter-Department Communication entitled "Amendment of the November 16, 2006 Guidance for BMP Inspection and Maintenance and Turbidity Sampling and Analysis Plans for I-93 Expansion Project Water Quality Certification" which includes guidance regarding sampling station number and locations, sampling frequency, sampling duration, size of storms that need to be sampled, how soon after the start of precipitation sampling should begin, quality assurance quality control provisions, and turbidity meter specifications. The plan shall be submitted to DES for approval at least 90 days prior to construction. The Applicant shall then implement the approved plan. Unless otherwise authorized by DES, the turbidity sampling results along with station ID, date, time, other field notes, and a description of corrective actions taken when violations of state surface water quality criteria for turbidity are found, shall be submitted to DES via electronic mail within 48 hours of collection.
- E-9. 'Rock sandwich' cross drainage as shown on the detail on sheet 143 of the plans referenced in section C-18 of this 401 Certification, shall be used in all areas where roads are constructed through wetlands excluding stream channel crossings. The Applicant shall retain the services of a Professional Engineer licensed in the State of New Hampshire to inspect the site during

construction to determine where any additional rock sandwiches are necessary to minimize changes in subsurface hydrology.

- E-10. Unless otherwise authorized by DES, the Applicant shall develop and submit a monitoring plan to DES for approval at least 90 days prior to construction. The purpose of the plan is to confirm that operation of the Activity is not causing or contributing to violations of state surface water quality standards. The plan shall include the parameters to be sampled, the location, timing and frequency of sampling, sampling and laboratory protocols, quality assurance / quality control provisions as well as when data will be submitted to DES. The applicant shall consult with DES and submit the monitoring data in a format that can be automatically uploaded into the DES Environmental Database. Once approved by DES, the Applicant shall implement the sampling plan.
- E-11. In order to ensure the long-term effectiveness of approved permanent stormwater practices, the Applicant shall develop an Inspection and Maintenance (I & M) plan approved by DES. Unless otherwise authorized by DES, the I & M plan shall comply with the requirements of the Alteration of Terrain regulations (Env-Wq 1500 – effective 01-01-2009), section Env-Wq 1507.08 Long Term Maintenance. Prior to construction, the Applicant shall submit the I & M plan to DES for approval and then implement the approved plan.
- E-12. The Applicant shall prepare and submit a Spill Prevention, Control, and Countermeasures plan (SPCC) for the Activity in accordance with federal regulations (40 CFR part 112). The plan shall include a certification by a Professional Engineer licensed in the State of New Hampshire as described in section D-11 of this Certification. The Applicant shall submit the plan to DES Watershed Management Bureau for review and approval at least 90 days prior to the installation of the first turbine. The SPCC Plan shall include, but not be limited to, operating procedures to prevent oil spills, control measures installed to prevent oil from entering surface waters, countermeasures to contain, clean up and mitigate the effects of an oil spill, and facility inspections. The Applicant shall then implement the approved plan and maintain records demonstrating compliance with the plan. Such records shall be made available to DES within 30 days of receiving a written request by DES.
- E-13. The Applicant shall submit a plan to prevent water quality violations due to discharges of concrete wash water during construction. The Applicant shall submit the plan to DES Watershed Management Bureau for review and approval at least 90 days prior to placement of any concrete within the Activity area. The Applicant shall then implement the approved plan.
- E-14. Herbicide use associated with the Activity shall be minimized to the maximum extent possible and shall only be allowed on a limited, as-

needed basis in the switchyard and substation areas to control vegetation that could otherwise disrupt operation of the Activity. Herbicides shall only be applied in strict accordance with the manufacturer's recommendations. Unless otherwise authorized by DES, the Applicant shall maintain records of herbicide use, including the name and brand of herbicide used, the date herbicides were applied, where they were applied, and the amount used. Such records shall be provided to DES within 30 days of receiving a request from DES.

- E-15. Unless otherwise authorized by DES, fertilizers shall only be applied once on soils disturbed during construction to support the initial establishment of vegetation. Prior to fertilizer application, soils shall be tested to determine the minimum amounts of lime, nitrogen (N), phosphorus (P) and potassium (K) needed to support vegetation. Lime application rates, fertilizer selection (in terms of N, P and K content) and fertilizer application rates shall be consistent with the soil test results. Fertilizers shall not contain any pesticides. Where possible, fertilizer with slow release nitrogen shall be used. Soil test results, the name, brand and nutrient content (N, P and K) of fertilizer and application rates for lime and fertilizer shall be provided to DES within 30 days of receiving a request from DES.
- E-16. To the maximum extent possible, winter access for maintenance or other purposes shall be accomplished using tracked equipment (i.e., snowmobiles and snowcats). Plowing and/or sanding of roads (including use of sands containing chloride) for winter access shall be minimized to the maximum extent possible, and shall only be allowed when over-snow transport using tracked equipment is not feasible (i.e., such as for the unscheduled maintenance of turbines that require large or heavy component replacement that cannot be transported over-snow). Unless otherwise authorized by DES, the Applicant shall maintain records of the dates when chloride was applied, the reason it was applied, and the estimated amount of chloride applied on each date. The Applicant shall submit such records to DES by May 1 of the first two years of operation and within 30 days of receiving a request from DES thereafter.
- E-17. The terms and conditions of this 401 Certification may be modified and additional terms and conditions added as necessary to ensure compliance with New Hampshire surface water quality standards, when authorized by law, and after notice and opportunity for hearing.

F. APPEAL

If you are aggrieved by this decision, you may appeal the decision to the Water Council. Any appeal must be filed within 30 days of the date of this decision, and must conform to the requirements of Env-Wc 200. Inquiries regarding appeal procedures should be directed to NHDES Council Appeals Clerk, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095; telephone (603) 271-6072.

If you have questions regarding this Certification, please contact Gregg Comstock at (603) 271-2983.



Paul M. Currier

for
Harry T. Stewart
Director, DES Water Division

cc: Richard Roach, ACOE
Carol Henderson, NH Fish and Game
Town of Dummer Board of Selectman
Coos County Commissioner's Office
Dixville (Unincorporated Place), Clerk
Millsfield (Unincorporated Place), Clerk
Ken Kimball, Appalachian Mountain Club
Lisa Linowes, Industrial Wind Action Group
Thomas Burack, Chairman, EFSEC
Thomas Getz, EFSEC

**NH Department of Environmental Services (DES)
Response to Public Comment and List of Substantive Changes for
Section 401 Water Quality Certification (WQC # 2008-004)
Granite Reliable Power Windpark in Coos County
4/27/09**

On February 13, 2009, the New Hampshire Department of Environmental Services (DES) issued a draft Section 401 Water Quality Certification for public comment for the Granite Reliable Power Windpark in Coos County (WQC # 2008-004). The public comment period ended on March 18, 2009. Comments were received from the Appalachian Mountain Club (AMC) and the Industrial Wind Action Group (IWAG). The following represents DES' response to comments. To facilitate review, comments are numbered (i.e., Comment A1, Comment B2, etc.) with DES' response provided immediately below each comment in bold, italicized font. Immediately following the response to comments is a list of substantive changes made to the draft 401 Certification.

A. Comments from the Appalachian Mountain Club (AMC)

The Appalachian Mountain Club recommends, based on the testimony submitted during the NH Site Evaluation Committee hearings, that the draft 401 WQC for this Project be modified to include the following in Section E - Water Quality Certification Conditions.

Comment A1: To encourage natural forest regeneration on disturbed sites the Applicant should be required as follows: Materials used for erosion control in the high elevation ecosystems (\geq 2700 feet in elevation) shall be limited to natural organic materials like wood chips or bark that will not inhibit natural regeneration of the forest, and prohibit techniques such as non-native grass mixes that inhibit natural forest regeneration.

DES Response: The Applicant has consulted with the DES Alteration of Terrain Bureau and the New Hampshire Department of Resources and Economic Development, Division of Forests and Lands, Natural Heritage Bureau regarding appropriate soil stabilization techniques that won't inhibit natural forest regeneration in the high elevation ecosystems. Agreed upon seeding requirements/specifications are shown on sheet 143 of the plans and include only native high elevation grass species. In addition, condition 9 of the Alteration of Terrain Bureau conditions submitted to the EFSEC on February 10, 2009 (which are also conditions of the 401 Certification – see condition E-5), requires the Applicant to comply with the project specific seeding specifications included on sheet 143 of the plans.

Comment A2: The Project will represent some of the highest elevation road construction of this size and magnitude in New England and not experienced before in New Hampshire. It will involve road construction on extremely steep slopes, large cut and fills, fragile soils and an environment where precipitation is dramatically higher due to orographic effects. The Certification should stipulate that:

- 1) The Monitor should be a qualified 3rd party paid for by the Applicant but who is directly responsible to DES, not to the Applicant.
- 2) The Monitor must be free of any conflict of interest arising from his or her employment or relationship to the Applicant, or its contractors.
- 3) The Monitor should have the authority to immediately stop construction activity if permit conditions are not being strictly adhered to or to protect the environment.

DES Response: DES believes that the qualification and reporting requirements of the environmental monitor specified in the Alteration of Terrain Permit, which are also conditions (by reference) in the 401 Certification, are adequate (see below). Should issues arise, the DES Alteration of Terrain Bureau will know within 24 hours and take appropriate steps.

Condition E-5 of the 401 Certification requires the following:

“The Applicant shall comply with the conditions of the DES Alteration of Terrain Program Permit issued for the Activity by the DES Terrain Alteration Bureau, including any amendments. The conditions shall become conditions of this 401 Certification upon issuance of this 401 Certification. This 401 Certification approval is contingent upon issuance of the DES Alteration of Terrain Program permit.”

The DES Alteration of Terrain Program Permit requires the following:

“10. The permittee shall employ the services of an environmental monitor (“Monitor”). The Monitor shall be a Certified Professional in Erosion and Sediment Control or a Professional Engineer licensed in the State of New Hampshire and shall be employed to inspect the site from the start of alteration of terrain activities until the alteration of terrain activities are completed.

11. During this period, the Monitor shall inspect the subject site at least once a week, and if possible, during any ½ inch or greater rain event (i.e. ½ inch of precipitation or more within a 24 hour period). If unable to be present during such a storm, the Monitor shall inspect the site within 24 hours of this event.

12. The inspections shall be for the purposes of determining compliance with the permit. The Monitor shall submit a written report to the Department within 24 hours of the inspections. The reports shall describe, at a minimum, whether the project is being constructed in accordance with the approved sequence, shall identify any deviation from the conditions of this permit and the approved plans, and identify any other noted deficiencies.

13. The Monitor shall provide technical assistance and recommendations to the Contractor on the appropriate Best Management Practices for Erosion and Sediment Controls required to meet the requirements of RSA 485-A:17 and all applicable DES permit conditions.

14. Within 24 hours of each inspection, the Monitor shall submit a report with photographic documentation to DES via email (to Craig Rennie at: craig.rennie@des.nh.gov).”

Comment A3: It is common for high elevation soils to have broad areas of subsurface seepage flow that are ecological important in these high elevation ecosystems. The Application proposed to constrict and channelize flows under the roads. In Maine it has been required that 'rock sandwiches' be used when road construction interfaces with these broad subsurface flow conditions. The AMC and the State's Public Counsel witness have testified on the need for the 'rock sandwich' technique and the Applicants consultant has now admitted that this technique is warranted for this Project. The Water Quality Certificate should require that an independent 3rd party, qualified expert be required to identify where "rock sandwiches" are appropriate and require the Applicant to use this technique in those locations to protect natural subsurface flow patterns.

DES Response: The Applicant has included rock sandwiches in the design. Sheet 143 of the plans shows a detail of a ‘rock sandwich’ and includes a note which states the following: “Rock sandwich cross drainage to be used in all areas where roads are constructed through wetlands excluding stream channel crossings. Additional areas requiring the rock sandwich may be encountered once construction commences and will be determined by the field engineer.”

To help ensure that rock sandwiches are constructed where appropriate, Condition E-9 has been added to the 401 Certificate as follows:

‘Rock sandwich’ cross drainage as shown on the detail on sheet 143 of the plans referenced in section C-18 of this 401 Certification, shall be used in all areas where roads are constructed through wetlands excluding stream channel crossings. The Applicant shall retain the services of a Professional

Engineer licensed in the State of New Hampshire to inspect the site during construction to determine where any additional rock sandwiches are necessary to minimize changes in subsurface hydrology.

B. Comments from the Industrial Wind Action Group (IWAG):

The Industrial Wind Action Group (“IWA”) is a national organization focused on raising awareness of the negative impacts of utility-scale wind if sited improperly. In this capacity, our organization closely monitors wind energy proposals, development, and post-construction performance and attendant impacts. IWA has been granted intervenor status before the New Hampshire Site Evaluation Committee regarding the Granite Reliable Power LLC (“GRP”) wind energy proposal, SEC Docket 2008-04.

We appreciate the opportunity to provide comments to the New Hampshire Department of Environmental Services in regard to the draft 401 Water Quality certificate submitted to the Site Evaluation Committee (“SEC”) on February 10, 2009. Per the document filed with the SEC, you state the public comment period will extend from “mid February to mid March 2009. It is our hope that these comments fall within the time period you contemplated.

General Comments:

Wind energy development must be planned, sited, designed, mitigated, and monitored in a thoughtful manner to ensure it is done right from the start. In order to ensure high-quality, legitimate, and non-controversial development decisions, such resource planning must be science-based. The NH Department of Environmental Services, in our opinion, did not meet this test in regard to its review of the wetlands impacts and terrain alteration that will result from the proposed GRP project.

The Administrative rules Env-Wt 300 govern DES’ decision to grant a wetlands permit. In the findings section of the Wetlands Bureau Conditions, Finding #11, the DES asserts “The applicant has demonstrated by plan and example that each factor listed in Env-Wt 302.04(a) Requirements for Application Evaluation, has been considered in the design of the project.” Yet, in our reading of the rules and the materials submitted to DES by GRP, we cannot find any evidence in the record that shows:

Comment B1: The applicant submitted proof that the potential impacts have been avoided to the maximum extent practicable (Env-Wt 302.03(a))

DES Response: The comment references wetland regulations and is more related to issuance of the DES Wetland Permit and not the 401 Water Quality Certification. Although a response is not needed for 401 Water Quality Certification, the DES Wetland Bureau offers the following response: In a letter dated November 12, 2008 from DES to Thomas Burack, Chairman of the Site Evaluation Committee, items 2, 3 and 6 indicate the need for the Applicant to revise the plans to minimize on-site wetland impacts. In response, revised plans were submitted to DES on January 5, 2009, which show additional on-site wetland avoidance measures to the maximum extent practicable. This is considered proof that potential impacts have been avoided to the maximum extent practicable.

Comment B2: The alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site (Env-Wt 302.04(a)(2)). In fact, there is no evidence in the record that any alternative analysis was conducted.

DES Response: See DES response to Comment B1.

Comment B3: The extent of impact of the project on plants, fish and wildlife. While the DES at least acknowledges several State listed threatened and endangered species in Finding #9, there is no

information that attempts to quantify the impact of the project development on these species nor does DES consider the extent to which their habitat will be degraded or destroyed through direct and secondary impacts. There is no indication DES requested information pertaining to federally threatened or endangered species including migratory wildlife. (Env-Wt 302.04(a)(7))

DES Response: The comment references wetland regulations and is more related to issuance of the DES Wetland Permit and not the 401 Water Quality Certification. Although a response is not needed for 401 Water Quality Certification, the DES Wetland Bureau offers the following response: DES recognized the potential impact on plants, fish and wildlife as part of the wetland application review process, and on November 12, 2008, DES requested additional information from the Applicant which included that the Applicant address concerns raised by the NH Fish & Game Department, and that the Applicant revegetate as many areas as practicable to protect water quality and promote wildlife passage. Further, in the wetlands permit, DES issued condition #25 which states, " This permit is contingent upon the execution of a conservation easement on 620 acres as depicted on revised plans received by DES on February 5, 2009, and in accordance with the high-elevation mitigation plan (above 2,700' in elevation) that is negotiated and agreed upon with the NH Fish & Game Department.. And finally Finding #9 in the wetlands permit states, "The applicant proposes to mitigate the environmental impacts by executing a conservation easement on 620 acres of undeveloped land within Columbia and Erving's Location, and by negotiating an agreement with the NH Fish & Game Department to preserve high-elevation habitat (land above 2,700 square feet in elevation) to protect sensitive wildlife species, such as American marten, Bicknell's thrush, and American three-toed woodpecker. Mitigation will also include the creation of 8 vernal pools, totaling 3,600 square feet, within the proposed easement areas to provide suitable herpetological habitat."

Comment B4: Whether DES evaluated other wind energy facilities located at elevations above 2700 feet and considered the high risk of increased flooding, erosion, or sedimentation. DES appears to treat this extensive development as comparable to subdivision roads in areas already impacted by human activity rather than recognizing the unique issues that might arise at this project site.

DES Response: DES respectfully disagrees as several requirements have been incorporated into the 401 Water Quality Certification, Wetlands Permit and/or Alteration of Terrain Permit to address the high elevation construction which aren't included in typical subdivision roads. Examples include the following: High elevation plant seedings that won't inhibit natural forest regeneration in the high elevation ecosystems (see DES Response to Comment A1); construction of rock sandwiches to minimize changes in subsurface hydrology (see DES Response to Comment A3); water diversion bars along steep sections of roadway to help prevent erosion; and enhanced inspection, maintenance and surface water monitoring requirements during construction to ensure that erosion control measures have been installed properly and are preventing erosion related water quality violations from occurring (see DES Response to Comment B9).

Comment B5: Whether the department abided by Rule Env-Wt 302.04(d) in determining that any other practicable alternative would have a less adverse impact on the area and environments under the department's jurisdiction. The department's failure to request an alternatives analysis makes it impossible for the any such determination to be made.

DES Response: The comment references wetland regulations and is more related to issuance of the DES Wetland Permit and not the 401 Water Quality Certification. Although a response is not needed for 401 Water Quality Certification, the DES Wetland Bureau offers the following response: See DES response to Comment B1. Revisions to the plans submitted to DES on January 5, 2009 showing less

wetlands impact, indicate that the alternative would have a less adverse impact on the area and environment under DES jurisdiction.

Comment B6: In light of these concerns and the ongoing SEC hearings, we believe DES released its findings prematurely. There are outstanding questions pertaining to wind energy development at high elevations which should be answered before asking the public to provide meaningful input to the process. If not too late, we respectfully ask that a public hearing be scheduled to grant the public the full benefit of hearing directly from DES as to how it conducted its review of the project.

DES RESPONSE: *A public hearing is not considered necessary for 401 Certification for the following reasons:*

a) as indicated in DES response to IWAG Comment B4 above, DES believes it has accounted for potential issues associated with protecting water resources at high elevations in its review; and

b) through the EFSEC process,

(1) DES has provided regular updates on the status of the 401 Water Quality Certification (including findings and conditions) as well as the Alteration of Terrain and Wetlands permits which are part of the public record

(http://www.nhsec.nh.gov/2008-04/index.htm),

(2) there has been adequate opportunity for public comment including two EFSEC public informational hearings on October 2, 2008 and March 23, 2009, and

(3) a review of the record indicates that the Industrial Wind Action Group (IWAG) has taken advantage of the process and has filed documents with the EFSEC on several occasions:

9/17/08 Request to Intervene

3/15/09 IWAG letter to NHDES

4/5/09 IWAG Request for Extension of Time

4/10/09 Final Memorandum of Lisa Linowes on behalf of the Industrial Wind Action Group.

In addition to the above general comments we have specific concerns with several of the DES Findings marked D-n.

Comment B7: D-1: Finding D-1 correctly details the number of miles of roads that will be constructed as part of the project site, however we object to the characterization that GRP will be ‘upgrading’ approximately 20 miles of existing gravel logging roads. During testimony before the SEC on March 11, 2009, Horizons Engineering confirmed that the roads would span in width from over 30-feet to 150-feet and in some cases significant ledge cuts would be required on the steeper slopes. The road bases for the existing roads would be substantially rebuilt to withstand the impacts of thousands of tons of equipment. Appendix A and Appendix B of this letter include photographs of roads as built at the Kibby Wind Energy facility in Maine. On March 11, Horizons Engineering confirmed under oath before the SEC that the roads GRP will be constructing will be akin to the roads depicted in these pictures.

DES RESPONSE: *“Upgrading” is a common term used to describe changes made to infrastructure (such as roads) so that they will achieve their intended use. No change was made to the document for the following reasons:*

a) Alternative wording was not provided,

b) “upgrading” is simply used to describe a portion of the project, and

c) use of the word “upgrading” does not have any bearing on conditions necessary to protect surface water quality.

Comment B8: D-9: Please state the basis for the assertion made in finding D-9 that “other pollutants typically associated with vehicular traffic are not a concern as the project will only result in 2 to 3 vehicle trips per week”. Construction of the project site will require substantial vehicular traffic during the 1-2 year construction period. Further, it is well documented that wind energy facilities invite traffic given the substantial road system, despite signage and gates.

DES RESPONSE: *The Applicant has stated that there will only be 2 to 3 vehicles per week once the project is constructed. During the construction process there will likely be more activity but it is temporary in nature. Over the long term, given the light weekly traffic loads, pollutant loadings from vehicular traffic are not expected to be a significant concern.*

Comment B9: D-10: Given the location of the project site at above 2700 feet elevation it is critical that the permit findings recognize the high risk of erosion when vegetation is removed. This is due to the shallow soils, steep slopes, and high precipitation at these elevations. The Kibby Mountain wind facility experienced a significant failure of erosion control measures resulting in a 900-foot mud slide. We’ve included in Appendix C the site inspection report prepared around the time of the failure and photographs of the mud slide. Given the unique attributes of the GRP site and the enormity of the project scale, we strongly recommend the DES require that the site be monitored more frequently than once per week and that all rain events of ½ inch or more should result in a monitor visit without exception.

DES RESPONSE: *A condition was added (E-7 in the final 401 Certification) which states the following: “The Applicant shall develop and submit a Construction BMP Inspection and Maintenance Plan to DES for approval at least 90 days prior to construction. Unless otherwise authorized by DES, the plan shall incorporate all elements described in section D-10 of this 401 Certification”. Section D-10 was amended to include daily inspections by the Contractor, at least weekly inspections by the environmental monitor, pre-storm inspections for any storm event of 0.5 inches or more, turbidity monitoring during storm events greater than 0.5 inches in 24 hours, inspections and corrective actions in daylight hours during storms where turbidity monitoring indicates water quality violations, post storm inspections for storms greater than 0.5 inches in 24 hours. This will result in BMPs being inspected more than once per week.*

Comment B10: D-11: It is important to acknowledge that turbine failures including tower collapse and fire have resulted in site contamination due to oil leaks from the turbines. Incidents of this nature have occurred throughout the United States including the March 6 tower collapse in Altona, New York involving a Noble Environmental wind turbine. In addition, the Searsburg wind energy facility in Searsburg, Vermont experienced a collapse in September 2008 resulting in an oil spill and the Maple Ridge wind energy facility in Lowville experienced a transformer failure that leaked oil underground contaminating a residential well.

DES RESPONSE: *Condition E-12 of the 401 Certification requires the Applicant to prepare and implement a DES approved Spill Prevention, Control and Countermeasure (SPCC) plan in accordance with federal regulations (40 CFR part 112). The plan must include operating procedures to prevent oil spills, control measures to prevent oil from entering surface waters, countermeasures to contain clean up and mitigate the effects of an oil spill and facility inspections. Federal regulations (40 CFR part 112) also require certification of the SPCC plan by a licensed Professional Engineer. By means of this certification the Professional Engineer attests: (1) That she or he is familiar with the requirements of this part; (2) that she or his agent has visited and examined the facility; (3) that the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry*

standards, and with the requirements of this part; (4) that procedures for required inspections and testing have been established; and (5) that the Plan is adequate for the facility. The requirement to include a certification by a Professional Engineer licensed in the State of New Hampshire was added to condition E-12. In addition, condition E-12 was amended to require the Applicant to maintain records demonstrating compliance with the SPCC plan and submit such records to DES within 30 days of receiving a written request by DES. Proper implementation of an approved SPCC Plan certified by a Professional Engineer licensed in the State of New Hampshire is expected to prevent water quality violations associated with the discharge of lubricating oils.

Comment B11: D-13: DES' finding D-13 is particularly worrisome as it suggests DES reviewers do not understand the importance of carefully managing the edge effects of the road. We recommend consultation with NH F&G personnel and NH Audubon to better understand how best to manage re-vegetation efforts. Per testimony before the SEC, the use of grasses should be avoided to ensure grass does not spread into the forested area and suppress re-growth of the trees.

DES RESPONSE: *See DES Response to comment A1 above.*

Comment B12: D-14: We encourage DES to investigate wind energy facilities in Maine, Vermont, Pennsylvania, New York, and elsewhere to understand the frequency in which de-icing chemicals are needed. While the GRP has stated salt used would be limited, we encourage DES to validate such assertions. There have been a number of turbine failures in New York, Illinois, and Pennsylvania during the winters of 2007 and 2008.

DES RESPONSE: *Finding D-14 of the 401 Certification discusses how the Applicant will minimize use of deicing chemicals containing chlorides (i.e., road salt). Condition E-16 of the draft 401 Certification requires the Applicant to minimize plowing and sanding/salting of roads to the maximum extent possible and to only consider this option when over-snow transport using tracked equipment is not feasible (i.e., such as for the unscheduled maintenance of turbines that require large or heavy component replacement that cannot be transported over-snow). To validate the amount of chloride used each year, the Applicant must maintain records of the dates when chloride was applied, the reason it was applied, and the estimated amount of chloride applied on each date. The Applicant must then submit such records to DES. In the draft 401 Certification, the requirement was to submit such records within 30 days of receiving a request from DES. This requirement has been revised in the final 401 Certification to require submittal of chloride use records by May 1 of the first two years of operation and within 30 days of receiving a request from DES thereafter.*

List of Substantive Changes Made to Draft 401 Certification

Section	Description of Substantive Changes Made to Draft
Finding D-10	<p>In light of the sensitive resources within the project area and scale of the project, additional construction BMP inspection / reporting requirements and turbidity monitoring requirements were added to prevent construction related surface water quality violations. Additional requirements included:</p> <p style="padding-left: 40px;">Weekly erosion control meetings, daily inspections by the prime Contractor, weekly inspections by the certified professional in erosion and sediment control (Monitor), pre-storm inspections by the Monitor, emergency inspections during storm events, post storm inspections, winter shutdown inspections, provisions for handling emergencies, reporting requirements including a submission of reports electronically within 24 hours, weather station specifications, submission of a plan to notify the Monitor and others when precipitation has occurred that will trigger the need for inspections and/or turbidity monitoring, and submission of a turbidity monitoring plan in accordance with DES guidance.</p>
Finding D-11	Added professional engineer certification requirements per federal regulations for oil Spill Prevention Control and Countermeasure Plans .
Condition E-7	Revised the condition to submit a Construction BMP Inspection and Maintenance Plan to include the new requirements specified in Finding D-10.
Condition E-8	Revised the condition to submit a turbidity sampling plan that includes the elements in DES document t dated February 2, 2009 that includes guidance regarding sampling station number and locations, sampling frequency, sampling duration, size of storms that need to be sampled, how soon after the start of precipitation sampling should begin, quality assurance/quality control provisions, and turbidity meter specifications.
Condition E-9	Added a condition to install rock sandwich cross drainage per sheet 143 of the plans at all areas where roads are constructed through wetlands (excluding stream channel crossings) and to retain the services of a professional engineer licensed in New Hampshire to inspect the site during construction to determine where additional rock sandwich cross drainage should be constructed.
Condition E-12	Added a requirement to the oil Spill Prevention, Control and Countermeasure Plan (SPCCP) to include a certification from a professional engineer licensed in New Hampshire as specified in federal regulation and Finding D-11. Also added a requirement to maintain records of compliance with the SPCCP and to submit such records to DES upon request.
Condition E-16	Added a requirement to submit records of chloride use associated with winter deicing practices to DES by May 1 of the first two years of operation.