

**MAINE DEPARTMENT OF AGRICULTURE
FOOD AND RURAL RESOURCES
OFFICE OF THE STATE SOIL SCIENTIST
STATE HOUSE STATION # 28
AUGUSTA, MAINE 04333
PHONE: (207) 287-2666
E-MAIL: DAVID.ROCQUE@MAINE.GOV**

MEMO

To: Marsha Spencer-Famous, LURC Project Manager
From: David P. Rocque, State Soil Scientist
Re: Sixth Procedural Order, Kibby Expansion Project
Date: May 21, 2010

For response by State Soil Scientist: Testimony at the public hearing indicated observations of unstable soils in the area of Sisk Mountain and construction associated with Route 27. In your opinion, is the soil assessment conducted by TC adequate to determine the stability of the project area for the purpose of constructing roads and erecting turbines? Are the construction methods proposed adequate for the site conditions such that soils can be properly stabilized?

State Soil Scientist Response: If you look back at my comments for the Reddington Wind farm proposal, you will find a lengthy discussion about the instability and fragility of high mountain soils. That, along with the potential alteration of the very significant natural hydrology in the mountains, was my two greatest concerns with road construction in those areas. After giving the issue much consideration and discussing the subject with all of the technical experts I could contact, I came up with a proposal for collecting soils information and designing appropriate erosion and stormwater Best Management Practices that I believed had a reasonable likelihood of working. No one knew if they would be successful because roads were not previously allowed in the high mountain areas so we did not have any experience to rely on. I am pleased to state that the techniques have now been applied and found to perform as proposed on the Kibby Range and have also been used successfully on Stetson I and II.

The Class L Soil Survey was specifically developed by me to collect the kinds of soil information critical to the successful development of linear projects such as roads in sensitive areas. Class A High Intensity Soil Survey Information is required for non-linear parts of windfarm projects. Those are both very detailed soil surveys that provide site specific information necessary to properly evaluate projects such as windfarm developments. Those soil surveys, along with the proper training of contractors and third party inspectors on the "tool box" approach to using Best Management Practices (BMP's)

and use of blasted rock for most of the roads have proven quite effective. Based upon personal site inspections, it is my opinion that minimal soil erosion/sedimentation has occurred on completed windfarm projects and minimal alteration of the natural hydrology has been observed.

Blasted rock makes for a porous road base material that is very stable even when wet. Rock sandwiches have been installed in numerous locations to re-connect the natural hydrology where sheet flow is appropriate and culverts have been used where concentrated flow areas have been encountered.

Based on my knowledge of high mountain soils, I do not believe that Sisk Mountain soils are any more unstable than they are for the Kibby Range or Reddington Range. That belief was supported by the applicant's soils survey information. What makes all high mountain soils unstable is the high organic matter content of the B horizon and the significant hydrology from the contributing upslope watershed. I understand these issues and have requested that appropriate measures be used to assure stable road construction. The tool box approach is critical to the success of construction in high mountain areas. That is because it is virtually impossible to predict exactly where each measure should be used. Unlike lower elevation areas where the predictability of where to use a certain BMP is high, mountain soils have many hidden features that may only be observed during construction. It is therefore, necessary to have trained personal involved with the construction so that they can identify when and where a BMP is needed. The Third Party Inspector process is also helpful as is the fact that I periodically accompany the Third Part Inspector to assure the proper placement and use of BMP's.

I plan on walking the access road path, tower road and tower pad sites prior to construction to point any sensitive areas in advance of work starting. I also plan on visiting the site during construction to make sure proper erosion/sediment control and stormwater measures are being installed. I do not anticipate any more issues with construction on the expansion project than there were for the Kibby Range. In fact, there should be even fewer issues because of what was learned during that phase of the project.

In summary, I do not believe that the soils on Sisk Mountain are any more sensitive or unstable than they are on the Kibby Range. They are typical soils for high mountain areas. I also believe that the applicant has proposed construction techniques that will result in minimal erosion/sedimentation or alteration of the natural hydrology. I and the third party inspector will work with the applicant to assure those goals are achieved.