

Valley Environmental Services  
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November 1, 2004

Mr. John Goodell, P.E.  
SVE Associates  
PO Box 1818, 439 West River Road  
Brattleboro, VT 05302

Re: Wetland Delineation, Vermont Yankee, Vernon, Vermont

Dear Mr. Goodell:

As requested, Valley Environmental Services (VES) met with you on Friday, October 29, 2004. The purpose of our site visit was to delineate any wetlands located in the existing agricultural field to the north of the Vermont Yankee complex. As you know, the final determination of the extent of jurisdictional wetlands can be made only by the Vermont Agency of Natural Resources and the United States Army Corps of Engineers.

#### Site Description

The area subject to our investigation is an existing field that is mown annually for hay. Within this field, there is a low swale that runs from north to south. This swale appears to be isolated from any other wetlands, with the exception of a man-made drainage structure at its southern end. This drainage structure is located at a lower elevation than the swale, and it appears that it has altered the hydrology of the area by increasing drainage.

Although the swale had been recently mown, it appears that the dominant grasses within this area are reed canary grass (*Phalaris arundinacea*) and timothy (*Phleum pratense*). The former is a facultative wetland indicator, while the latter is a facultative upland indicator.

In order to determine if the soils were hydric, holes were dug with a spade throughout the area, and the underlying profile was compared with the

Interagency Document *Field Indicators for Identifying Hydric Soils in New England, Version 3* (2004). It should be noted that we were limited to excavating no deeper than one foot below the surface; however, this was sufficient to examine the entire Ap horizon and the underlying B.

The central portion of the swale contains hydric soils that still appear to be subject to wetland hydrology. The underlying B horizon contained common chroma 2 mottles, and the Ap horizon was dark (chroma 2) and contained oxidized rhizospheres in many areas. The dark A horizon indicates that the hydrology of the swale is still sufficiently "wet" to inhibit oxidation of organic matter during the growing season. Therefore, the extent of the area containing these soil characteristics was encircled with pink "wetland delineation" stake-flags numbered A-1 to A-34.

Areas outside of our delineated boundary did not contain a dark Ap horizon, but rather one of chroma 3. Such soils are generally excluded from being considered hydric soils by the *Field Indicators for Identifying Hydric Soils in New England*. The chroma 3 matrix in the remainder of the field indicates that organic matter is being actively oxidized during the growing season due to a lack of wetland hydrology. Some of these areas appeared to contain "relic" hydric soils, with low chroma mottles in the underlying Bw horizon, while most of the area outside of our wetland delineation does not appear to ever have been wetland. The soils along the edge of recently placed fill were also examined, and were found to be non-hydric with the exception of the area between Flags A-29 and A-30.

## Summary

The existing agricultural field to the north of the Vermont Yankee facility was investigated for wetlands. Although this area has been altered by past agricultural activities and other site work, a core portion of the existing swale appears to still contain wetland hydrology as evidenced by non-relic hydric soils. The remainder of the field contained either non-hydric soils, or hydric soils that have been effectively drained as evidenced by the bright (chroma 3) Ap horizon. While the soils beneath the recently added fill could not be examined, the soils immediately adjacent to the majority of this fill were not hydric, and the area is topographically several feet higher than the delineated wetland. A small corner of the fill does appear to have intruded into the area of hydric soils, and our wetland delineation cuts across this fill between flags A-29 and A-30.

Please do not hesitate to call if you have any additional questions regarding our investigation.

Sincerely,  
Valley Environmental Services



Ward W. Smith  
Professional Wetland Scientist  
Certified Soil Scientist

WWS/kt

