STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

October 16, 1992

Dr. John S. Fleming
Environmental Compliance
Textron Lycoming
550 Main Street
Stratford, CT 06497-2452

Dear Dr. Fleming:

I have reviewed Textron's report titled "Addendum II, Supplementary Hydrogeologic Investigation Report, Textron/Lycoming, Stratford, CT" (prepared by CA Rich Consultants, Inc.; dated September 1992; received 09-25-92). This report was submitted in partial response to my technical review (dated 13 April 1992) of a prior Textron report, which had been submitted in partial compliance with the requirements of Order HM-358. The "Addendum II ..." comprises a study of the geochemical attributes of the peat sequence underlying the former surface impoundment area, with particular reference to potential influence of the peat on contaminant fate and transport.

Textron's discussion and graphical presentation of Eh and pH data (Figure 3) significantly improve understanding of the influence of the peat sequence on local ground water redox geochemistry. The data indicate that ground water within and immediately below the peat is geochemically reducing, whereas ground water above and much deeper below the peat is oxidizing. The observed distribution of ground water redox states has been inferred by Textron to conform with its vertical flow separation model of site hydrostratigraphy. Shallow ground water above the peat is expected, and observed to be, oxidizing under normal conditions. Reducing ground water in and immediately below the peat has been attributed to the reduction of oxygen by organic material as the formerly oxidizing near-surface ground water migrates vertically downward through the peat. Deeper oxidizing ground water is hypothesized to have originated from surface sources far up-gradient from the peat, and has not migrated vertically downward through the peat.

Despite the apparent overall applicability of the flow vertical separation model to the Textron site, the available Eh/pH data do not strongly support Textron's contention that more-or-less discrete upper and lower aquifer units exist, or that said aquifer units can be defined by the base of the peat. The data are just as easily accommodated by a model of a single heterogeneous aquifer with some properties, including Eh, which change gradationally with depth. The observation that reducing ground water is present below the base of the peat sequence appears to demonstrate that the peat does not separate aquifers with distinctly different physical properties.

Textron's geochemical characterization of the peat sequence,

and associated discussion of contaminant fate and transport, is considered sufficient at this time for the purpose of evaluating the adequacy of the RCRA monitoring well network in relation to the dynamics of contaminant plume configuration and migration.

I am presently reviewing CT DEP files to ascertain Textron's status with respect to compliance with the requirements of Order HM-358; I will apprise you shortly if I discover any outstanding issues which require resolution.

I am also evaluating Textron's submittal titled "Ground Water Assessment Modification Plan, Textron/Lycoming, Stratford, CT" (prepared by CA Rich, dated September 1992; rec'd 09-25). I anticipate completing my review of this document shortly, and will transmit my evaluation to you at that time.

Sincerely,

Michael A Fracasso

Michael A. Fracasso
Environmental Analyst
Waste Engineering & Enforcement
Waste Management Bureau

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cc: T. Hughes (CA Rich)