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MEMORANDUM FOR: John J. Linehan, Section Leader
 Repository Projects Branch
 Division of Waste Management

FROM: Leslie A. Peeters
 Repository Projects Branch
 Division of Waste Management

SUBJECT: TRIP REPORT - GROUNDWATER POLLUTION and HYDROLOGY COURSE

A one week course entitled "Groundwater Pollution and Hydrology" was offered in Princeton, N.J. during the week of July 9-13, 1984. The course was directed by Dr. Robert Cleary, Professor of Geosciences at the University of Sao Paulo, Brazil. Two additional lecturers were David Miller of Geraghty and Miller, Inc., and Dr. George Pinder of Princeton University Water Resources Program. Participants were primarily EPA, EPA contractors and chemical manufacturing firms. A list of registrants is presented as Enclosure 1.

The course concentrated exclusively on hazardous/toxic waste disposal and pollution. Dr. Cleary commenced the program with an exhaustive list of references relating to groundwater pollution (Enclosure 2). Following this was a 7 hour introduction to the principles of groundwater hydrology which included:

- the hydrologic cycle
- physical properties and principles
- chemical properties and principles
- groundwater quality
- groundwater movement

David Miller discussed and presented slides of several case histories. These examples were primarily of groundwater contamination by toxic waste landfills located in New Jersey and Long Island.

Dr. George Pinder presented two evening sessions on groundwater modeling. The first event, attended by approximately 50 people, concentrated on the fundamentals of groundwater modeling and contaminant transport. The latter session was much more informal and followed a questions and answers/opinions format. This was by far the most interesting and beneficial aspect of the course, relative to my needs.

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My overall opinion of the course is that it could be a worthwhile training program, depending on the participants technical background. The course covered an extensive amount of material in a short time and thus would be dubbed a "crash course" in groundwater pollution. The value of such courses is debateable. However, the lecturers are quite knowledgeable of the subject matter and present the material in as clear and concise a fashion as possible. For someone who had little or no background in groundwater hydrology this course would provide a comprehensive overview of the fundamental principles. Beyond this, however, the courses applicability to the high-level waste (HLW) program is limited, due to it being focused entirely on chemical waste disposal/pollution in the northeast region of the United States. Of course, some correlation is possible but the overwhelming degree to which all aspects of the course were focused on chemical waste disposal precludes much applicability to HLW disposal.

In short, the course, taught by three experts, presented a voluminous amount of material on groundwater pollution resulting from hazardous waste landfills. Although brief, the modeling sessions clarified many of the questions I had concerning groundwater modeling. Unfortunately, I found the relevance of major portions of the course to HLW concerns questionable.

~~CONFIDENTIAL~~

Leslie A. Peeters
 Repository Projects Branch
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Enclosures:

1. List of Participants
2. Reference Reports and Articles

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