TOXIC-SUBSTANCES HYDROLOGY PROGRAM

CAPE COD SITE

at the

MASSACHUSETTS MILITARY RESERVATION

Field Trip for the
Massachusetts Institute of Technology
Dept. of Civil and Environmental Engineering

October 2, 2004

Trip Leader: Denis LeBlanc
Figure 5.—Six ground-water flow cells and general directions of flow.

B. Section through Barnstable-Yarmouth area. Representative of inner and mid-Cape. Freshwater lens truncated by bedrock and fine-grained sediments. Silt and clay confining beds along Cape Cod Bay displace the freshwater-saltwater boundary offshore.

MMR Plumes
June 2001

Source of data:
MMR Joint Program Office
EXPLANATION

WATER-TABLE CONTOUR--
Arrows show direction of ground-water flow.
Contour interval 2 meters.
Datum is sea level.
Fig. 14. Vertical distribution of detergents in sewage plume. Line of section shown in Figure 1 (from LeBlanc, 1984a).
Figure 5. Longitudinal sections showing the distribution of boron concentrations between the sewage-disposal beds and Ashumet Pond, western Cape Cod, Massachusetts, June 1996 and June 1998. Lines of equal concentration in milligrams per liter. Dots show positions of well screens and multilevel-sampler ports. Location of section line shown in figure 2.
Figure 6. Longitudinal sections showing the distribution of dissolved-oxygen concentrations between the sewage-disposal beds and Ashumet Pond, western Cape Cod, Massachusetts, June 1996 and June 1998. Lines of equal concentration in milligrams per liter. Dots show positions of well screens and multilevel-sampler ports. Location of section line shown in figure 2.
MAP VIEW OF BROMIDE TRACER CLOUD DURING 1985-88 LARGE-SCALE NATURAL-GRADIENT TRACER TEST, CAPE COD, MASSACHUSETTS

Fig. 4. Tracer-test site in abandoned gravel pit, showing water table, location of selected monitoring sites, and predicted and observed path of bromide tracer cloud. Water-table map from Garabedian et al. (1988). Site of test pit in Figure 3 shown by triangle. Only monitoring wells referred to in this report are shown.
Fig. 11. Vertical location of bromide tracer cloud at 33, 237, and 461 days after injection. Cloud locations defined by zones in which bromide concentration exceeded 1 mg/L. Line of section approximately along A-A' in Figure 9.
Ground-Water Flow-Through Ponds

- Aquifer
- Pond
- Pond-bottom sediments
- Ground-water underflow
- Direction of ground-water flow
- Lower extent of ground-water inflow
- Lower limit of pond outflow
- Water table
Phosphorus Plume and Discharge Area

1999

P in mg/L
Figure 5. Final locations of permanent seepage meters, multilevel drive points, horizontal multilevel samplers, and diffusion chambers. (Total seepage locations = 4, total multilevel drive points = 8, total MLS lines = 2 (coupled), total diffusion chamber locations = 8).
FIGURE 2
BACKUS RIVER SURFACE WATER SAMPLING RESULTS
AFCEE - Massachusetts Military Reservation
September 2004 SMB Meeting

**Legend**
- Plume Boundary
- Bog

**Data Source:** USGS, June/July 2004

**Note:** Samples collected by USGS. Analyses performed by USEPA.

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<th>TCE Concentration</th>
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