

**MONTHLY PROGRESS REPORT #14  
FOR MAY 1998**

**EPA REGION I ADMINISTRATIVE ORDER SDWA I-97-1019  
MASSACHUSETTS MILITARY RESERVATION  
TRAINING RANGE AND IMPACT AREA**

The following summary of progress is for the period from May 1 to May 31, 1998. Scheduled actions are for the six-week period ending July 14, 1998.

**1. SUMMARY OF ACTIONS TAKEN**

Sampling

Monitoring wells MW-20S, LRWS-4-1, MW-17D, and 97-3 were resampled for analysis by Method OC21B.

Analytical Results

Electronic Data Deliverables (EDDs) and hardcopy data deliverables were received from ITS (the laboratory contractor) for Sample Delivery Groups (SDGs) 70-73 in May.

Validation

Ogden continued validation of hardcopy deliverables during May. All data contained in SDGs 18-21, 41, 43-47, and 49 had been validated and entered into the database by the end of the month. Additional data have been validated but have not been entered into the database. All validated data entered in the database are attached to this report, and are summarized in Section 2. Validation is underway for SDGs 48 and 50-73.

Water Level Measurements

Water level measurements were collected on May 12 in accordance with a synoptic round of measurements across the Upper Cape that was coordinated by USGS.

Meetings

Weekly project review meetings continued during the month with EPA, MADEP, TRC, and JPO. The Impact Area Study Review Team did not meet in May.

## 2. SUMMARY OF DATA RECEIVED

The data validated during the month are presented in an attachment to this progress report. The attached results include field samples (having sample numbers that end in "A", or "D" for Duplicate) as well as quality control samples (ending in "E" for Equipment blank, "F" for Field blank, "T" for Trip blank). The attachment includes a list of qualifier codes to explain the validation results.

The validated results include samples from seven groundwater monitoring wells. The samples were collected from wells CS10/03MW0604A, CS10/03MW0060, FS12/90WT0005, FS12/90MW0054, USFW/241098, USGS/SDW263111, and USGS/SDW261160. Detected compounds and concentration ranges for the monitoring well samples are summarized in Table 1. No explosive compounds were detected in these samples using EPA Method 8330. Chloroform was the only volatile organic compound (VOC) detected (SDW263111 and SDW261160). Bis (2-ethylhexyl) phthalate (BEHP) was the only semivolatile organic compound (SVOC) detected (90WT0005, 90MW0054, SDW263111, and SDW261160). No pesticides, PCBs, or herbicides were detected in these groundwater samples. Among the 23 metallic analytes, antimony, arsenic, boron, lead, molybdenum, selenium, silver, thallium, vanadium, and mercury *were not* detected. Background levels for metallic analytes in groundwater have not yet been established.

The validated soil results include samples from borings 6, 9, 11, 16, 19, 20, 22, 25, 26, and 30 and from grids in Areas 1-6, 9-10, 12, 14, 20, and 42. Detected compounds and concentration ranges for these samples are summarized in Table 2. This table includes preliminary background concentrations which have been proposed to USEPA and MADEP based on the preliminary results of sampling in Areas 41 (Shawme Crowell State Forest) and 42 (Four Ponds Conservation Area).

The explosive compounds detected in soil using EPA Method 8330 include picric acid at grid 02H, and pentaerythritol tetranitrate at grid 01I. VOCs detected include acetone (Areas 1-6, 9-10, 14, and 20), benzene (Area 14), chloroform (Areas 9, 10, and 14), methylene chloride (Areas 2, 9, 10, and 14), toluene (Areas 2 and 14), trichloroethene (Areas 2, 10, and 14), EDB (Area 9), and MTBE (Area 9). SVOCs detected include polycyclic aromatic hydrocarbons (PAH; chrysene, fluoranthene, phenanthrene, and pyrene), phthalates (BEHP, di-n-butyl phthalate, and diethyl phthalate), carbazole (grid C5A), and phenol (grid 01A). The PAHs were detected at Areas 1, 2, 5, 9, 12, 20, and 42. The phthalates were detected at Areas 1, 2, 5, 9, 10, 12, and 20, and borings 20 and 26. The pesticides DDT and DDE were widely detected, although none of the concentrations exceeded proposed background levels. The pesticides endrin aldehyde (grab G5A) and heptachlor (grids C5A and 42D) were also detected. No PCBs were detected. Seven herbicides were detected, including dicamba (Areas 1 and 42), 2,4,5-T (Areas 12 and 20), MCPP (Areas 12 and 42), pentachlorophenol (boring 30), picloram (Area 20), and silvex (Area 42). The herbicide MCPA was most widely detected, and concentrations exceeded the proposed

background level at Areas 1, 4, 9, 10, 14, and 42. Among the 25 metallic analytes, only boron and sodium *were not* detected.

The validated sediment results include samples from Areas 8, 26-28, 30, 31, and 34. Detected compounds and concentration ranges for these samples are summarized in Table 3. No explosive compounds were detected in these samples. VOCs detected included acetone (all Areas *except* 28), carbon disulfide (Area 30), MEK (all Areas *except* 28 and 31), methylene chloride (Area 28), and toluene (all Areas *except* 28 and 31). SVOCs detected included 4-methylphenol (Areas 8 and 27), BEHP (Area 8), di-n-butyl phthalate (Area 28), and pyrene (Area 26). The pesticides DDT, DDD, and DDE were widely detected (Areas 8, 27, 28, and 31), as was dieldrin (Areas 26, 28, and 31). No PCBs were detected in sediment. Herbicides detected included MCPA (Areas 8, 26, 31, and 34), 2,4-DB (Area 31), pentachlorophenol (Area 27), and silvex (Area 27). Among the 25 metallic analytes, only antimony, boron, silver, sodium, and thallium *were not* detected.

The validated surface water results include samples from Areas 8, 26-28, 30, 31, and 34. Detected compounds and concentration ranges for these samples are summarized in Table 4. No explosive compounds were detected in these samples. VOCs detected included acetone (all Areas *except* 28 and 31), chloroform (Areas 26 and 30), toluene (Areas 26 and 27), and MTBE (Area 28). SVOCs detected included 4-methylphenol (Area 27) and diethyl phthalate (Area 8). The pesticides DDE (Areas 28 and 34), alpha BHC (Area 28), beta BHC (Area 30), and Endrin (Area 28) were detected, and PCB-1260 was detected in Area 28. Herbicides that detected were detected included silvex (Areas 27 and 28), Dicamba (Area 27), 2,4-DB (Area 27), and MCPA (Area 27). Among the 25 metallic analytes, only antimony, beryllium, boron, selenium, silver, and thallium *were not* detected.

**3. DELIVERABLES SUBMITTED**

Deliverables submitted during the reporting period included the following:

Weekly Progress Update (April 24 - April 30)	May 1, 1998
Weekly Progress Update (May 1 - May 7)	May 8, 1998
Monthly Progress Report for April 1998	May 10, 1998
Weekly Progress Update (May 8 - May 14)	May 15, 1998
Weekly Progress Update (May 15 - May 21)	May 22, 1998
Weekly Progress Update (May 22 - May 28)	May 29, 1998

**4. SCHEDULED ACTIONS**

Actions for the next six weeks are indicated in Figure 1. This figure provides a Gantt chart based on the Final Action Plan, updated to reflect progress and proposed work.

Drilling and sampling soil, surface water, and sediment have been completed in accordance with existing sampling plans. Groundwater sampling remains to be performed at five wells around FS-12 and at residential wells northwest of Snake Pond in accordance with the Response Plan for 90WT0013. Installation and sampling of additional wells will be initiated in accordance with a Response Plan for MW-19. A meeting of the Impact Area Groundwater Study Review Team will be convened on June 2 and July 23, 1998. The draft Completion of Work Report will be submitted to EPA, MADEP, and the stakeholders on June 30, 1998.