

**WEEKLY PROGRESS UPDATE  
FOR NOVEMBER 21- DECEMBER 18, 1997**

**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 November 21 to December 18, 1997.

**1. SUMMARY OF ACTIONS TAKEN**

UXO Surveys

During the weeks of December 8 and December 15, CMS (the UXO Contractor) performed the down-hole clearance at the MW-3 deep and intermediate drilling locations; cleared the remaining soil sampling grids at Areas 1, 4, 5, 12, 13, 15, and Mortar Position 3; cleared the 11 stormwater sampling locations; and excavated two pits at Area 5 (J-1 Range). No live rounds were located at the northwestern pit location shown in Figure A.12-4 of the Draft Area 5 FSP. This 8-foot square pit had steel sides, and a steel bottom 3 feet below grade with a 10-inch square hole in the bottom. A soil sample was collected from soil 0-6 inches beneath this hole.

UXO were removed from the southeastern pit location shown in Figure A.12-4 of the Draft Area 5 FSP. Approximately 500 rounds were removed from the pit and stacked nearby. The rusted condition of the rounds precludes positive identification as HE or inert, although several appear to be HE based on coloration. A fence will be erected around these munitions to limit human access. An inventory of these rounds will be made at a later date. The majority of the rounds were 81mm mortars, with a few 105mm projectiles. One 105mm round was fused, all other rounds were unfused with fuses buried with the rounds. This pit was excavated to 8 feet square by 10 feet deep as specified in the scope of work for CMS. The limits of buried UXO were not reached with this excavation. Determination of these limits will be made during a future mobilization, after modification of the scope of work.

Drilling

An intermediate depth well was being installed at MW-1 as of December 18. This well will be screened at 220-225 feet bgs based on groundwater profiling data for the deep boring at MW-1.

Sampling

Groundwater sampling during the progress reporting period included MW-10M, MW-21S, MW-22S, MW-27S, MW-30S, LRWS 2-3, LRWS 4-1, LRWS 7-1, Bourne 97-3, and USGS BHW215. Soil sampling included the new background location at the Four Ponds Conservation Area in Bourne.

### Water Level Measurements

Water level recording devices were removed from LRWS-2, CS-19 (MW-7E), and CS-10 (AEHA- 11) on November 25, 1997. The 3-month period of continuous water level measurements is now complete.

### Plans and Reports

NGB is preparing letters resolving EPA and MADEP comments on the Draft Gun/Mortar Position FSP and the Draft Surface Water/Sediment FSP. The resolution of comments letters for the Final Background FSP and the Draft Area 5 FSP have been submitted and discussed with EPA. NGB awaits EPA comments on the Draft Storm Water FSP.

### Meetings

NGB convened technical meetings with EPA, MADEP, and USGS on December 11 and December 17. EPA convened a meeting of the IAGS Review Team on December 16. Meeting topics included the status of the Lead Berm project, update on soil and groundwater results, third party consulting to the Review Team for risk assessment, Review Team comment and response procedures, and the next phase of activity for the IAGS. The next meeting was scheduled for January 28 at 6:00 pm (location to be confirmed), with a pre-meeting for citizen members of the Review Team at 5:30 pm to discuss risk assessment consulting.

## **2. SUMMARY OF DATA RECEIVED**

*Preliminary non-validated data* that were received during the reporting period for explosives analyses are summarized in Table 1 for water samples, and in Table 2 for soil samples.

Table 1 indicates several detections of explosives in water samples, as follows:

Nitrobenzene was detected in one of the two groundwater samples collected from MW-10S, and was not detected in the second sample.

RDX was detected above the Health Advisory of 2 ppb in the groundwater sample from MW-23M1.

Table 2 indicates several detections of explosives in soil samples, as follows:

Results from screening with the CRREL method included explosives detections for samples from 1.5-2.0 feet bgs at Area 1 grids E, F, & G and boring MW-8; and for a sample from 0-0.5 feet bgs at boring MW-13.

Results from Method 8330 included explosives detections for samples from 0-0.5 feet bgs at Area 12 grids D & E.

### 3. DELIVERABLES SUBMITTED

Deliverables submitted during the reporting period included the following:

Weekly Progress Update (November 14 - November 21)	November 22, 1997
Final Field Sampling Plan for Areas 12 and 13	November 25, 1997
Monthly Progress Report for November 1997	December 10, 1997

### 4. SCHEDULED ACTIONS

During the next week, well drilling and installation will continue at monitoring wells MW-1M1, MW-2M1, and MW-2M2.

<b>Table 1. Preliminary (non-validated) Results for Explosives in Water Samples</b>				
<b>Sample ID</b>	<b>Location</b>	<b>Screen Depth (feet bgs)</b>	<b>Method</b>	<b>Compound</b>
W10SSA	Well MW-10S groundwater	145-155	8330	none detected
W10SSD	Well MW-10S groundwater Dup	145-155	8330	Nitrobenzene (NS)
W11SSA	Well MW-11S groundwater	122-132	8330	none detected
W11SSD	Well MW-11S groundwater Dup	122-132	8330	none detected
W12SSA	Well MW-12S groundwater	97-107	8330	none detected
W17DDA	Well MW-17D groundwater	320-330	8330	none detected
W17SSA	Well MW-17S groundwater	120-130	8330	none detected
W17SSD	Well MW-17S groundwater Dup	120-130	8330	none detected
W20SSA	Well MW-20S groundwater	92-102	8830	none detected
W23M1A	Well MW-23M1 groundwater	225-235	8330	RDX (>HA)
W23M2A	Well MW-23M2 groundwater	189-194	8330	none detected
W23M3A	Well MW-23M3 groundwater	156-161	8330	none detected
W23M3D	Well MW-23M3 groundwater Dup	156-161	8330	none detected
WL12XA	Well LRWS1-2 groundwater	114-129	8330	none detected
WL12XD	Well LRWS1-2 groundwater Dup	114-129	8330	none detected

Table 1 Acronyms & Abbreviations:

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

PETN = Pentaerythritol tetranitrate

NS = No Standard

HA = EPA Health Advisory for Drinking Water

<b>Table 2. Preliminary (non-validated) Results for Explosives in Soil Samples</b>				
<b>Sample ID</b>	<b>Location</b>	<b>Sample Depth (feet bgs)</b>	<b>Method</b>	<b>Compound</b>
B01ABA	Area 1 grid A	1.5-2.0	CRREL	none detected
B01BBA	Area 1 grid B	1.5-2.0	CRREL	none detected
B01CBA	Area 1 grid C	1.5-2.0	CRREL	none detected
B01DBA	Area 1 grid D	1.5-2.0	CRREL	none detected
B01EBA	Area 1 grid E	1.5-2.0	CRREL	RDX/HMX
B01FBA	Area 1 grid F	1.5-2.0	CRREL	TNT/DNT
B01GBA	Area 1 grid G	1.5-2.0	CRREL	TNT/DNT
B01HBA	Area 1 grid H	1.5-2.0	CRREL	none detected
B02DBA	Area 2 grid D	1.5-2.0	8330	none detected
B02EBA	Area 2 grid E	1.5-2.0	8330	none detected
B02FBA	Area 2 grid F	1.5-2.0	8330	none detected
B02GBA	Area 2 grid G	1.5-2.0	8330	none detected
B02HBA	Area 2 grid H	1.5-2.0	8330	none detected
B02IBA	Area 2 grid I	1.5-2.0	8330	none detected
B02JBA	Area 2 grid J	1.5-2.0	8330	none detected
B02KBA	Area 2 grid K	1.5-2.0	8330	none detected
B02LBA	Area 2 grid L	1.5-2.0	8330	none detected
B02MBA	Area 2 grid M	1.5-2.0	8330	none detected
B02NBA	Area 2 grid N	1.5-2.0	8330	none detected
B02OBA	Area 2 grid O	1.5-2.0	8330	none detected
B03ABA	Area 3 grid A	1.5-2.0	8330	none detected
B03EBA	Area 3 grid E	1.5-2.0	8330	none detected

<b>Table 2. Preliminary (non-validated) Results for Explosives in Soil Samples</b>				
<b>Sample ID</b>	<b>Location</b>	<b>Sample Depth (feet bgs)</b>	<b>Method</b>	<b>Compound</b>
B03FBA	Area 3 grid F	1.5-2.0	8330	none detected
B03GBA	Area 3 grid G	1.5-2.0	8330	none detected
B03JBA	Area 3 grid J	1.5-2.0	8330	none detected
B03KBA	Area 3 grid K	1.5-2.0	8330	none detected
B03LBA	Area 3 grid L	1.5-2.0	8330	none detected
B03MBA	Area 3 grid M	1.5-2.0	8330	none detected
B03NBA	Area 3 grid N	1.5-2.0	8330	none detected
B09EBA	Area 9 grid E	1.5-2.0	CRREL	none detected
B10ABA	Area 10 grid A	1.5-2.0	CRREL	none detected
B10BBA	Area 10 grid B	1.5-2.0	CRREL	none detected
B10CBA	Area 10 grid C	1.5-2.0	CRREL	none detected
B10CBD	Area 10 grid C Duplicate	1.5-2.0	CRREL	none detected
B10DBA	Area 10 grid D	1.5-2.0	CRREL	none detected
B10EBA	Area 10 grid E	1.5-2.0	CRREL	none detected
B12DAA	Area 12 grid D	0.0-0.5	8330	HMX,RDX, 2AmDNT
B12EAA	Area 12 grid E	0.0-0.5	8330	HMX
B14CBA	Area 14 grid C	1.5-2.0	8330	none detected
B14DBA	Area 14 grid D	1.5-2.0	8330	none detected
B14EBA	Area 14 grid E	1.5-2.0	8330	none detected
S01DBA	Boring MW -1	1.5-2.0	CRREL	none detected
S05DBA	Boring MW -5	1.5-2.0	CRREL	none detected
S06DBA	Boring MW -6	1.5-2.0	CRREL	none detected
S07DBA	Boring MW -7	1.5-2.0	CRREL	none detected
S08DBA	Boring MW -8	1.5-2.0	CRREL	TNT/DNT
S09DBA	Boring MW -9	1.5-2.0	CRREL	none detected
S13DAA	Boring MW-13	0.0-0.5	CRREL	TNT/DNT

<b>Table 2. Preliminary (non-validated) Results for Explosives in Soil Samples</b>				
<b>Sample ID</b>	<b>Location</b>	<b>Sample Depth (feet bgs)</b>	<b>Method</b>	<b>Compound</b>
S13DAD	Boring MW-13 Duplicate	0.0-0.5	CRREL	none detected
S14DBA	Boring MW-14	1.5-2.0	CRREL	none detected
S15DBA	Boring MW-15	1.5-2.0	CRREL	none detected
S25DBA	Boring MW-25	1.5-2.0	CRREL	none detected
S27DBA	Boring MW-27	1.5-2.0	CRREL	none detected

Table 2 Acronyms &amp; Abbreviations:

CRREL = Cold Regions Research Engineering Laboratory colorimetric method

HMX = Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX = Hexahydro-1,3,5-trinitro-1,3,5-triazine

TNT = 2,4,6-trinitrotoluene

DNT = 2,4-dinitrotoluene or 2,6-dinitrotoluene

2AmDNT = 2-Amino-4,6-dinitrotoluene