

**WEEKLY PROGRESS UPDATE
FOR APRIL 16 – APRIL 20, 2001**

**EPA REGION I ADMINISTRATIVE ORDERS SDWA 1-97-1019 & 1-2000-0014
MASSACHUSETTS MILITARY RESERVATION
TRAINING RANGE AND IMPACT AREA**

The following summary of progress is for the period from April 16 to April 20, 2001.

1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of April 20 is summarized in Table 1.

Table 1. Drilling progress as of April 20, 2001				
Boring Number	Purpose of Boring/Well	Total Depth (ft bgs)	Saturated Depth (ft bwt)	Completed Well Screens (ft bgs)
MW-164	J-1 Range well (J1P-5)	307	194	117-127 157-167 227-237
MW-165	Demo 1 well (D1P-4)	250	170	95-105 125-135 185-195
MW-166	J-1 Range well (J1P-7)	180	70	
Bgs = below ground surface Bwt = below water table				

Completed installation of MW-164 (J1P-5) and MW-165 (D1P-4). Commenced drilling MW-166 (J1P-7). Continued development of newly installed wells. Continued UXO avoidance of the Phase IIb soil grids.

Samples collected during the reporting period are summarized in Table 2. Groundwater profile samples were collected for MW-166. Water samples were collected from the RRA containment pad and the GAC system. Soil samples were collected at the Former B, C and D Range, GA/GB Range, the Grenade Courts, and the Cleared Areas. As part of the HUTA investigation, soil samples were collected in Test Pit 4 area.

The Guard, EPA, and MADEP had a meeting on April 19 to discuss technical issues, including the following:

Demo 1 Area

John Rice (AMEC) led the discussion on screen selection for MW-165 (D1P-4). A one page summary of profile data results was distributed.

- Well screens at 25-35 bwt (above explosive detections), 50-60 bwt (highest RDX detections), and 105-115 bwt (below explosive detections) were proposed. Todd Borci (EPA) requested well screens at 15-25 bwt; 45-55 bwt, and 105-115 bwt for the same reasons. Mr. Borci's screen selections were accepted by the Tech team.
- Marc Grant (AMEC) indicated that allowing for well development and sampling time and a rush analysis (2 week tat), Perchlorate results for MW-165 would be available in approximately 4-5 weeks.
- Discussion ensued on the location of additional wells to define the downgradient extent of

the explosives plume at Demo 1. Mark Applebee (AMEC) pointed out that the plume was slightly off (south) of the model-predicted track. It was generally agreed that 2 wells at a minimum were needed. Mr. Borci proposed placing one well south of MW-165 along Frank Perkins Road (southern plume boundary) and one well west and directly downgradient of MW-165 on Pew Road. The Guard agreed to consider these locations. Mr. Borci further requested that the Guard try to install these wells on a fast-track in order to meet the current schedule of deliverables for Demo 1.

ASR Update

Carla Buriks (Tetra Tech) led the discussion on the ASR update. A one page handout was distributed.

General Management/Communication

- Provided revised, draft-final communications plan on 4/5.
- Developed a list of documents that have been submitted to the ASR team for review and comment. As no additional comments have been received, recommend finalization of these documents. LTC Knott (NGB) suggested that Ms Buriks send an email requesting confirmation of no further comments to principals on the ASR team.

U.S. Army Corps of Engineers - Rock Island

- Currently tabulating Ammunition Supply Point (ASP) records that were retrieved from MMR. Compiling information on (1) individual ammunition types, the dates of ammunition issue, units ammunition was issued to, and how much of this ammunition was used/fired at Camp Edwards (2) completed tables for pyrotechnics, demolition materials, chemical materials, mines, and mortars and (3) remaining tables include artillery, grenades, anti-tank rounds, and small arms ammunition. Chris Churney (ACE) indicated that the small arms ammunition tables would take at least a couple more months. LTC Knott suggested that the NE Corps could be contacted for help with this effort if needed.
- Continuing data compilation and review for revised ASR

Follow-on Interviews

- Completed a revised table summarizing information collected during interviews of Witness #17 through Witness #24; this table was distributed to the IART.
- Revised the draft interview report presenting interview findings through January 2001 to incorporate EPA comments made during the ASR update call on 3/8.
- Provided modified interview summary for Witness #17 to NGB; dates of employment/ names of past employers were removed. Requested by citizens at IART meeting.
- At NGB's request, the follow-on interviews task will be closed

Military History Research

- Preparing a draft report outlining military research findings through January 2001. This draft report will be provided to NGB for review and comment by 4/20.

Contracts Research

- Conducted file reviews for three consecutive weeks at Picatinny Arsenal; developing a memorandum summarizing findings to be provided to the Guard on 4/20. The information reviewed did not provide many specifics, but people and test report documents are identified in the contracts. The locations where the tests were completed are not routinely identified.
- NGB received a response from DTRA (formerly, the Defense Nuclear Agency) stating that no records were identified in response to the information request sent to this entity.
- Supported NGB in providing information for an information request letter for Textron; this request is being coordinated through NGB legal and AFCEE legal. Jane Dolan (EPA) indicated that she has planned a file review at Textron offices also.
- Prepared a memorandum regarding the documents obtained from LTC Crivello.
- Originally a contracts lawyer was proposed to be used to review contracts, however, this is no longer viewed as necessary. Todd Borci (EPA) indicated that if any classified documents

were anticipated the EPA could have an authorized individual review classified files.

GIS Integration

- Tt presented an update on the ASR Data Archive at the March IART. Survey forms were distributed to IART attendees requesting input on the GIS Data Archive. Two responses were received.
- Researched how to best obtain aerial photographs that were requested by EPA. A memorandum summarizing this research was provided to NGB on 4/18. Of photos that Mr. Borci requested, 1958 photo was obtained from the National Archives and a 1977 photo was obtained from Co East.
- Provided draft firing fan maps compiled for the ASR GIS Data archive to EPA representatives. These were provided as a www link to the data archive currently under development.

Schedule

- USACE work remains on schedule.
- Tt requests modification of military history research portion of the schedule to provide draft report to ASR team by 5/4; other Tt tasks generally progressing according to schedule.

CS-18 and CS-19 Updates

George Petersen (Jacobs) provided an update on CS-18 and CS-19. One page handout was distributed.

- Mr. Petersen has accepted another position; Ken Gaynor will be assuming his responsibilities at Jacobs.
- In the CS-18 area, groundwater profiling was completed at 16MW0005, AFCEE is awaiting the explosive results to determine screen intervals. Groundwater profiling was ongoing at the 16MW0006 location. Todd Borci (EPA) requested to be involved with selecting the screen intervals.
- Re-development of four existing on-site monitoring wells was completed.
- Ongoing schedule for CS-18 includes completing well installation, subsurface soil characterization and development of newly installed wells. Redeveloped wells will be sampled at the same time as the new wells. Mr. Borci requested the data from the deep soil borings. Mr. Petersen to email.
- Well 90RIW0010, directly east of SP-2, is being converted into an extraction well.
- A pipeline is being installed from the area of 90RIW009 to 90EW003. Therefore, there is limited access to this area.
- Preparation activities continue for implementing the CS-19 Supplemental RI field work. Approved RECs require that restoration of sites be made with soil from inside the Impact Area and seed from the Bourne-side of the canal. This will be achieved by using grass cuttings from the base.
- Puddle sampling was completed on 4/9/01. This sampling was scheduled to be completed earlier, except that there was no puddle until 4/9.
- Recalibration of the groundwater model and modeling of particle tracks for new well locations is completed.

Water Supply Study Update

There was no new information on the water supply study.

- Mark Panni (MADEP) indicated that he had requested, but not received the analytical results from soil samples collected along the pipeline from Hap Gonser (JPO). LTC Bleakley (JPO) to check on.
- LTC Bleakley indicated that the plume map showing both IRP and IAGWSP MMR plumes would be completed 5/13. Todd Borci (EPA) requested that his written comments regarding the plume map be addressed.

Munitions Survey Update

Larry Hudgins (Tetra Tech) presented the update concerning the HUTA. Doug Lam (Tetra Tech) presented an overview of the technical approach for ground-truthing anomalies from the AIRMAG survey. Two, one-page handouts were distributed. A list of all items found in the HUTA was made available for interested parties.

- HUTA Test Pit #3 surface soil chemistry sampling is complete. Excavated most of the Lift 1A anomalies by hand.
- HUTA Test Pit #4 excavation of Lift 2 is complete. The geophysics of Lift 3 is complete. A 155mm was removed, but Lift 3 will not be removed. Subsurface soil sampling is complete on Lift 3 (6-9 ft depth). Awaiting analytical results to backfill Test Pit #4
- HUTA Test Pit #5 surface soil chemistry sampling is complete.
- HUTA Test Pit #6, the excavation of Lift 1C is complete. Geophysics of Lift 1C is complete, hand excavation of anomalies is ongoing. And should be completed 4/23.
- Todd Borci (EPA) indicated that the HUTA draft report was due on 5/18 and that the deadline was enforceable. Mr. Borci also requested cross-sections of the completed pits and a "ball-park" of what was being seen in Pits 5 and 6. Jane Dolan (EPA) requested that a summary of the HUTA chemistry data be presented at the next Tech meeting.
- For the ground geophysical survey, the initial statistics were provided to the ACE. A presentation of J-1 and J-3 Range results was scheduled to be presented 6/15.
- The data from the Depleted Uranium Study was received from the laboratory and is being validated. A Tech memo was being prepared for the ACE's review by late May. Mr. Borci indicated that he wanted to review the data before the Tech memo was submitted.

Technical Approach for Selection of AIRMAG Targets for Groundbased Verification

- Total of 6,800 targets under review. Another order of magnitude of unscreened anomalies.
- Anomalies will be selected based upon those that may represent caches of UXO.
- Anomalies will be initially selected based upon Tetra Tech's geophysical subcontractor anomaly lists. These lists are prioritized with respect to calculated size and mass of detected objects.
- Tetra Tech geophysicists will review the first level list and determine which cultural anomalies (fence lines, vehicles, rails, etc), or known surface features that may cause an anomaly should be moved to a lower priority list. Targets that appear to be unrepresentative signals (unusual dipoles) will also be moved to lower priority. These targets may be eventually categorized, but Tt will assign them to a list as a low priority or no-ground-truthing-required category.
- Anomalies will then be ranked based upon proximity to roadways, access points, ranges, edges of ranges and so on. The distance investigated for the first priority list will be anomalies that are within 10 meters of access points. This ranking will be based upon the likelihood of potential convenient locations for disposal of munitions.
- All targets will be placed into a ranked spreadsheet (early May - 2 weeks from today). Maps will be prepared noting the location of a sufficient list of anomalies for ground truthing for two 2-person crews over a 5-day work period. Not all the targets identified in the ranking will be able to be verified during the 5-day test. Field work to start shortly after ranking prepared.
- Two 2-person crews (one UXO technician, one technical person) will perform the ground truthing during a period of 5 field days. Selected target coordinates data will be uploaded into the GPS datalogger units. The crew will use the GPS unit to locate the targets in the field, using drop down menus to verify coordinate location, site conditions, and report observations at the location that may be the cause of the anomaly. In addition, geological conditions, groundcover density, vegetation type and other site information will be recorded into the GPS datalogger. Features will be recorded in a standard field logbook, and all sites,

regardless of site condition, will be documented using a digital camera.

- In addition to entry in logbooks, ground truth information will be annotated on airborne geophysical anomaly maps. This information will be transferred to electronic maps for archive purposes.
- Tetra Tech will provide a non-DID compliant letter report summarizing the Field Verification Process and data results. Tetra Tech will provide a map(s) with annotations noting which targets were the subject of this investigation, with a short description of any surface level cultural items. The National Guard Bureau and New England District Corps of Engineers will evaluate the findings of the ground truth investigation.
- Todd Borci (EPA) commented that he felt that verification crews should continue after 1st 5 day effort, although the 5-day effort is sufficient for the Phase I Munitions Survey. He further commented that crews should include geophysicists as well as EOD personnel. CPT Myer (IAGWSO) indicated that the 5-day test truthing was being conducted so that the Guard could reassess before proceeding further, depending on what anomalies were found.

Rapid Response Action Update

Scott Veenstra (AMEC) presented an update of the RRA. A one-page summary with accompanying drawings and summary data of delineation sampling completed at the Former H Range and Mortar Target 9 was distributed.

- Relocation of retained soil stockpiles and carbon change out was completed 4/13. Water management continues at the containment pad.
- The Guard had received DEP approval of the RAM Plan modification 4/9.
- The complete data set was received for the Former H Range and Mortar Target 9 delineation sampling.
- Former H Range data show:
 - Lead detected in 9 of 18 grids above RRA soil cleanup goal of 300 ppm.
 - Lead detections require removal of 5 grids to 1 ft and 4 grids to 2 ft.
 - Lead detections require sampling of up to 13 additional delineation grids.
 - Bullets were discovered in grids 79I, ID, H, and HH.
 - Dieldrin not detected in excess of RRA soil cleanup goal of 246 ppb.
 - Dieldrin was detected in 9 of 18 grids above MCP RCS-1 of 30 ppb.
- Todd Borci (EPA) indicated that soil with detections of Dieldrin above the MCP RCS-1 did not need to be excavated.
- Approximately 400 cubic yards estimated volume of soil for removal Former H Range based on current data of lead exceedances.
- Former Mortar Target 9 data show:
 - TNT above RRA soil cleanup goal for 35 ft ring grid at 0-1.5 ft.
 - RDX above RRA soil cleanup goal at node 3 discrete sample at 0-0.5 ft.
 - TNT above RRA soil cleanup goal at node 7 discrete sample at 1-2 ft.
- Mr. Veenstra recommended that an alternate grid configuration be proposed for additional delineation around Target 9, since exceedances appeared to be distributed unevenly about the target. Mr. Borci requested a copy of the full data summary for Mortar Target 9 and adjacent Mortar Target 10. And further indicated that a discussion of additional delineation sampling could be conducted after review of the Delineation Report due to be submitted on or about 4/19.
- Discussion ensued on additional delineation sampling at Former H Range. LTC Knott (NGB) indicated that the first issue is that because the area is part of a Formerly Used Defense Site (FUDS site), the additional delineation could not be conducted under the Guard's contract. Mr. Borci indicated that nonetheless, under AO3, the Guard was under order to complete the RRA. Heather Sullivan (ACE) indicated that the Army Corps had current contracts in place that could be used to mobilize a consultant to perform the

additional delineation sampling. The second issue was that the agreement with Camp GoodNews precluded any work after 6/1. Therefore, the RRA cleanup for the area would not be completed by this deadline due to the requirement for additional delineation sampling. Mr. Borci indicated that at a minimum the delineation should be completed by June 1st. Ms. Sullivan indicated that this was the ACE's intent and an extension request had been sent to EPA.

- Grain size analysis for the soil washing process confirmation/optimization summary will be submitted to the agencies on or about 4/27. Completion of Work Report for RRA Group 1 efforts will be submitted to the agencies on or about 5/01.

Groundwater Study

John Rice (AMEC) presented an update of the groundwater study. A one page summary was distributed.

- Installation of monitor well MW-162 (D1P-3) was completed last week. Installation of MW-164 (J1P-5) and MW-165 (D1P-4) will be completed this week. Commenced drilling of MW-166 (J1P-7) this week and will commence drilling of MW-167 (BA-1) next week.
- Groundwater sampling of the newly installed wells is ongoing.
- UXO avoidance was continued at Former D Range, the Grenade Courts, Cleared Areas, SAR and GA/GB over the last 2 weeks. Next week UXO avoidance will be continued at Phasellb locations.
- Soil sampling of SAR, Grenade Courts, former E Range, the Cleared Areas, GA/GB and supplemental BIP at the J-1 Range was conducted over the last 2 weeks. Next week soil sampling will continue at the SAR and the Cleared Areas.
- Last week, vegetation removal at D1P-4 drill pad was 2,800 square feet. This week vegetation removal was 4,450 ft at the J1P-7 drill pad and 110 ft of access road. No vegetation removal is scheduled for next week.
- The following data tables were distributed: 1) New Detects - Unvalidated. 2) Stage II Supplemental Grid. The new detect data showed volatile and explosive detections (PDA confirmed) in water samples collected at the water table from borings drilled around the septic tank located at the J-3 Range melt pour facility. There was also an RDX detection in MW-153M1 that was similar to the profile results seen at this location. There were no detections in the supplemental BIP grid sampling.
- During the punchlist discussion, Heather Sullivan (ACE) indicated that the property owner had denied access to drilling location SP-2 on the spit in Snake Pond. Lance Ambrose (County Commissioner) has offered to speak with the property owner and will get back with Mike Minior (AFCEE) regarding access to property.
- Ben Gregson (IAGWSPO) presented an alternate location for SP-2, in the event that the permission can not be obtained for the spit location. The alternate location is in the middle of the culdesac at the end of Arnold Road. Mr. Gregson indicated that this location affords ready access, meets the needs of the AFCEE program of being a clean point beyond the capture of the FS-12 extraction system, is directly downgradient of 90MW0054 which has perchlorate/RDX detections, and allows for the use of a conventional drill rig which has a better rate of success than the geoprobe rig. This is the closest location to the shore of Snake Pond in this area because of a steep grade further east. Mark Panni (MADEP) inquired as to what was lost with the new location. Mr. Gregson indicated that the original location is directly downgradient of 90MW0101A and is right on the edge of the FS-12 Extraction system capture zone. However, the alternate location provides data further to the west. Jane Dolan (EPA) pointed out that the spit location was directly downgradient of the particle tracks in this area. Len Pinaud (MADEP) indicated that he would ask MADEP's hydrogeologist to look at the alternate location.
- Ben Gregson (IAGWSPO) distributed copies of the data from waste characterization

samples collected and analyzed by Clean Harbors from buckets excavated at the J1P-6 drill pad at J-1 Range. A volatile compound was detected in one bucket sample that was thought to be a paint-related. Low levels of barium and cadmium were detected in some soil samples. The buckets have been placed in drums. Analytical results from soil samples collected by AMEC in the excavation are expected in approximately one week. Mr. Gregson proposed that if no positive results were seen in soil samples, the trench be backfilled with the excavated soil and that the proposed well (J1P-6) be installed in this location.

- During the punchlist discussion, Jane Dolan (EPA) inquired about sampling dates for perchlorate in wells within the FS-12 area; a schedule was not included in the Guard's response to EPA's March 22 email. Ms. Dolan further requested that 90EW0002 should be samples regardless of results for the piezometers unless another suitable well is located nearby.

Document /Schedule Status Update

Marc Grant (AMEC) provided the update on document and schedule status, distributing a one page table, the 3-month Lookahead Schedule, and a table outlining the scheduling issues.

Highlights of the document/schedule status were reviewed as follows:

- TM 01-5 Demo 1 GW FS Screening Report. The Guard was seeking approval of the MOR. Len Pinaud (MADEP) indicated that state comments will be provided on this document and the TM 01-6 Central Impact Area GW Report.
- J-2 Additional Delineation Work Plan. An MOR was expected shortly on this document based on the 4/4 site visit.
- Gun and Mortar Targets, Establish COCs. Todd Borci (EPA) indicated that he did not agree with the extension request for this document.
- Demo 1 Soil Report. This document was due today, but Mr. Borci agreed to relieve this deadline although not to the requested date of 6/8. A formal letter addressing this request will be sent.
- The tan highlighted submittal dates in the Document Status table indicate documents where a request for extension of an enforceable deadline will be submitted. LTC Knott (NGB) was planning on sending a letter next week requesting extensions for these documents.
- New yellow highlighted submittal dates indicate enforceable milestones that have been delayed and for which a request for extension has been submitted.
- J13L Range Additional Delineation Report. Discussion ensued on whether the submittal date for this document (5/31) should be extended, given that only ½ of the J-3 Range data had been collected and analyzed. Dave Hill (IAGWSPO) expressed concern that similar to the J-2 Range investigation, additional delineation would be premature given that all the data was not available. Jane Dolan (EPA) suggested that additional delineation be concentrated on areas of contamination identified by available data, this would include the L Range and J-3 Range melt pour area, detonation pit, and warhead test area, according to the current schedule of 5/31. Work plans for further sampling could likely occur after submittal of the draft report.

Resolution meeting for TM 01-6, Central Impact Area Groundwater Report and presentation of preliminary J-2 Range geophysical data followed the Tech meeting.

Inspection of the ASP and a site visit to GA/GB followed the resolution meeting for TM 01-6.

2. SUMMARY OF DATA RECEIVED

Rush data are summarized in Table 3. These data are for analyses that are performed on a fast turnaround time, typically 1-5 days. Explosive analyses for monitoring wells, and explosive and VOC analyses for groundwater profile samples, are conducted in this timeframe. The rush data are not validated, but are provided as an indication of the most recent preliminary results. Table 3 summarizes only detects, and does not show samples with non-detects.

The status of the detections with respect to confirmation using Photo Diode Array (PDA) spectra is indicated in Table 3. PDA is a procedure that has been implemented for the explosive analysis, to reduce the likelihood of false positive identifications. Where the PDA status is "YES" in Table 3, the detected compound is verified as properly identified. Where the status is "NO", the identification of an explosive has been determined to be a false positive. Where the status is blank, PDA has not yet been used to evaluate the detection, or PDA is not applicable because the analyte is a VOC. Most explosive detections verified by PDA are confirmed to be present upon completion of validation. Table 3 includes the following detections:

- The groundwater profile samples from MW-165 had detections of 4-nitrotoluene (1 interval), nitroglycerin (3 intervals), 3-nitrotoluene (1 interval), HMX (3 intervals), and RDX (13 intervals). The HMX and RDX detections were verified by PDA spectra.
- The groundwater profile samples from MW-166 had detections of acetone (6 intervals), MEK (1 interval), nitroglycerin (2 intervals), HMX (1 interval) and RDX (2 intervals). The RDX and HMX detections were verified by PDA spectra.
- A stage III, supplemental BIP grid sample from the P-19 drill pad (near MW-105) had detections of TNT, RDX, and HMX that were verified by PDA spectra.
- A soil sample collected from 6-12 inches at grid AH at the former K Range (130AH) had detections of RDX and HMX that were verified by PDA spectra.

3. DELIVERABLES SUBMITTED

Final Tank Alley and Turpentine Road Targets Investigation Report (TM 01-3)	04/17/01
Final Demo 1 Area Groundwater Report (TM 01-2)	04/18/01

4. SCHEDULED ACTIONS

Scheduled actions for the week of April 23 include well installation of MW-166 (J1P-7) and complete drilling of BA-1; continue development and sampling of newly installed wells; commence Long Term Groundwater Monitoring 2001 and third round sampling of J Range wells, and continue sampling of Phase IIb soil grids.

5. SUMMARY OF ACTIVITIES FOR DEMO 1

The Final Demo 1 Groundwater Report (Tech Memo 01-2) was submitted on April 18, 2001. Responses to comments on the Soil COC Report were submitted April 20, 2001. The Draft Soil Report is being prepared. Installation of two additional downgradient wells (MW-162 and MW-165) at Demo 1 is completed. An additional downgradient well location, D1P-5, has been proposed; other locations are under consideration. Analysis of second round groundwater samples from newly installed wells is ongoing.

TABLE 2
 SAMPLING PROGRESS
 4/14/2001-4/20/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
4.F.0.00002.3.D	Test Plot 4 Lift 3 Grid	04/17/2001	FIELDQC	6.00	9.00		
4.F.0.00012.3.D	Test Plot 4 Lift 3 Grid	04/17/2001	FIELDQC	6.00	9.00		
G166DAE	FIELDQC	04/19/2001	FIELDQC	0.00	0.00		
G166DCE	FIELDQC	04/20/2001	FIELDQC	0.00	0.00		
HC139C1CAE	FIELDQC	04/17/2001	FIELDQC	0.00	0.00		
HC139C1CAT	FIELDQC	04/17/2001	FIELDQC	0.00	0.00		
HC139C1CAT	FIELDQC	04/18/2001	FIELDQC	0.00	0.00		
HD140A1AAE	FIELDQC	04/18/2001	FIELDQC	0.00	0.00		
HD142A1AAE	FIELDQC	04/19/2001	FIELDQC	0.00	0.00		
HD142A1AAT	FIELDQC	04/19/2001	FIELDQC	0.00	0.00		
HD143D1AAE	FIELDQC	04/20/2001	FIELDQC	0.00	0.00		
HD143D1AAT	FIELDQC	04/20/2001	FIELDQC	0.00	0.00		
DW041901	GAC WATER	04/19/2001	IDW	0.00	0.25		
PWPPC17AP1A	RRA CONTAINMENT	04/17/2001	IDW				
PWPPC18AP1A	RRA CONTAINMENT	04/18/2001	IDW				
G166DAA	MW-166	04/19/2001	PROFILE	120.00	120.00	10.00	10.00
G166DBA	MW-166	04/19/2001	PROFILE	130.00	130.00	20.00	20.00
G166DCA	MW-166	04/20/2001	PROFILE	140.00	140.00	30.00	30.00
G166DCD	MW-166	04/20/2001	PROFILE	140.00	140.00	30.00	30.00
G166DDA	MW-166	04/20/2001	PROFILE	150.00	150.00	40.00	40.00
G166DEA	MW-166	04/20/2001	PROFILE	160.00	160.00	50.00	50.00
G166DFA	MW-166	04/20/2001	PROFILE	170.00	170.00	60.00	60.00
G166DFD	MW-166	04/20/2001	PROFILE	170.00	170.00	60.00	60.00
4.F.0.00001.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00002.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00003.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00004.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00005.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00006.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00007.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00008.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00009.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00010.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00011.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
4.F.0.00012.3.0	Test Plot 4 Lift 3 Grid	04/17/2001	SOIL GRID	6.00	9.00		
HC135I1AAA	135I	04/18/2001	SOIL GRID	0.00	0.25		
HC135I1BAA	135I	04/18/2001	SOIL GRID	0.25	0.50		
HC135I1CAA	135I	04/18/2001	SOIL GRID	0.50	1.00		
HC135I1CAD	135I	04/18/2001	SOIL GRID	0.50	1.00		
HC135J1AAA	135J	04/18/2001	SOIL GRID	0.00	0.25		
HC135J1BAA	135J	04/18/2001	SOIL GRID	0.25	0.50		
HC135J1CAA	135J	04/18/2001	SOIL GRID	0.50	1.00		
HC135K1AAA	135K	04/18/2001	SOIL GRID	0.00	0.25		

Profiling methods include: Volatiles and Explosives

Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry

Other Sample Types methods are variable

SBD = Sample Begin Depth, measured in feet bgs

SED = Sample End Depth, measured in feet bgs

BWTS = Depth below water table, start depth, measured in feet

BWTE = Depth below water table, end depth, measured in feet

TABLE 2
 SAMPLING PROGRESS
 4/14/2001-4/20/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HC135K1BAA	135K	04/18/2001	SOIL GRID	0.25	0.50		
HC135K1CAA	135K	04/18/2001	SOIL GRID	0.50	1.00		
HC135L1AAA	135L	04/18/2001	SOIL GRID	0.00	0.25		
HC135L1BAA	135L	04/18/2001	SOIL GRID	0.25	0.50		
HC135L1CAA	135L	04/18/2001	SOIL GRID	0.50	1.00		
HC135M1AAA	135M	04/18/2001	SOIL GRID	0.00	0.25		
HC135M1AAD	135M	04/18/2001	SOIL GRID	0.00	0.25		
HC135M1BAA	135M	04/18/2001	SOIL GRID	0.25	0.50		
HC135M1CAA	135M	04/18/2001	SOIL GRID	0.50	1.00		
HC136O1AAA	136O	04/19/2001	SOIL GRID	0.00	0.50		
HC136O1BAA	136O	04/19/2001	SOIL GRID	1.50	2.00		
HC136P1AAA	136P	04/19/2001	SOIL GRID	0.00	0.50		
HC136P1BAA	136P	04/19/2001	SOIL GRID	1.50	2.00		
HC136Q1AAA	136Q	04/19/2001	SOIL GRID	0.00	0.50		
HC136Q1BAA	136Q	04/19/2001	SOIL GRID	1.50	2.00		
HC136R1AAA	136R	04/19/2001	SOIL GRID	0.00	0.50		
HC136R1BAA	136R	04/19/2001	SOIL GRID	1.50	2.00		
HC136R1BAD	136R	04/19/2001	SOIL GRID	1.50	2.00		
HC139C1AAA	139C	04/17/2001	SOIL GRID	0.00	0.25		
HC139C1BAA	139C	04/17/2001	SOIL GRID	0.25	0.50		
HC139C1CAA	139C	04/17/2001	SOIL GRID	0.50	1.00		
HC139C1CAD	139C	04/17/2001	SOIL GRID	0.50	1.00		
HC142A1AAA	142A	04/19/2001	SOIL GRID	0.00	0.25		
HC142A1BAA	142A	04/19/2001	SOIL GRID	0.25	0.50		
HC142A1CAA	142A	04/19/2001	SOIL GRID	0.50	1.00		
HD139C1AAA	139C	04/17/2001	SOIL GRID	0.00	0.25		
HD139C1BAA	139C	04/17/2001	SOIL GRID	0.25	0.50		
HD139C1CAA	139C	04/17/2001	SOIL GRID	0.50	1.00		
HD140A1AAA	140A	04/18/2001	SOIL GRID	0.00	0.50		
HD140A1BAA	140A	04/18/2001	SOIL GRID	1.50	2.00		
HD140B1AAA	140B	04/18/2001	SOIL GRID	0.00	0.50		
HD140B1BAA	140B	04/18/2001	SOIL GRID	1.50	2.00		
HD140C1AAA	140C	04/18/2001	SOIL GRID	0.00	0.50		
HD140C1BAA	140C	04/18/2001	SOIL GRID	1.50	2.00		
HD140C1BAD	140C	04/18/2001	SOIL GRID	1.50	2.00		
HD140D1AAA	140D	04/18/2001	SOIL GRID	0.00	0.50		
HD140D1BAA	140D	04/18/2001	SOIL GRID	1.50	2.00		
HD140E1AAA	140E	04/18/2001	SOIL GRID	0.00	0.50		
HD140E1BAA	140E	04/18/2001	SOIL GRID	1.50	2.00		
HD140F1AAA	140F	04/18/2001	SOIL GRID	0.00	0.50		
HD140F1BAA	140F	04/18/2001	SOIL GRID	1.50	2.00		
HD140F1BAD	140F	04/18/2001	SOIL GRID	1.50	2.00		
HD140G1AAA	140G	04/18/2001	SOIL GRID	0.00	0.50		
HD140G1BAA	140G	04/18/2001	SOIL GRID	1.50	2.00		

Profiling methods include: Volatiles and Explosives

Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry

Other Sample Types methods are variable

SBD = Sample Begin Depth, measured in feet bgs

SED = Sample End Depth, measured in feet bgs

BWTS = Depth below water table, start depth, measured in feet

BWTE = Depth below water table, end depth, measured in feet

TABLE 2
 SAMPLING PROGRESS
 4/14/2001-4/20/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HD140H1AAA	140H	04/18/2001	SOIL GRID	0.00	0.50		
HD140H1BAA	140H	04/18/2001	SOIL GRID	1.50	2.00		
HD140I1AAA	140I	04/18/2001	SOIL GRID	0.00	0.50		
HD140I1BAA	140I	04/18/2001	SOIL GRID	1.50	2.00		
HD140J1AAA	140J	04/18/2001	SOIL GRID	0.00	0.50		
HD140J1BAA	140J	04/18/2001	SOIL GRID	1.50	2.00		
HD142A1AAA	142A	04/19/2001	SOIL GRID	0.00	0.25		
HD142A1BAA	142A	04/19/2001	SOIL GRID	0.25	0.50		
HD142A1CAA	142A	04/19/2001	SOIL GRID	0.50	1.00		
HD143A1AAA	143A	04/20/2001	SOIL GRID	0.00	0.50		
HD143A1BAA	143A	04/20/2001	SOIL GRID	1.50	2.00		
HD143B1AAA	143B	04/20/2001	SOIL GRID	0.00	0.50		
HD143B1BAA	143B	04/20/2001	SOIL GRID	1.50	2.00		
HD143B1BAD	143B	04/20/2001	SOIL GRID	1.50	2.00		
HD143C1AAA	143C	04/20/2001	SOIL GRID	0.00	0.50		
HD143C1BAA	143C	04/20/2001	SOIL GRID	1.50	2.00		
HD143D1AAA	143D	04/20/2001	SOIL GRID	0.00	0.50		
HD143D1BAA	143D	04/20/2001	SOIL GRID	1.50	2.00		
HD143E1AAA	143E	04/20/2001	SOIL GRID	0.00	0.50		
HD143E1BAA	143E	04/20/2001	SOIL GRID	1.50	2.00		
HD143G1AAA	143G	04/20/2001	SOIL GRID	0.00	0.50		
HD143G1BAA	143G	04/20/2001	SOIL GRID	1.50	2.00		
HD143H1AAA	143H	04/20/2001	SOIL GRID	0.00	0.50		
HD143H1BAA	143H	04/20/2001	SOIL GRID	1.50	2.00		
HD143H1BAD	143H	04/20/2001	SOIL GRID	1.50	2.00		
HD143I1AAA	143I	04/20/2001	SOIL GRID	0.00	0.50		
HD143I1BAA	143I	04/20/2001	SOIL GRID	1.50	2.00		
HD143J1AAA	143J	04/20/2001	SOIL GRID	0.00	0.50		
HD143J1BAA	143J	04/20/2001	SOIL GRID	1.50	2.00		
HD143K1AAA	143K	04/20/2001	SOIL GRID	0.00	0.50		
HD143K1BAA	143K	04/20/2001	SOIL GRID	1.50	2.00		
HD61FA1AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA2AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA3AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA4AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA5AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA5AAD	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA6AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA7AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA8AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		
HD61FA9AAA	61FA	04/17/2001	SOIL GRID	0.00	0.25		

Profiling methods include: Volatiles and Explosives

Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry

Other Sample Types methods are variable

SBD = Sample Begin Depth, measured in feet bgs

SED = Sample End Depth, measured in feet bgs

BWTS = Depth below water table, start depth, measured in feet

BWTE = Depth below water table, end depth, measured in feet

TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 3/30/01-4/20/01

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
HDP19105MM5SS13	P19105MM5SS13	04/04/2001	CRATER GRID	0.00	0.25			8330N	2,4,6-TRINITROTOLUENE	YES
HDP19105MM5SS13	P19105MM5SS13	04/04/2001	CRATER GRID	0.00	0.25			8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
HDP19105MM5SS13	P19105MM5SS13	04/04/2001	CRATER GRID	0.00	0.25			8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES
G165DAA	MW-165	04/12/2001	PROFILE	90.00	90.00	10.50	10.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DAA	MW-165	04/12/2001	PROFILE	90.00	90.00	10.50	10.50	8330N	NITROGLYCERIN	NO
G165DBA	MW-165	04/12/2001	PROFILE	100.00	100.00	20.50	20.50	8330N	3-NITROTOLUENE	NO
G165DBA	MW-165	04/12/2001	PROFILE	100.00	100.00	20.50	20.50	8330N	4-NITROTOLUENE	NO
G165DBA	MW-165	04/12/2001	PROFILE	100.00	100.00	20.50	20.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DBA	MW-165	04/12/2001	PROFILE	100.00	100.00	20.50	20.50	8330N	NITROGLYCERIN	NO
G165DCA	MW-165	04/12/2001	PROFILE	110.00	110.00	30.50	30.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DCA	MW-165	04/12/2001	PROFILE	110.00	110.00	30.50	30.50	8330N	NITROGLYCERIN	NO
G165DCD	MW-165	04/12/2001	PROFILE	110.00	110.00	30.50	30.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DCD	MW-165	04/12/2001	PROFILE	110.00	110.00	30.50	30.50	8330N	NITROGLYCERIN	NO
G165DDA	MW-165	04/12/2001	PROFILE	120.00	120.00	40.50	40.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DEA	MW-165	04/12/2001	PROFILE	130.00	130.00	50.50	50.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DEA	MW-165	04/12/2001	PROFILE	130.00	130.00	50.50	50.50	8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES
G165DFA	MW-165	04/12/2001	PROFILE	140.00	140.00	60.50	60.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DFA	MW-165	04/12/2001	PROFILE	140.00	140.00	60.50	60.50	8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES
G165DFD	MW-165	04/12/2001	PROFILE	140.00	140.00	60.50	60.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DFD	MW-165	04/12/2001	PROFILE	140.00	140.00	60.50	60.50	8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES
G165DGA	MW-165	04/12/2001	PROFILE	150.00	150.00	70.50	70.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DGA	MW-165	04/12/2001	PROFILE	150.00	150.00	70.50	70.50	8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES
G165DHA	MW-165	04/13/2001	PROFILE	160.00	160.00	80.50	80.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DIA	MW-165	04/13/2001	PROFILE	170.00	170.00	90.50	90.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DKA	MW-165	04/13/2001	PROFILE	190.00	190.00	110.50	110.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DLA	MW-165	04/13/2001	PROFILE	200.00	200.00	120.50	120.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DOA	MW-165	04/13/2001	PROFILE	230.00	230.00	150.50	150.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G165DQA	MW-165	04/13/2001	PROFILE	250.00	250.00	170.50	170.50	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G166DAA	MW-166	04/19/2001	PROFILE	120.00	120.00	10.00	10.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
G166DAA	MW-166	04/19/2001	PROFILE	120.00	120.00	10.00	10.00	8330N	NITROGLYCERIN	NO
G166DAA	MW-166	04/19/2001	PROFILE	120.00	120.00	10.00	10.00	OC21V	ACETONE	
G166DAA	MW-166	04/19/2001	PROFILE	120.00	120.00	10.00	10.00	OC21V	METHYL ETHYL KETONE (2-BUT	
G166DBA	MW-166	04/19/2001	PROFILE	130.00	130.00	20.00	20.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES

DATA REPORTED REFLECT CURRENT DATABASE FOR SAMPLES COLLECTED IN SPECIFIED TIMEFRAME. NOT ALL RESULTS ARE COMPLETE.

SBD = SAMPLE COLLECTION BEGIN DEPTH IN FEET BGS

SED = SAMPLE COLLECTION END DEPTH IN FEET BGS

BWTS = DEPTH BELOW WATER TABLE, START DEPTH, MEASURED IN FEET

BWTE = DEPTH BELOW WATER TABLE, END DEPTH, MEASURED IN FEET

PDA/YES = Photo Diode Array, Detect Confirmed

PDA/NO = Photo Diode Array, Detect Not Confirmed

TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 3/30/01-4/20/01

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
G166DBA	MW-166	04/19/2001	PROFILE	130.00	130.00	20.00	20.00	8330N	NITROGLYCERIN	NO
G166DBA	MW-166	04/19/2001	PROFILE	130.00	130.00	20.00	20.00	8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES
G166DBA	MW-166	04/19/2001	PROFILE	130.00	130.00	20.00	20.00	OC21V	ACETONE	
G166DCA	MW-166	04/20/2001	PROFILE	140.00	140.00	30.00	30.00	OC21V	ACETONE	
G166DCD	MW-166	04/20/2001	PROFILE	140.00	140.00	30.00	30.00	OC21V	ACETONE	
G166DDA	MW-166	04/20/2001	PROFILE	150.00	150.00	40.00	40.00	OC21V	ACETONE	
G166DEA	MW-166	04/20/2001	PROFILE	160.00	160.00	50.00	50.00	OC21V	ACETONE	
G166DFA	MW-166	04/20/2001	PROFILE	170.00	170.00	60.00	60.00	OC21V	ACETONE	
G166DFD	MW-166	04/20/2001	PROFILE	170.00	170.00	60.00	60.00	OC21V	ACETONE	
HC130AH1CAA	130AH	04/04/2001	SOIL GRID	0.50	1.00			8330N	HEXAHYDRO-1,3,5-TRINITRO-1,	YES
HC130AH1CAA	130AH	04/04/2001	SOIL GRID	0.50	1.00			8330N	OCTAHYDRO-1,3,5,7-TETRANIT	YES

DATA REPORTED REFLECT CURRENT DATABASE FOR SAMPLES COLLECTED IN SPECIFIED TIMEFRAME. NOT ALL RESULTS ARE COMPLETE.

SBD = SAMPLE COLLECTION BEGIN DEPTH IN FEET BGS

SED = SAMPLE COLLECTION END DEPTH IN FEET BGS

BWTS = DEPTH BELOW WATER TABLE, START DEPTH, MEASURED IN FEET

BWTE = DEPTH BELOW WATER TABLE, END DEPTH, MEASURED IN FEET

PDA/YES = Photo Diode Array, Detect Confirmed

PDA/NO = Photo Diode Array, Detect Not Confirmed

Groundwater Wells at MMR

LEGEND

- Existing Monitoring Well
- Proposed Monitoring Well
- Proposed Supply Well



0 0.5 1 Miles



