WEEKLY PROGRESS UPDATE
FOR AUGUST 13 – AUGUST 17, 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 August 13 to August 17, 2001.

1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of August 17 is summarized in Table 1.

Table 1. Drilling progress as of August 17, 2001

Boring Number	Purpose of Boring/Well	Total Depth (ft bgs)	Saturated Depth (ft bwt)	Completed Well Screens (ft bgs)
MW-176	Central Impact Area Well (CIAP-5)	290	176	

Bgs = below ground surface
Bwt = below water table

Completed drilling of MW-176 (CIAP-5). A tank and tank parts were excavated from the J-1 Range as part of the Munitions Survey Project.

Samples collected during the reporting period are summarized in Table 2. Groundwater profile samples were collected from MW-176 (CIAP-5). Groundwater samples were collected as part of the August Long Term Groundwater Monitoring round. Water samples were collected from drive points and surface monitoring locations at Snake Pond. Water samples were also collected from the GAC unit and from drums that contained decon water from the RRA containment pad. Soil samples were collected from grids at the tank excavation location on J-1 Range and from grids on J-2 Range and at Area 46 off Greenway Road near L Range. A soil sample was also collected at the MW-121 well pad. A solids sample was collected from the J-2 Range latrine for white phosphorus analysis. Post-excavation and post-detonation BIP samples were collected at Mortar Target 9.

The Guard, EPA, and MADEP had a meeting on August 16 to discuss technical issues, including the following:

Attendees

Ben Gregson (IAGWSPO)
Bill Gallagher (IAGWSPO)
Mike Jasinski (EPA-phone)
Mark Panni (MADEP)
Drew Clemens (ACE)
Ellen Iorio (ACE - phone)
John Rice (AMEC)
Larry Hudgins (Tetra Tech)
Dave Williams (MDPH)
Dave Hill (IAGWSPO)
Tina Dolen (IAGWSPO)
Jane Dolan (EPA)
Darrell Deleppo (ACE)
John MacPherson (ACE)
Rob Clemens (AMEC)
Kim Harriz (AMEC)
Leo Montroy (Tt–phone)
Ken Gaynor (Jacobs)
CPT Bill Meyer (IAGWSPO)
Pam Bonin (IAGWSPO)
Len Pinaud (MADEP)
Heather Sullivan (ACE)
Ed Wise (ACE)
Scott Veenstra (AMEC-phone)
Jay Clausen (AMEC-phone)
Susan Stewart (Tetra Tech–phone)
Adam Balogh (TRC)

Snake Pond Plan Update

Dave Hill (IAGWSPO) provided an update on the status of USGS plan to place diffusion samplers in Snake Pond.

- USGS had committed to provide an email of the Workplan today, 8/16. The Guard will forward the Workplan to the agencies as soon as it is received. It was Mr. Hill's understanding that the test-line of samplers would be placed along the line of the particle track from MW-171, to the extent that the line could be determined in the field. It was expected that the field test would commence in early September.
- In a follow-up email Jane Dolan (EPA) stated that in a subsequent conversation with Denis LeBlanc (USGS), Mr. LeBlanc indicated that the diffusion samplers would be installed in Snake Pond next Thursday or Friday (8/23-8/24). The results should be available in early September. The placement of the lines was also discussed and may be changed from the location stated by Mr. Hill, based on Ms. Dolan's comments.

CS-19 Wells

Mike Jasinski (EPA) and Ken Gaynor (Jacobs) provided information on well installation for the CS-19 plume.

- Recently installed 58MW0020 is being developed this week. Soil borings were completed yesterday 8/15. Elevation/location survey of well location can probably be completed next week.
- It was agreed at the IRP-RPM meeting that a second CS-19 well would NOT be installed despite differences noted by EPA regarding the various particle tracks performed for this source area.
- Mr. Jasinski inquired if anyone had noted AMEC's sampling result at 58MW0018A that showed 2,6-DNT concentrations at 30 times the MCL. Mr. Gaynor indicated that they had noted this data that was provided in the "Explosive Detections in Groundwater" spreadsheet distributed to the Tech team by Marc Grant (AMEC). Mr. Gaynor assured Mr. Jasinski that these results would be considered in developing the CS-19 Feasibility Study.

AIRMAG Update

- Ellen Iorio (ACE) indicated that intrusive investigation of the next 10 anomalies had not commenced but would be completed before 8/27. A presentation of the AirMag validation effort was slated for 9/12. The presentation would include a discussion of the verification of the primary and secondary targets and validation of the 15 anomalies that had been/would be intrusively investigated.
- Ms. Iorio requested a waiver for the AirMag letter report due 8/31, since a presentation would be given on 9/12. The presentation materials could be provided to the agencies one week prior to the meeting, on 9/5, so that they could be prepared for discussion of the material.
- Jane Dolan (EPA) inquired if the AirMag data would be included in the revised Munitions Survey Report also due on 8/31. Leo Montroy (Tetra Tech) explained that the AirMag as included in the original MSP report (to include the Gun&Mortar positions and water bodies but not the Central Impact Area) would be presented in Chapter 10 of the revised Report. Ms. Dolan inquired as to when was the content of the report changed, as she had a draft outline that indicated the Central Impact Area data would be included. CPT Myer (IAGWSPO) responded that this was specified in the Response to Comments submitted to EPA in January. Ms. Dolan to check Response to Comments. Mike Jasinski (EPA) stated

that EPA would get back to Ms. Iorio on Monday regarding the waiver of the 8/31 letter report.

- Mr. Jasinski inquired about Anomaly 1-250 that was recommended in the original proposal for intrusive investigation. Ms. Iorio indicated that this anomaly was not one of the 10 currently slated to be investigated, but that it could be considered for future efforts. This could be discussed at the 9/12 meeting.

J-1 Range Anomaly Excavation

Larry Hudgins (Tetra Tech) gave a summary of excavation activities.

- Excavations were started this week. In the first excavation, parts were uncovered close to the surface including tank treads, wheel wells, cogs and other scrap parts. This excavation had been backfilled. One composite sample of the excavated soil would be collected by hand augering in the area of backfilled soil.
- In the second excavation, a M-48 tank with turret and gun barrel and a second turret with gun barrel were uncovered and removed. There were no bullet holes in the tank. The tank engine had been removed. There was no oil staining observed on the soil, although there was some staining on the tank.
- Tetra Tech planned to check the excavation for additional anomalies, excavate if needed, allow for AMEC to collect post-excavation samples, line the base of the excavation with plastic, collect a composite characterization sample of the excavated soil (analyze for explosives, VOCs, EDB, SVOCs, pesticides) and then backfill the excavation.
- The tank will be recycled as scrap.
- Jane Dolan (EPA) indicated that there were several spots in the excavation that she would like sampled. Ms. Dolan to specify in a site visit today (8/16) with Dave Hill (IAGWSPO) and Tim Dwyer (AMEC).
- Mike Jasinski (EPA) requested copies of photographs of the tank removal.
- Ben Gregson (IAGWSPO) reviewed the considerations for a radiation survey of the tank excavation project. There were two considerations 1) the Health and Safety issue for the workers and 2) the scope of screening for the tank. Regarding the first issue, both Tetra Tech and AMEC, the contractors involved with the tank excavation, had Health & Safety plans that considered the risk of the task and specify the monitoring requirements for the task. The companies' H&S personnel and ACE H&S personnel have reviewed the plans and have determined that the field personnel are adequately covered. Regarding the second task, the scope and vision for screening the tank, it was noted that there were no bullet holes in the tank (the implication being that no DU rounds had impacted the tank). However, radiation screening of the tank can be completed. The Guard would like further clarification on what the data will mean.
- Pursuant to guidance on radiation data, Ellen Iorio (ACE) contacted CHPPM who suggested that the tank be screened in accordance with Army Regulation 11-9, Table 5-2. Regulation 11-9 specifies that the tank's radium dials be screened. An action level for their removal is 20 dpm/100cm^2. The action level for DU is dpm/100cm^2. Ms. Iorio inquired if the EPA concurred with these action levels. Ms. Dolan asked for the background document. Ms. Iorio to provide.
- Jay Clausen (AMEC) stated that he was formerly employed by a DOE contractor and offered to provide Ms. Iorio with information regarding interpretation of rad screening results.
- Rob Clemens (AMEC) and CPT Myer (IAGWSPO) pointed out that the scrap contractor will conduct radiation screening of the tank prior to removal. ACE to inquire about the scrap contractor's procedures.

- Ms. Dolan indicated that she wanted an instrument scan (inside and outside of the tank) similar to the one done for the U Tank and steel plates.
- Ms. Iorio asked for clarification on Todd Borci's (EPA) email regarding completing rad surveys for all large-scale excavations. Len Pinaud (MADEP) asked if this was for all buried targets, UXO caches…. what items specifically? Ms. Dolan indicated that this would have to be clarified with Mr. Borci. Heather Sullivan (ACE) indicated that Mr. Borci had wanted a rad survey conducted for the J-1 Range pail excavation.
- Mike Jasinski (EPA) expressed that he was concerned about the Health & Safety of the field personnel. Mr. Pinaud (MADEP) pointed out that this was covered by the H&S Plans and was the responsibility of the contractors. Mr. Clemens pointed out that surveys conducted by AMEC in 1997, Tetra Tech's DU survey and a rad survey conducted by Oakridge DOE personnel had all indicated that there was no site radiation risk above background.
- Ms. Dolan further inquired why Tetra Tech couldn't use the screening protocol for the tank that they had used for the targets. Dave Hill (IAGWSPO) and Mr. Hudgins pointed out that there were no penetration holes – the target survey had been of the penetration holes. Ms. Iorio stated that since there were no penetration holes it seemed obvious that no DU rounds had been fired at the tank. Ms. Dolan pointed out that photographs were in EPA's possession of a Textron test set-up that showed firing into the engine block of a tank.
- Ms. Iorio stated that she would provide Ms. Dolan with the army protocol, review Tetra Tech's rad survey protocol as appropriate, develop a scope of work for a rad survey and solicit the agencies concurrence. Ms. Dolan indicated that Mr. Borci wanted the scope of work this week. Ms. Iorio indicated that that was probably not possible, but the scope would be provided ASAP.
- Ms. Dolan requested that the tank be covered with a tarp and that the excavation be backfilled <u>after</u> the post excavation and backfill samples were collected.

<u>Mortar Target 9 Update</u>

Scott Veenstra (AMEC) presented a summary of the week's activities.

- Water sampling of drums at RRA containment pad was completed on 8/13, as requested by Jane Dolan (EPA).
- EPA comments on the Additional Delineation Sampling Summary Report were expected on 8/23.
- Post excavation sampling at Mortar Target 9 was completed 8/13. Samples were shipped 8/13 for 5-day laboratory TAT.
- Soil was transported to the HUTA for defragging (UXO clearance) and the last batch of soil is staged there. Dave Hill (IAGWSPO) indicated that the Guard was trying to consolidate soil to be excavated at the BIP craters with the remaining Mortar Target 9 soil to maximize hauling efficiency.
- Bill Gallagher (IAGWSPO) indicated that the BIP crater removal was optimistically scheduled for the end of September. This soil will also be defragged at the HUTA staging pad.
- Heather Sullivan (ACE) commented that Karen Wilson (IAGWSPO) was developing the site restoration scope. The scope would include intrusive UXO clearance to three feet below current (excavated) grade. Tetra Tech will be contracted to complete the restoration including clearance, planting and watering. Ms. Wilson would submit a letter regarding the restoration plan on 8/24.
- Regarding Mike Jasinski's (EPA) inquiry on the ITE Studies, Mr. Veenstra reported that the soil report would be submitted in a week and the groundwater report would follow shortly thereafter, by the end of the month.

- Later in the meeting Ms. Dolan inquired about the RRA Response to Comments letter revision 2. Mr. Veenstra reported that it would be sent to the agencies early next week.

Central Impact Area Wells

- Bill Gallagher (IAGWSPO) indicated that AMEC had developed a list of 8 additional well locations for the Central Impact Area. However, Todd Borci (EPA) had separately specified well locations and the order of installation. Since the locations that Mr. Borci provided were at least as or more readily accessible than those proposed by AMEC, the Guard was in general agreement with Mr. Borci's selections. Heather Sullivan (ACE) indicated that these locations were, in preferred order of installation: CIAP-9, 10, 20, 18, 23, 22, 11, and 12.
- The Guard had requested to combine locations CIAP-11 and CIAP-12 as Mike Ciaranca (MAARNG) had concerns on the need for both locations (which are relatively close together) because they are both located in optimal scrub oak habitat. Mr. Borci had reaffirmed in a follow-up email that both were needed. Mr. Ciaranca was also concerned about CIAP-13 and CIAP-24.
- Len Pinaud (MADEP) inquired about CIAP-8, a location that had been on the first set of 8. Ms. Sullivan indicated that CIAP-9 had been substituted for that location, but that the RAC approval for the CIAP-8 location was still being pursued.
- Ms. Sullivan indicated that Karen Wilson (IAGWSPO) would contact Hanni Dinkeloo (NHESP) about potential concerns with these locations when she returns from vacation next week. Ms. Sullivan would begin the scoping and REC process for this set of 8 wells.
- Mike Jasinski (EPA) inquired about a well that was missing from the maps, location near MW-88 and east of CIAP-17. Ms. Sullivan indicated that Mr. Borci had pointed out this omission and that this proposed location would be added to the maps.

Central Impact Area Groundwater PSI

Jay Clausen (AMEC) outlined the steps and issues related to expediting the Central Impact Area Pump Test that would be a principal focus of the PSI.

- The plan for the pump test is to identify a location for the pumping (extraction) well, forward a map of the location to the Tech team for approval, and following approval, immediately prepare a RAC. Under the present schedule, the pump test work plan is to be submitted on 10/4. AMEC will try to accelerate that schedule, but Mr. Clausen wanted to add a lot of detail to the plan with exact specifications (well screen length, etc), so that it could be handed off directly to the field personnel to implement.
- The current schedule allowed for well installation in late November. AMEC was attempting to accelerate that schedule to install wells in October, but that was questionable. If well installation was accelerated to October, the pump test could be completed in late November or early December, prior to the really cold weather. Otherwise, to avoid the logistical problems introduced by freezing weather (frozen lines, frozen GAC), they would prefer to wait to mid to late March.
- CPT Myer (IAGWSPO) also pointed out that in terms of scheduling the actual test, the range training schedule as well as the HUTA exclusion zone should be consulted. Rob Clemens (AMEC) commented that the same consideration was needed for hunting season.
- Mr. Clausen further indicated that AMEC was considering locating the well in the area of MW-1, which has already been swept for UXO and where there are several gravel pads. This should assist in minimizing REC approval time or eliminate the need for a REC and also UXO clearance.

- Mike Jasinski (EPA) requested a Gantt chart showing a detailed schedule. Mr. Clausen to consult with Marc Grant (AMEC).
- Len Pinaud (MADEP) inquired if conducting the pump test indicated that the Guard was committing to pump and treat for remediation. Mr. Clausen/Mr. Jasinski explained that the pump test was being conducted to define aquifer characteristics to refine the groundwater model. This information was needed to better evaluate remedial alternatives selected for the FS.

HUTA 2 Scope

Ellen Iorio (ACE) stated that this agenda item was added to get feedback from the agencies regarding the proposed HUTA2 scope.

- Jane Dolan (EPA) relayed that EPA did not have an internal discussion on the scope yet. For preliminary comment, Ms. Dolan offered that she liked the transect approach, but not necessarily all the areas that were selected for sampling. Ms. Dolan liked the 5 corners area and the area around the HUTA and air to surface targets, but not the other target areas chosen for investigation. In addition, Ms. Dolan stated that the overall approach "looked good".
- Mike Jasinski (EPA) promised to send an email on Monday 8/20 summarizing EPA concerns and questions regarding the HUTA2 scope.

Former H Range – FUDS

Ellen Iorio (ACE) presented an update on the Former H Range work at EPA's request.

- The contractor (Roy F. Weston) mobilized on 8/13. An anomaly was discovered on the MMR side of the road during a UXO clearance of the access road to the former range. Intrusive investigation resulted in the discovery of a presumed HE mortar round that was scheduled to be BIPed today, 8/16. UXO clearance continued along the road to Camp GoodNews. 12 additional anomalies have been identified that are not related to surface features. The southern-end of the former firing fan extends to Camp GoodNews and the access road clips the fan. Therefore, there is a medium to high probability of finding UXO; and the anomalies identified along the access road will be intrusively investigated. Currently the exclusion zone around the anomaly excavations is not being extended; a 3-sided aluminum engineering control device (known in the vernacular as a "Bud-Lite") is being used to minimize the required exclusion zone. This decision will be reevaluated depending on what is discovered in the initial intrusive investigations. Ms. Iorio notified Camp GoodNews of the BIP and also about the additional anomalies. Tina Dolen (IAGWSPO) also notified the Town of Sandwich, even though the exclusion zone did not extend into Sandwich and notification was not required.
- Len Pinaud (MADEP) requested notification of any additional BIPs, by phone or pager.
- Delineation sampling was started yesterday 8/15. Features to be sampled were identified in a site walk with the ACE, Mark Panni (MADEP) and Jane Dolan (EPA). These included 3 bunkers, an area out from the wetland, and a rubble pile that may be a former bunker.
- Dave Williams (MDPH) requested a copy of the workplan.
- Ms. Dolan requested a regular (once or twice weekly) update on delineation sampling results.

Other Items

- Heather Sullivan (ACE) asked about the status of EPA comments on Tech Memo 01-13. Mike Jasinski (EPA) indicated that review of Tech Memo 01-13 is likely to be delayed as EPA is reviewing the integration schedule provided by AMEC with respect to the Central Impact Area. Ellen Iorio (ACE) asked about comments on the CDC Test Report. Mr. Jasinski relayed that issues with the technical review contract have delayed the review schedule for 8 weeks
- Jane Dolan (EPA) requested a proposal on how and when Snake Pond plumes would be drawn on maps.
- Ms. Dolan requested an update on Textron's schedule of removal activities on J-3 Range. Previous correspondence indicated that removal of the concrete blocks was slated for August. Is this still the schedule?
- Len Pinaud (MADEP) inquired about CIAP-10, if it was to be located 300 feet south of the MW-110 on the CS-19 particle track, as requested by EPA. John Rice to check well location.
- Dave Williams (MDPH) pointed out that the recent table of explosive results showed that the Sandwich, Weeks Pond Sentry wells were non detect for explosives.

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:

- Groundwater profile samples collected from MW-176 (Central Impact Area) had detections of 2A-DNT (2 intervals). These detections were not confirmed by PDA.

- Groundwater samples collected from MW-43M2 (Central Impact Area Response well) and MW-75M2 (Demo 1) had detections of RDX that were confirmed by PDA. RDX was detected in these wells in similar concentrations in previous sampling rounds.

- Groundwater samples collected from MW-76S (Demo 1) had detections of RDX and MNX that were confirmed by PDA. RDX has been detected in this well in a similar concentration in the previous sampling round. In previous rounds, HMX has also been detected. This is the first time this well has been analyzed using method 8330NX, which enables MNX to be detected.

- Groundwater samples collected from MW-77M2 (Demo 1) had detections of 4A-DNT, RDX, HMX and MNX that were confirmed by PDA. RDX, HMX, and 4A-DNT were detected in similar concentrations in the previous sampling round. This is the first time this well has been analyzed using method 8330NX, which enables MNX to be detected.

3. DELIVERABLES SUBMITTED

Weekly Progress Update, August 6 – August 10, 2001	8/16/01
Phase IIb Report (Technical Memorandum 01-15)	8/17/01

4. SCHEDULED ACTIONS

Scheduled actions for the week of August 20 include installation of monitor well MW-176; commence drilling at CIAP-7 (MW-177) and CIAP-3 (MW-178); complete soil borings at Demo 1 and the J-3 Range wastewater holding tank; collect soil samples at Area 46 and continue August Long Term groundwater monitoring.

5. SUMMARY OF ACTIVITIES FOR DEMO 1

An additional downgradient well location (D1P-8) on Pew Road will be drilled in the coming weeks. Analysis of first, second, and third round groundwater samples from newly installed wells is ongoing. Analysis of soil samples for TOC and other analytes is ongoing. The groundwater Feasibility Study is being prepared.

TABLE 2
SAMPLING PROGRESS
8/11/2001-8/17/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
WE.A.1.00001.3.0	WE08130101	08/16/2001	CRATER GRID	0.00	0.25		
0.G.0.00117.0.T	TRIP BLANK 117	08/16/2001	FIELDQC	0.00	0.00		
G176DAE	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
G176DAF	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
G176DCE	FIELDQC	08/15/2001	FIELDQC	0.00	0.00		
G176DFE	FIELDQC	08/16/2001	FIELDQC	0.00	0.00		
G176DQE	FIELDQC	08/17/2001	FIELDQC	0.00	0.00		
HC05BB1BAE	FIELDQC	08/16/2001	FIELDQC	0.00	0.00		
HC05BB1BAT	FIELDQC	08/16/2001	FIELDQC	0.00	0.00		
HC05BC1BAT	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
HC05BE1BAE	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
HC05CA1BAE	FIELDQC	08/17/2001	FIELDQC	0.00	0.00		
HC05CA1BAT	FIELDQC	08/17/2001	FIELDQC	0.00	0.00		
HC101NE1AAE	FIELDQC	08/13/2001	FIELDQC	0.00	0.00		
HC101NH1AAE	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
HCPE87FA1AAE	FIELDQC	08/13/2001	FIELDQC	0.00	0.00		
HCPE87FA1AAF	FIELDQC	08/13/2001	FIELDQC	0.00	0.00		
HD101NE1AAF	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
HD101Q1AAE	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
HDA08080101AT	FIELDQC	08/13/2001	FIELDQC	0.00	0.00		
LKSNK0005AAT	FIELDQC	08/17/2001	FIELDQC	0.00	0.00		
W66SST	FIELDQC	08/14/2001	FIELDQC	0.00	0.00		
90SNP0001	90SNP0001	08/15/2001	GROUNDWATER				
90SNP0001	90SNP0001	08/15/2001	GROUNDWATER				
90SNP0002	90SNP0002	08/15/2001	GROUNDWATER				
LKSNK0004AAA	LKSNK0004	08/17/2001	GROUNDWATER	1.00	1.00		
LKSNK0005AAA	LKSNK0005	08/17/2001	GROUNDWATER	1.00	1.00		
LKSNK0005AAD	LKSNK0005	08/17/2001	GROUNDWATER	1.00	1.00		
W162M1A	MW-162	08/15/2001	GROUNDWATER	190.50	200.50	115.30	125.30
W162M2A	MW-162	08/15/2001	GROUNDWATER	125.50	135.50	50.20	60.20
W162M3A	MW-162	08/16/2001	GROUNDWATER	85.00	95.00	9.70	19.70
W165M1A	MW-165	08/16/2001	GROUNDWATER	184.50	194.50	105.30	115.30
W165M2A	MW-165	08/16/2001	GROUNDWATER	124.50	134.50	45.30	55.30
W165M3A	MW-165	08/16/2001	GROUNDWATER	94.00	104.00	14.90	24.90
W175M1A	MW-175	08/13/2001	GROUNDWATER	264.00	274.00	139.25	149.25
W175M2A	MW-175	08/14/2001	GROUNDWATER	199.00	209.00	74.45	84.45
W175M3A	MW-175	08/15/2001	GROUNDWATER	162.00	167.00	37.40	47.40
W1DDA	MW-1	08/15/2001	GROUNDWATER	290.00	300.00	170.50	180.50
W1M1A	MW-1	08/16/2001	GROUNDWATER	220.00	225.00	100.90	105.90
W1M2A	MW-1	08/15/2001	GROUNDWATER	160.00	165.00	40.60	45.60
W1SSA	MW-1	08/16/2001	GROUNDWATER	114.00	124.00	0.00	10.00
W30SSA	MW-30	08/17/2001	GROUNDWATER	26.00	36.00	0.00	10.00
W37M1A	MW-37	08/15/2001	GROUNDWATER	181.00	191.00	58.80	68.80

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
8/11/2001-8/17/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
W37M2A	MW-37	08/15/2001	GROUNDWATER	145.00	155.00	22.80	32.80
W37M2D	MW-37	08/15/2001	GROUNDWATER	145.00	155.00	22.80	32.80
W37M3A	MW-37	08/15/2001	GROUNDWATER	130.00	140.00	8.00	18.00
W38M1A	MW-38	08/14/2001	GROUNDWATER	217.00	227.00	95.52	105.52
W38M2A	MW-38	08/14/2001	GROUNDWATER	187.00	197.00	65.48	75.48
W38M2D	MW-38	08/14/2001	GROUNDWATER	187.00	197.00	65.48	75.48
W38M3A	MW-38	08/14/2001	GROUNDWATER	170.00	180.00	48.74	58.74
W38M4A	MW-38	08/14/2001	GROUNDWATER	132.00	142.00	10.64	20.64
W40M1A	MW-40	08/16/2001	GROUNDWATER	132.00	142.00	11.20	21.20
W41M1A	MW-41	08/14/2001	GROUNDWATER	235.00	245.00	104.87	114.87
W54M3A	MW-54	08/17/2001	GROUNDWATER	180.00	190.00	26.20	36.20
W63M3A	MW-63	08/13/2001	GROUNDWATER	182.00	192.00	24.90	34.90
W63SSA	MW-63	08/13/2001	GROUNDWATER	153.00	163.00	0.00	10.00
W65SSA	MW-65	08/13/2001	GROUNDWATER	116.00	126.00	0.00	10.00
W65SSA	MW-65	08/14/2001	GROUNDWATER	116.00	126.00	0.00	10.00
W66SSA	MW-65	08/13/2001	GROUNDWATER	125.00	135.00	0.00	10.00
W66SSA	MW-66	08/13/2001	GROUNDWATER	125.00	135.00	0.00	10.00
W68SSA	MW-68	08/15/2001	GROUNDWATER	84.00	94.00	0.00	10.00
W70SSA	MW-70	08/14/2001	GROUNDWATER	132.00	142.00	2.20	12.20
W74M1A	MW-74	08/13/2001	GROUNDWATER	170.00	180.00	73.00	83.00
W74M3A	MW-74	08/13/2001	GROUNDWATER	100.00	110.00	3.00	13.00
W76M1A	MW-76	08/13/2001	GROUNDWATER	125.00	135.00	54.88	64.88
W76M2A	MW-76	08/13/2001	GROUNDWATER	105.00	115.00	34.72	44.72
W76M2D	MW-76	08/13/2001	GROUNDWATER	105.00	115.00	34.72	44.72
W77M1A	MW-77	08/13/2001	GROUNDWATER	180.00	190.00	94.12	104.12
W78M1A	MW-78	08/14/2001	GROUNDWATER	135.00	145.00	54.20	64.20
W78M2A	MW-78	08/15/2001	GROUNDWATER	115.00	125.00	34.10	44.10
W78M3A	MW-78	08/15/2001	GROUNDWATER	85.00	95.00	0.00	10.00
W79M1A	MW-79	08/16/2001	GROUNDWATER	156.00	166.00	64.00	74.00
W79M2A	MW-79	08/16/2001	GROUNDWATER	116.00	126.00	24.10	34.10
W79SSA	MW-79	08/16/2001	GROUNDWATER	89.00	99.00	0.00	10.00
W80SSA	MW-80	08/17/2001	GROUNDWATER	53.00	58.00	6.20	16.20
W81M2A	MW-81	08/16/2001	GROUNDWATER	53.00	58.00	23.40	33.40
W81M2A	MW-81	08/16/2001	GROUNDWATER	53.00	58.00	23.40	33.40
W81M3A	MW-81	08/16/2001	GROUNDWATER	83.00	93.00	54.00	64.00
W81SSA	MW-81	08/16/2001	GROUNDWATER	25.00	35.00	0.00	10.00
W81SSA	MW-81	08/17/2001	GROUNDWATER	25.00	35.00	0.00	10.00
W82M1A	MW-82	08/17/2001	GROUNDWATER	104.00	114.00	73.90	83.90
W82M2A	MW-82	08/17/2001	GROUNDWATER	78.00	88.00	48.10	58.10
W82SSA	MW-82	08/17/2001	GROUNDWATER	25.00	35.00	0.00	10.00
DW081401	GAC WATER	08/14/2001	IDW	0.00	0.00		
PPSPD1A	PPSPD1	08/13/2001	OTHER	0.00	0.00		
PPSPD2B	PPSPD1	08/13/2001	OTHER	0.00	0.00		
PPSPD3C	PPSPD3	08/13/2001	OTHER	0.00	0.00		

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TABLE 2
SAMPLING PROGRESS
8/11/2001-8/17/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
G176DAA	MW-176	08/14/2001	PROFILE	130.00	130.00	16.20	16.20
G176DBA	MW-176	08/15/2001	PROFILE	140.00	140.00	26.20	26.20
G176DCA	MW-176	08/15/2001	PROFILE	150.00	150.00	36.20	36.20
G176DCD	MW-176	08/15/2001	PROFILE	150.00	150.00	36.20	36.20
G176DDA	MW-176	08/15/2001	PROFILE	160.00	160.00	46.20	46.20
G176DEA	MW-176	08/15/2001	PROFILE	170.00	170.00	56.20	56.20
G176DFA	MW-176	08/16/2001	PROFILE	180.00	180.00	66.20	66.20
G176DFD	MW-176	08/16/2001	PROFILE	180.00	180.00	66.20	66.20
G176DGA	MW-176	08/16/2001	PROFILE	190.00	190.00	76.20	76.20
G176DHA	MW-176	08/16/2001	PROFILE	200.00	200.00	86.20	86.20
G176DIA	MW-176	08/16/2001	PROFILE	210.00	210.00	96.20	96.20
G176DJA	MW-176	08/16/2001	PROFILE	220.00	220.00	106.20	106.20
G176DKA	MW-176	08/16/2001	PROFILE	230.00	230.00	116.20	116.20
G176DLA	MW-176	08/16/2001	PROFILE	240.00	240.00	126.20	126.20
G176DMA	MW-176	08/16/2001	PROFILE	250.00	250.00	136.20	136.20
G176DNA	MW-176	08/17/2001	PROFILE	260.00	260.00	146.20	146.20
G176DOA	MW-176	08/17/2001	PROFILE	270.00	270.00	156.20	156.20
G176DPA	MW-176	08/17/2001	PROFILE	280.00	280.00	166.20	166.20
G176DQA	MW-176	08/17/2001	PROFILE	290.00	290.00	176.20	176.20
S121DAA	MW-121	08/14/2001	SOIL BORING	0.00	0.50		
HC05BB1BAA	05BB	08/16/2001	SOIL GRID	0.25	0.50		
HC05BC1BAA	05BC	08/16/2001	SOIL GRID	0.25	0.50		
HC05BE1BAA	05BE	08/14/2001	SOIL GRID	0.25	0.50		
HC05BF1BAA	05BF	08/14/2001	SOIL GRID	0.25	0.50		
HC05CA1AAA	05CA	08/17/2001	SOIL GRID	0.00	0.25		
HC05CA1BAA	05CA	08/17/2001	SOIL GRID	0.25	0.50		
HC05CA1BAD	05CA	08/17/2001	SOIL GRID	0.25	0.50		
HC05CA1CAA	05CA	08/17/2001	SOIL GRID	0.50	1.00		
HC101JB1BAA	101JB	08/14/2001	SOIL GRID	0.25	0.50		
HC101ND1AAA	101ND	08/13/2001	SOIL GRID	0.00	0.25		
HC101ND1BAA	101ND	08/13/2001	SOIL GRID	0.25	0.50		
HC101ND1CAA	101ND	08/13/2001	SOIL GRID	0.50	1.00		
HC101NE1AAA	101NE	08/13/2001	SOIL GRID	0.00	0.25		
HC101NE1BAA	101NE	08/13/2001	SOIL GRID	0.25	0.50		
HC101NE1CAA	101NE	08/13/2001	SOIL GRID	0.50	1.00		
HC101NH1AAA	101NH	08/14/2001	SOIL GRID	0.00	0.25		
HC101NH1AAD	101NH	08/14/2001	SOIL GRID	0.00	0.25		
HC101NH1BAA	101NH	08/14/2001	SOIL GRID	0.25	0.50		
HC101NH1CAA	101NH	08/14/2001	SOIL GRID	0.50	1.00		
HC101NJ1AAA	101NJ	08/13/2001	SOIL GRID	0.00	0.25		
HC101NJ1BAA	101NJ	08/13/2001	SOIL GRID	0.25	0.50		
HC101NJ1CAA	101NJ	08/13/2001	SOIL GRID	0.50	1.00		
HC46EA1CAA	46EA	08/16/2001	SOIL GRID	0.50	1.00		
HCPE87101AAA	PE87101	08/13/2001	SOIL GRID	0.00	0.50		

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TABLE 2
SAMPLING PROGRESS
8/11/2001-8/17/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
HCPE87251AAA	PE87251	08/13/2001	SOIL GRID	0.00	0.50		
HCPE87251AAD	PE87251	08/13/2001	SOIL GRID	0.00	0.50		
HCPE87351AAA	PE87351	08/13/2001	SOIL GRID	0.00	0.50		
HCPE87351AAD	PE87351	08/13/2001	SOIL GRID	0.00	0.50		
HCPE87FA1AAA	PE87FA1	08/13/2001	SOIL GRID	0.00	0.50		
HD101Q1AAA	101Q1	08/14/2001	SOIL GRID	0.00	0.25		
HDA08070101AA	A08070101	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070102AA	A08070102	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070103AA	A08070103	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070103AD	A08070103	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070104AA	A08070104	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070105AA	A08070105	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070106AA	A08070106	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070107AA	A08070107	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070108AA	A08070108	08/13/2001	SOIL GRID	0.00	0.25		
HDA08070109AA	A08070109	08/13/2001	SOIL GRID	0.00	0.25		
HDA08080101AA	A08080101	08/13/2001	SOIL GRID	0.00	0.25		
HDA08080102AA	A08080102	08/13/2001	SOIL GRID	0.00	0.25		
HDA08080103AA	A08080103	08/13/2001	SOIL GRID	0.00	0.25		
HDA08080104AA	A08080104	08/13/2001	SOIL GRID	0.00	0.25		
HDA08080105AA	A08080105	08/13/2001	SOIL GRID	0.00	0.25		
HDA08080106AA	A08080106	08/13/2001	SOIL GRID	0.00	0.25		
HDA08090101AA	A08090101	08/13/2001	SOIL GRID	0.00	0.25		
HDA08090101AA	A08090101	08/14/2001	SOIL GRID	0.00	0.25		
HDA08090101AD	A08090101	08/14/2001	SOIL GRID	0.00	0.25		
HDA08090102AA	A08090102	08/13/2001	SOIL GRID	0.00	0.25		
HDA08090102AA	A08090102	08/14/2001	SOIL GRID	0.00	0.25		
HDPE87101AAA	PE87101	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87103AAA	PE87103	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87105AAA	PE87105	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87107AAA	PE87107	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87251AAA	PE87251	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87253AAA	PE87253	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87255AAA	PE87255	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87257AAA	PE87257	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87351AAA	PE87351	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87353AAA	PE87353	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87355AAA	PE87355	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87357AAA	PE87357	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87FA1AAA	PE87FA1	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87FA2AAA	PE87FA2	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87FA3AAA	PE87FA3	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87FA4AAA	PE87FA4	08/13/2001	SOIL GRID	0.00	0.50		
HDPE87FA5AAA	PE87FA5	08/13/2001	SOIL GRID	0.00	0.50		

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TABLE 2
SAMPLING PROGRESS
8/11/2001-8/17/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
J1.F.3.00001.1.0	J1.3.00001	08/16/2001	SOIL GRID	1.00	1.25		
J1.F.3.00002.1.0	J1.3.00002	08/16/2001	SOIL GRID	1.00	1.25		

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Other Sample Types methods are variable
SBD = Sample Begin Depth, measured in feet bgs
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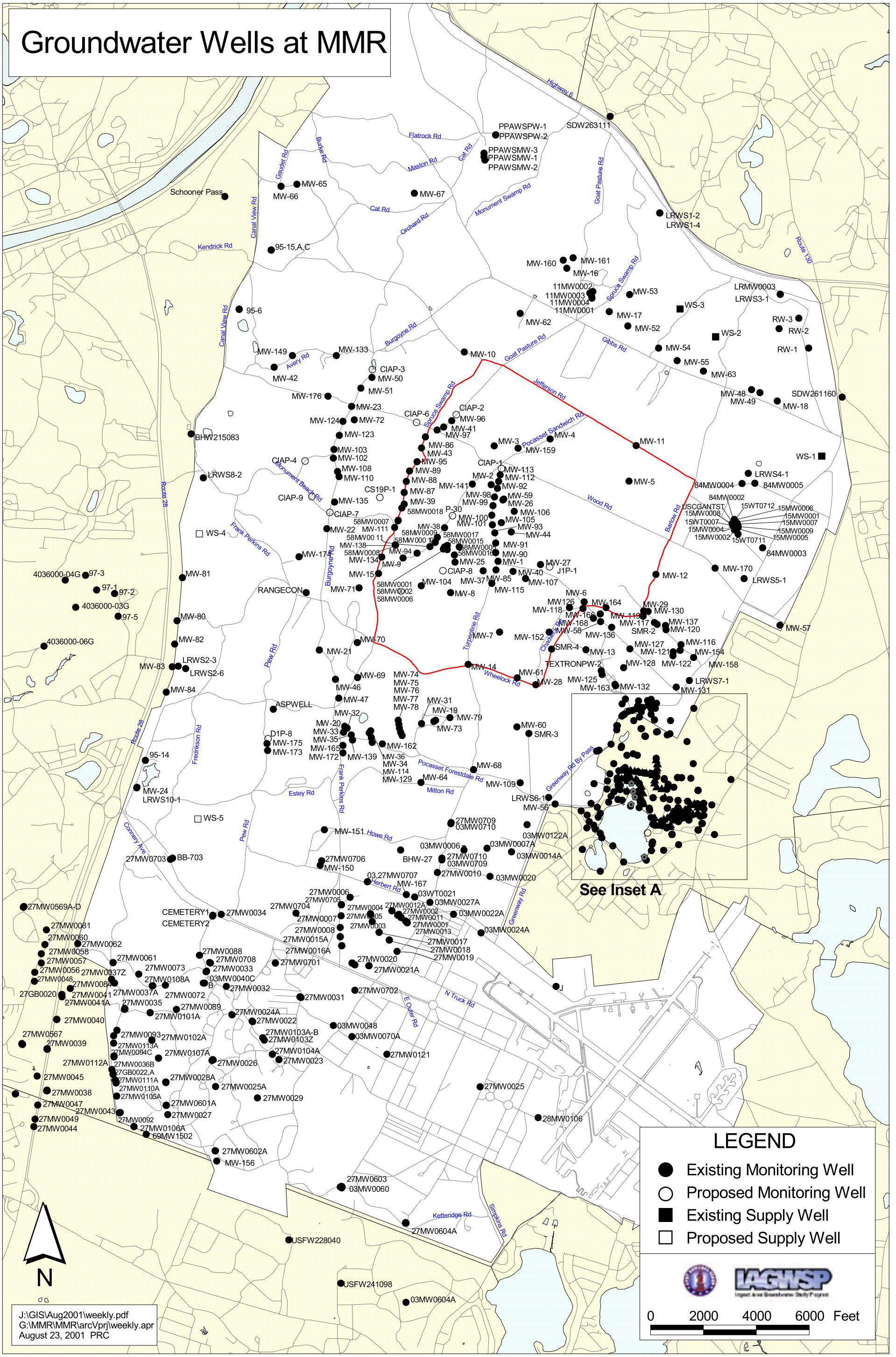
TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 7/28/01-8/17/01

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
W43M2A	MW-43	08/07/2001	GROUNDWATER	200.00	210.00	63.30	73.30	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W75M2A	MW-75	08/09/2001	GROUNDWATER	115.00	125.00	30.79	40.79	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76SSA	MW-76	08/10/2001	GROUNDWATER	85.00	95.00	14.74	24.74	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76SSA	MW-76	08/10/2001	GROUNDWATER	85.00	95.00	14.74	24.74	8330NX	HEXAHYDRO-1-MONONITROSO	YES
W77M2A	MW-77	08/10/2001	GROUNDWATER	120.00	130.00	34.21	44.21	8330NX	4-AMINO-2,6-DINITROTOLUENE	YES
W77M2A	MW-77	08/10/2001	GROUNDWATER	120.00	130.00	34.21	44.21	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W77M2A	MW-77	08/10/2001	GROUNDWATER	120.00	130.00	34.21	44.21	8330NX	HEXAHYDRO-1-MONONITROSO	YES
W77M2A	MW-77	08/10/2001	GROUNDWATER	120.00	130.00	34.21	44.21	8330NX	OCTAHYDRO-1,3,5,7-TETRANITI	YES
G176DDA	MW-176	08/15/2001	PROFILE	160.00	160.00	46.20	46.20	8330N	2-AMINO-4,6-DINITROTOLUENE	NO
G176DFD	MW-176	08/16/2001	PROFILE	180.00	180.00	66.20	66.20	8330N	2-AMINO-4,6-DINITROTOLUENE	NO

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



Inset A

0 600 1200 Feet

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August 23, 2001 PRC