WEEKLY PROGRESS UPDATE
FOR JANUARY 7 – JANUARY 11, 2002

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 January 7 to January 11, 2002.

1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of January 11 is summarized in Table 1.

Table 1. Drilling progress as of January 11, 2002

Boring Number	Purpose of Boring/Well	Total Depth (ft bgs)	Saturated Depth (ft bwt)	Completed Well Screens (ft bgs)
MW-193	J-3 Range Well (J3P-12)	85	53	
MW-194	J-3 Range Well (J3P-13)	60	3	
MW-195	J-3 Range Well (J3P-14)	120	85	34-39
MW-196	J-3 Range Well (J3P-15)	140	107	32-37, 45-50
MW-197	J-3 Range Well (J3P-11)	165	145	
MW-198	J-3 Range Well (J3P-16)	155	135	
MW-200	Central Impact Area Well (CIAP-8)	400	200	255-265, 294-304
MW-201	Central Impact Area Well (CIAP-10)	55		

bgs = below ground surface
bwt = below water table

Completed well installation of MW-195 (J3P-14), MW-196 (J3P-16), and MW-200 (CIAP-8). Well installation of MW-193 (J3P-12), MW-197 (J3P-11), and MW-198 (J3P-16) is scheduled for the next two weeks. Completed drilling of MW-194 (J3P-13) and commenced drilling of MW-201 (CIAP-10).

Samples collected during the reporting period are summarized in Table 2. Groundwater profile samples were collected from MW-194. The December Long Term Groundwater Monitoring round was completed. Continued sampling of preliminary rounds for recently installed Central Impact Area and Demo 1 Area wells. Post-excavation soil samples from BIP crater excavations were collected in the J-3 Range.

As part of the Munitions Survey Project, soil samples were collected from Target areas in Transect 1 and Transect 5 in the Central Impact Area HUTA2 zone. Pre-detonation and post-detonation soil samples were collected in Transect 5. Soil samples were also collected from a Transect 1 blowhole.

The Guard, EPA, and MADEP had a meeting on January 10 to discuss technical issues, including the following:

Attendees

Ben Gregson (IAGWSPO)	Dave Hill (IAGWSPO)	Tina Dolen (IAGWSPO)
Karen Wilson (IAGWSPO)	Bill Gallagher (IAGWSPO)	COL Albert Bleakley (JPO)
LTC Bill FitzPatrick (MAARNG)	Todd Borci (EPA)	Jane Dolan (EPA)
Mike Jasinski (EPA)	Jim Murphy (EPA)	Desiree Moyer (EPA)
Len Pinaud (MADEP)	Mark Panni (MADEP)	Gina Tyo (ACE)
Heather Sullivan (ACE)	Ellen Iorio (ACE)	Rob Foti (ACE)
John McPherson (ACE)	Marc Grant (AMEC)	John Rice (AMEC)
Jay Clausen (AMEC)	Herbert Colby (AMEC-phone)	Kim Harriz (AMEC)
Leo Montroy (Tetra Tech)	Larry Hudgins (Tetra Tech)	Dave Williams (MDPH)
Don Walter (USGS - phone)	Adam Balogh (TRC - phone)	

Punchlist Items

#2 Access 90PZ208 (MADEP). Ray Cottengaim (ACE) discovered that the property has changed hands again among family members. The present owner had previously signed a right-of-entry, permitting the Guard access to the property. The Corps is drafting a letter (to be sent certified mail) documenting this information and stating that the property will be entered the week of 1/21/02.

#3 Provide comments on PCN and MDL sampling approach (EPA). EPA provided a verbal OK, accepting the approach for PCN's as stated in the J-2 Additional Delineation Workplan. This approval will be documented in a letter to be sent by 01/14/02.

#4 Provide PCN proposal (AMEC). No additional proposal needed per #3.

#5 Provide recommendation on how to handle remaining lifts for 1200 CY soil (Corps). Corps is evaluating options; this issue will not be resolved in the short term. Removed from punchlist. Tetra Tech to monitor soil piles when in staging area.

#7 Provide update on interview schedule for Witness #19 (IAGWSPO). Private investigator has attempted to contact Witness #19's attorney. Waiting on a response. Guard attorney will contact Textron attorney to discuss arranging an interview.

#9 Provide AirMag Workplan comments (EPA/DEP). Comments received from EPA on 01/07/02.

#10 Provide comments on Method 8270 SIM protocol (EPA/DEP). Comments received from EPA; awaiting Guard acceptance letter regarding procedure identified by EPA for future well sampling. SIM data okayed for prior well results. Procedure to be followed for well sampling but not profile sampling.

#14 Provide F&T Study Report by the University of Texas (Corps). Report being revised by UT, expect revised draft next week. Agencies to be forwarded a copy prior to distribution at January IART.

#15 Provide ASR witness summaries (Corps). Summaries to be provided shortly via email.

#16 Provide comments on HUTA2 Workplan (EPA/DEP). Verbal approval to proceed was provided by EPA. Several minor comments were discussed that will be documented in a letter to be sent out by next week. ACE to provide addendum to sampling plan for changes to sampling approach at Transect 2,3,4. Revised Workplan will incorporate changes documented in the comment letter.

#17 Provide written approval or MOR for MSP letter reports (EPA). EPA to provide feedback on figures with letter reports on 01/14/02. Will decide next week if letter approval can be substituted for MOR.

#18 Provide comment on Corps 12/12 email regarding SOWs and Workplans (EPA/DEP). Comments received from DEP. Verbal comment provided by EPA. Next step will be to review and approve project note by next week.

#19 Provide status of dye results for MW-114 and MW-31 (AMEC). Data to be provided next week. Corps agreed to provide periodic update of dye results with TIC summary update.

Munitions Survey Project Update

Rob Foti (Corps) provided an update on the MSP3 and HUTA tasks.

- **AirMag**. Received approval to continue on 1/08/02. Working on scheduling of fieldwork. EPA to be notified of areas that are suspected to be investigated in weekly updates.
- **HUTA2**. Transect 1 – All initial work is completed. Intrusive investigation of EM61 picks will be completed next week. Transect 2 – Verbal approval to continue work received earlier at Tech meeting. Sampling is next step at Site 2. Transect 3 – Verbal approval received to continue work. Surveyors are scheduled to complete the GPS survey of the transect on 1/14/02. Transect 4 –Surveyors are scheduled for 01/14/02. Transect 5 – Will be completed next week. 1 BIP scheduled for today 1/10 (one 81mm Mortar HE, M43 Series with an unknown Point Detonating Fuze). Site walk with Karen Wilson (IAGWSPO) scheduled for next week.
- **J Range Polygons**. Investigation completed at J-1 Range polygons except for burial sites and areas effected by Sandwich notification. Remaining areas include Polygons 9, 10, 14 and 15 on the J-1 Range. Next scheduled work is to complete investigation at J-1 Polygons 6-15 which are outside the Sandwich buffer zone and don't effect AMEC work. After completing these polygons, polygons within buffer zone will be addressed, then burials areas, and then J-3 Range Polygons. Last week areas for additional polygons were reviewed; working on SOW for these areas. J-2 Polygon 1, which was investigated this week will be on next Weekly Update. Updates include data collected at the end of the previous week.
- Tina Dolen (IAGWSPO) indicated that notification to Sandwich will be made regarding the J-2 Polygon sampling even though it is outside of the buffer zone, as a matter of courtesy.
- Press Release for J-1 Polygon 9 discoveries and notice that information on other burial area discoveries will follow, will be drafted for review prior to 1/17 Tech meeting.
- **Scar Site/U Range.** Completed scoping meeting on 1/09. Site walk scheduled with Karen Wilson tomorrow 1/11, for ROA approval.
- **BA-1 Disposal Site.** Investigation completed. Waiting on analytical results to backfill (expected next week). Excavated materials secure. No new information found regarding excavated materials.
- **SUMMARY of Action Items:**
  1) Corps to schedule HUTA2, AIRMAG, MSP tasks.
  2) Corps to notify Tina Dolen when J-2 Range Polygon work to commence.
  3) Tetra Tech to add J-2 Range Polygon 1 summary to next weekly update.
  4) Corps to expand grids for potential addition of polygons.

MW-181 Profile Sample

Heather Sullivan (ACE) reviewed status of information on the MW-181 profile sample.

- Total Uranium and alpha spectroscopy for the uranium series were analyzed. No detections above background were identified.
- Mike Jasinski (EPA) requested that a definition of what background means with references be provided.
- Approximately 1.5 liters of profile sample remains. AMEC recommends that the Severn Trent Vermont lab separate the liquid and solid fractions of the sample, transfer the volumes to the Severn Trent, St. Louis lab where the samples (water and solid) can be analyzed

separately for additional alpha emitters, such as Radium and Thorium (solid) and Radon and Radium (water). AMEC's proposal and Uranium alpha spectroscopy results to be forwarded by 1/14/02.
- Marc Grant (AMEC) to check with lab to see if quicker than 2 wk turn around time can be achieved so that sample results may be available for January IART presentation.
- Add item to Punchlist and next week's agenda.

Snake Pond Update

Heather Sullivan (ACE) provided an update on activities ongoing at Snake Pond.
- Explosives results (unvalidated) for drive point samples collected by the USGS beneath pond (all non detect) were included in biweekly explosives update.
- Perchlorate results are expected next week.
- Dave Williams (MDPH) requested that the Guard commit to collecting splits of surface water samples with MDPH during the recreational season. Ideally sampling should be initiated in April/May so that results can be obtained prior to the Memorial Day Weekend. Ben Gregson (IAGWSPO) agreed that the Guard would continue sampling during the recreational season.

Schedule and Documents

Marc Grant (AMEC) reviewed scheduling and document issues with the following highlights.

Documents Having Comments

June 2000 BIP Report **-** MOR was approved on 12/13/01.
TM 01-14 (Gun and Mortar Draft Final Report) – Todd Borci and Mike Jasinski to discuss MOR approval by next week.
MSP2 J-1 Vehicle Removal Letter Report – Final Report submitted 1/09/01.
CDC Test Results Report - Resolution Meeting to be rescheduled for 02/14/02.

Documents Needing Comments

TM 01-13 (Central Impact Area Soil Report) EPA comments expected to be sent next week.
HUTA1 Report EPA comments expected to be sent in 3 weeks.
Revised TM-10 (Demo 1 Soil Report) EPA waiting on perchlorate, PCN and dye results for soil. EPA/DEP comments expected to be sent end of next week. Delay in comment resolution likely to impact schedule for FS Screening Report.
Demo 1 Ecological Risk Assessment Workplan DEP comments received. EPA to determine whether to send letter of concurrence with DEP comments or separate comment letter.

Documents to be Submitted

Revised Gun and Mortar Workplan. EPA granted extension to 2/21/02.
ASR Meeting Minutes. Relating to ASR Scope of Work comments resolved during meeting. Corps to submit on 12/23/02

IART Map Strategies

Tina Dolen (IAGWSPO) reviewed actions taken by Guard in response to IART Team's comments to improve the IART maps.
- A new map has been developed (unveiled at December IART) to highlight new detections and monitoring wells each month. This map is tied in to the New Detects presentation and the IART Handout.
- IART maps provided at the table are proposed to be phased out in favor of the Monthly maps in response to the team's request not just to see a lot of detections and to reduce the glut of paper distributed at the meeting. The monthly maps take validated data and distinguish between detections above health advisories (red), below health advisories (yellow) and non detects (green). Todd Borci indicated that it would be good to include the unvalidated data. Marc Grant pointed out that the unvalidated data presented on the IART

maps was becoming less important as the historical database has grown larger with respect to new data coming in. In addition, historically, unvalidated data has not been segregated into above and below the health advisory because it is still "draft" data. Although the explosive data is PDA-confirmed and usually all eventually validated, unvalidated detections of other parameters (e.g. metals) are not as reliable. Consolidation of the Monthly and the IART maps will also enable the maps being distributed to the IART Team to be synonymous with the maps being distributed to the public, as the concentrations of the unvalidated data are not published officially. Unvalidated explosive detections, as they are received each month, will still be discussed in the Monthly Report and in the "New Detects" portion of the IART presentation.

- Todd Borci pointed out that an additional issue was removing the Phthalate detects from the SVOC map and the Chloroform detects from the VOC map. Elimination of these constituents will enable these maps to have more meaning, as these constituents are often lab contaminants. It was proposed that separate SVOC and Chloroform maps should be generated and distributed every 6 months to track any changes in these detections.
- Todd Borci also indicated that the data tables distributed at the IART meeting should only show the new months data (since the last meeting). Cumulative results can be presented either every 6 months or at the end of the year.
- More minor revisions that will be implemented include enlarging legends and scale bars on the maps, spelling the acronyms out.
- It had been proposed that areas of concern would also be added to the monthly maps with shading and labels. Discussion ensued on what areas should be added so that other more important information wouldn't be obscured on the map. There was general agreement that the major operable units should be labeled and shaded (Demo 1, SE Corner of the Ranges, and Central Impact Area) other less distinct operable units (Gun and Mortar Firing Positions, etc.) could be indicated by shading/colors. A base-wide range map, showing all the operable units or potential operable units (with all areas labeled) color coded to the Monthly maps could be distributed for use as a reference tool. This reference map would then be retained by the IART Team members for future use and comparison to the monthly maps.
- Todd Borci requested that in the Weekly and Monthly Updates New Detects be referred to as Recent Detects.
- IART agenda was set with a portion shown as follows:

630 pm	Late Breaking News
635 pm	Investigations Update (Recent Detects, SE Corner of the Ranges Excavation, Demo 1 Plume Delineation Strategy, MW-181)
735 pm	Thermal Neutron Analysis
750 pm	Break
800pm	IART Map Revisions

Central Impact Area Plume Delineation/Pump Test

Heather Sullivan reviewed location of proposed wells with new location map to obtain approval on the locations from EPA/DEP. The locations were resolved/approved as follows:

CIAP-11 – As previously proposed. Jane Dolan to review site with respect to J1P-1 location which it is close to; site visit on 1/16 or 1/17. AMEC to provide particle track map presented in J-1, J-3 L Range plan with CIAP-11 marked, for reference. Location approved by all parties.

CIAP-12 – Moved south onto particle track from MW-107. ROA to be resubmitted. Location approved by all parties.

CIAP-13 – Location eliminated.

CIAP-24 – Location to be moved to a point on the RDX 2-10 ppb contour line directly down from the center of the HUTA base line. Location, as moved, approved by all parties.

CIAP-16 – Location moved to particle track from MW-164. Location approved by all parties.

CIAP-23 – Location to be moved to Wood Rd between Five Corners and CIAP-16. Final location to be selected after results from CIAP-16 are collected.
CIAP-22 – Location to be placed on particle track to MW-113. Currently well located off of Wood Rd at intersection with the particle track. EPA would prefer a location off of MW-3 access road but only if it can be located along MW-113 particle track. Guard to review terrain to see if this is possible, if not EPA approves the current location as the 2nd best option. Location approved by all parties either way.
CIAP-21 – Location on particle track from MW-86. Location approved by all parties.
CIAP-14 – Location pending results from MW-185. HUTA exclusion zone Transect 5 is preventing development of this well. Well development will be coordinated by the Corps since Transect 5 work should be completed next week.
CIAP-20 – Location remains as originally proposed downgradient of MW-185. Location approved by all parties.
CIAP-18 – Location could only be moved 50 feet off road, not 100 feet as requested. Access to be double-checked with site visit.
CIAP-15 – Location previously approved by all agencies. Need final written confirmation that location is acceptable to Wampanoags.
New CIAP-13 – On Avery Road, final location will be based on results from CIAP-15.
CIAP-8 – Well is completed.
CIAP-10 – Well is currently being drilled.
CIAP-17 and CIAP-25 – Cross sections will be provided to assist in locating these wells to define the plume between Spruce Swamp and Burgoyne Roads. EPA suggested coming in from the back of the ranges near MW-123 to access this very dense area. Site visit scheduled for 1/24/02.
CIAP-19 – Location is pending Former A Range soil data. Site visit scheduled for 1/17 at 1pm.

- Ben Gregson (IAGWSPO) indicated that per his recent letter requesting a schedule extension, a new schedule would need to be developed for the Central Impact Area Groundwater FS, originally proposed to be submitted May 24, since wells will just be installed by May. Todd Borci requested that the Guard propose a new schedule.
- Len Pinaud (MADEP) pointed out that although the Groundwater Report had been finalized, plume delineation is not complete. In MADEP's opinion this was not the best way for the project to have proceeded. Mike Jasinski (EPA) suggested that all parties consider having an Addendum drafted for the Groundwater Report with the additional results and plume configuration, and have this draft Addedum submitted together with the Draft FS.
- Gina Tyo (ACE) to provide new schedule. Heather Sullivan (ACE) to provide project note outlining additional delineation activities based on proposed wells and stating that once these wells are completed, characterization of plume will be complete.
- Len Pinaud to review schedule to make sure MCP Phase 2 tasks (primarily Ecological Risk Assessment) are to be completed prior to completion of the FS. Following this review, Mr. Pinaud to provide approval of schedule/approach toward completion of the FS phase.
- Jay Clausen (AMEC) indicated that Penn State test data on use of GAC to treat perchlorate had been received. The data indicated that the amount of GAC to be used during pump test should have been more than adequate to remove perchlorate from effluent. Still awaiting receipt of Calgon data. Calgon also has data on an ion exchange resin for treating perchlorate, however it is not known if this technology can be used at the high flow rates proposed for the pump test. Once all data is received, Mr. Clausen to summarize and forward to agencies.
- If column studies are required, Mr. Clausen to discuss ability of Calgon to perform appropriate studies. If this can not be done by Calgon, AMEC could do field column study in March 2002.
- Because of HUTA exclusion zone, and need for 2.5-3 week window, pump test can probably

not be conducted before March 2002.
- Mike Jasinski set as a goal 01/31/02 as date for discussion of use of GAC alone for pump test effluent treatment.
- Fate and Transport Study should be received from Univ of Texas by 01/14 or 01/15. Copies to be provided 3 days prior to IART meeting to agencies. 30 copies for distribution at IART.

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 samples from MW-19S (Demo Area 1) had detections of TNT, 2A-DNT, 4A-DNT, RDX, HMX, MNX, DNX, and TNX that were confirmed by PDA spectra. The detections were similar to previous sampling rounds.

- Groundwater samples from MW-31S (Demo Area 1) had detections of TNT, 2,4-DNT, 2A-DNT, 4A-DNT, RDX, HMX, and MNX that were confirmed by PDA spectra. The detections were similar to previous sampling rounds.

- Groundwater samples from MW-31M (Demo Area 1) had detections of 2A-DNT and RDX that were confirmed by PDA spectra. The detections were similar to previous sampling rounds.

- Groundwater samples from MW-34M1 (Demo Area 1) and MW-78M2 (Demo Area 1) had detections of RDX that were confirmed by PDA spectra. The detections were similar to previous sampling rounds.

- Groundwater samples from MW-76M1, S (Demo Area 1) had detections of RDX, HMX, and MNX that were confirmed by PDA spectra. The detections were similar to previous sampling rounds.

- Groundwater samples from MW-77M2 (Demo Area 1) had detections of 4A-DNT, RDX, HMX, and MNX that were confirmed by PDA spectra. The detections were similar to previous sampling rounds.

- Groundwater profile samples from MW-194 (J3P-13) had detections of RDX (3 intervals), picric acid (2 intervals), bromochloromethane (1 interval), chloroform (4 intervals), and toluene (4 intervals). The detections of RDX were confirmed by PDA spectra. The detections of picric acid were not confirmed by PDA spectra, but with interference.

3. DELIVERABLES SUBMITTED

December 2001 Monthly Progress Report	01/10/02
Draft Post-Screening Investigation Work Plan Demo 1 Soil Operable Unit	01/10/02
Weekly Progress Update for December 31, 2001 – January 4, 2002	01/11/02

4. SCHEDULED ACTIONS

Complete Third Quarter 2001 Long Term Groundwater Monitoring. Well installation of MW-193 (J3P-12), MW-194 (J3P-13), MW-197 (J3P-11), and MW-198 (J3P-16) is scheduled for the next two weeks. Continue drilling of MW-201 (CIAP-10). Commence well development of newly installed Central Impact Area and J Range wells. Commence soil sampling of J-3 Range polygons.

5. SUMMARY OF ACTIVITIES FOR DEMO 1

Discussions are ongoing regarding the approach to finalize the Groundwater Feasibility Study. Six additional monitoring well locations have been scoped by the Guard and approved by the agencies for delineation of the groundwater plume. A comment resolution meeting for EPA and MADEP comments on the Draft Feasibility Study for the Groundwater Operable Unit was conducted on January 10, 2002. The Draft Post-Screening Investigation Work Plan for the Demo 1 Soil Operable Unit was submitted on January 9, 2002 and includes additional surface soil sampling and investigation of geophysical anomalies.

TABLE 2
SAMPLING PROGRESS
01/05/2002 - 01/11/2002

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
27MW0011DE	FIELDQC	01/10/2002	FIELDQC	0	0		
27MW0015CE	FIELDQC	01/07/2002	FIELDQC	0	0		
27MW2083E	FIELDQC	01/11/2002	FIELDQC	0	0		
G194DBT	FIELDQC	01/07/2002	FIELDQC	0	0		
G194DCT	FIELDQC	01/08/2002	FIELDQC	0	0		
HDJ3200001RPEE	FIELDQC	01/10/2002	FIELDQC	0	0		
USGSDLOGE	FIELDQC	01/09/2002	FIELDQC	0	0		
USGSDLOGT	FIELDQC	01/09/2002	FIELDQC	0	0		
W35SSF	FIELDQC	01/11/2002	FIELDQC	0	0		
W35SST	FIELDQC	01/11/2002	FIELDQC	0	0		
03MW0707	03MW0707	01/08/2002	GROUNDWATER	0	80	4.00	14.00
27MW00108A	27MW00108A	01/09/2002	GROUNDWATER	222	227	80.60	85.60
27MW0011C	27MW0011C	01/10/2002	GROUNDWATER	114	119	24.80	29.80
27MW0011D	27MW0011D	01/10/2002	GROUNDWATER	105	111	16.60	22.60
27MW0015A	27MW0015A	01/07/2002	GROUNDWATER	129	134	0.00	10.00
27MW0015C	27MW0015C	01/07/2002	GROUNDWATER	68	78	52.20	57.20
27MW0016B	27MW0016B	01/09/2002	GROUNDWATER	100	105	27.70	32.70
27MW0016C	27MW0016C	01/09/2002	GROUNDWATER	78	83	6.30	11.30
27MW0017A	27MW0017A	01/08/2002	GROUNDWATER	134	139	65.00	70.00
27MW0017B	27MW0017B	01/09/2002	GROUNDWATER	104	109	21.00	26.00
27MW0017E	27MW0017E	01/08/2002	GROUNDWATER	0	0		
27MW0705	27MW0705	01/08/2002	GROUNDWATER	74	84	0.00	0.00
27MW2061	27MW2061	01/09/2002	GROUNDWATER	66	76	0.00	2.30
27MW2061E	27MW2061E	01/09/2002	GROUNDWATER	0	0		
27MW2071	27MW2071	01/08/2002	GROUNDWATER	72	82	0.00	3.00
27MW2082	27MW2082	01/10/2002	GROUNDWATER	131	136	49.60	54.60
27MW2083	27MW2083	01/11/2002	GROUNDWATER	123	128	42.40	47.40
27MW2084	27MW2084	01/10/2002	GROUNDWATER	133	138	47.40	52.40
27MW2085	27MW2085	01/10/2002	GROUNDWATER	152	157	53.30	58.30
58MW0001	58MW0001	01/11/2002	GROUNDWATER	121	126	3.60	8.60
58MW0007B	58MW0007B	01/11/2002	GROUNDWATER	187	192	49.00	54.00
90WT0013	90WT0013	01/11/2002	GROUNDWATER	92	102	0.00	10.00
BHW215083B	BHW215083B	01/11/2002	GROUNDWATER	0	65	16.95	26.95
W01SSA	MW-1	01/10/2002	GROUNDWATER	114	124	1.00	10.00
W07M2A	MW-7	01/10/2002	GROUNDWATER	170	175	65.00	70.00
W165M2A	MW-165	01/07/2002	GROUNDWATER	124	134	46.00	56.00
W182M1A	MW-182	01/09/2002	GROUNDWATER	295	305	124.00	134.00
W52SSA	MW-52	01/09/2002	GROUNDWATER	150	160	0.00	10.00
W73SSA	MW-73	01/11/2002	GROUNDWATER	38	48	1.00	10.00
W75M2A	MW-75	01/07/2002	GROUNDWATER	115	125	34.00	44.00
W76M2A	MW-76	01/07/2002	GROUNDWATER	105	115	38.00	48.00
W94M1A	MW-94	01/08/2002	GROUNDWATER	160	170	36.00	46.00
W94M1D	MW-94	01/08/2002	GROUNDWATER	160	170	36.00	46.00

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
01/05/2002 - 01/11/2002

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
W94M2A	MW-94	01/08/2002	GROUNDWATER	140	150	16.00	26.00
W94SSA	MW-94	01/07/2002	GROUNDWATER	124	134	0.00	10.00
G194DAA	MW-194	01/07/2002	PROFILE	57	60	0.00	10.00
G194DBA	MW-194	01/07/2002	PROFILE	60	70	8.00	13.00
G194DBD	MW-194	01/07/2002	PROFILE	65	70	8.00	13.00
G194DCA	MW-194	01/08/2002	PROFILE	75	80	18.00	23.00
G194DDA	MW-194	01/08/2002	PROFILE	85	90	28.00	33.00
G194DDD	MW-194	01/08/2002	PROFILE	85	90	28.00	33.00
G194DEA	MW-194	01/08/2002	PROFILE	88	93	31.00	36.00
HDJ3200001RPE1	3200003RPE	01/10/2002	SOIL GRID	0	0.25		
HDJ3200001RPE2	3200003RPE	01/10/2002	SOIL GRID	0	0.25		
HDJ3200001RPE3	3200003RPE	01/10/2002	SOIL GRID	0	0.25		
HDJ3200003RPE1	3200003RPE	01/10/2002	SOIL GRID	0	0.25		
HDJ3200003RPE2	3200003RPE	01/10/2002	SOIL GRID	0	0.25		
HDJ3200003RPE3	3200003RPE	01/10/2002	SOIL GRID	0	0.25		
T1.E.0P.001.1.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.2.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.3.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.4.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.5.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.6.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.7.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.8.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.E.0P.001.9.0	Transect 1 Target 1	01/09/2002	SOIL GRID	0.00	0.25		
T1.I.0Z.120.1.0	T1.0Z.120.O	01/11/2002	CRATER GRID	1.50	1.75		
T1.I.0Z.120.1.D	T1.0Z.120.O	01/11/2002	CRATER GRID	1.50	1.75		
T5.A.0S.015.1.0	T5.0S.015.R	01/10/2002	CRATER GRID	2.50	2.75		
T5.A.0S.015.2.0	T5.0S.015.R	01/10/2002	CRATER GRID	2.50	2.75		
T5.A.0S.015.3.0	T5.0S.015.R	01/10/2002	CRATER GRID	2.50	2.75		
T5.E.0S.001.1.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.1.D	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.2.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.3.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.4.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.5.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.6.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.7.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.8.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.0S.001.9.0	Transect 5 Target 1	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.1.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.2.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.3.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.4.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.5.0	Transect 5 Target 2	01/10/2002	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
01/05/2002 - 01/11/2002

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
T5.E.AA.001.6.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.7.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.8.0	Transect 5 Target 2	01/10/2002	SOIL GRID	0.00	0.25		
T5.E.AA.001.9.0	Transect 5 Target 2	01/10/2002	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 01/05/02 - 01/12/02

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	2,4,6-TRINITROTOLUENE	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	2-AMINO-4,6-DINITROTOLUENE	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	4-AMINO-2,6-DINITROTOLUENE	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	HEXAHYDRO-1,3,5-TRINITROSO	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	HEXAHYDRO-1,3-DINITROSO-5-I	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	HEXAHYDRO-1-MONONITROSO-	YES
W19SSA	MW-19	12/27/2001	GROUNDWATER	38.00	48.00	0.00	10.00	8330NX	OCTAHYDRO-1,3,5,7-TETRANITR	YES
W31MMA	MW-31	01/04/2002	GROUNDWATER	113.00	123.00	28.00	38.00	8330NX	2-AMINO-4,6-DINITROTOLUENE	YES
W31MMA	MW-31	01/04/2002	GROUNDWATER	113.00	123.00	28.00	38.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	2,4,6-TRINITROTOLUENE	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	2,4-DINITROTOLUENE	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	2-AMINO-4,6-DINITROTOLUENE	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	4-AMINO-2,6-DINITROTOLUENE	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	HEXAHYDRO-1-MONONITROSO-	YES
W31SSA	MW-31	01/04/2002	GROUNDWATER	98.00	103.00	13.00	18.00	8330NX	OCTAHYDRO-1,3,5,7-TETRANITR	YES
W34M1A	MW-34	12/26/2001	GROUNDWATER	151.00	161.00	73.00	83.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76M1A	MW-76	12/28/2001	GROUNDWATER	125.00	135.00	58.00	68.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76M1A	MW-76	12/28/2001	GROUNDWATER	125.00	135.00	58.00	68.00	8330NX	HEXAHYDRO-1-MONONITROSO-	YES
W76M1A	MW-76	12/28/2001	GROUNDWATER	125.00	135.00	58.00	68.00	8330NX	OCTAHYDRO-1,3,5,7-TETRANITR	YES
W76SSA	MW-76	12/28/2001	GROUNDWATER	85.00	95.00	18.00	28.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76SSA	MW-76	12/28/2001	GROUNDWATER	85.00	95.00	18.00	28.00	8330NX	HEXAHYDRO-1-MONONITROSO-	YES
W76SSA	MW-76	12/28/2001	GROUNDWATER	85.00	95.00	18.00	28.00	8330NX	OCTAHYDRO-1,3,5,7-TETRANITR	YES
W77M2A	MW-77	12/26/2001	GROUNDWATER	120.00	130.00	38.00	48.00	8330NX	4-AMINO-2,6-DINITROTOLUENE	YES
W77M2A	MW-77	12/26/2001	GROUNDWATER	120.00	130.00	38.00	48.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W77M2A	MW-77	12/26/2001	GROUNDWATER	120.00	130.00	38.00	48.00	8330NX	HEXAHYDRO-1-MONONITROSO-	YES
W77M2A	MW-77	12/26/2001	GROUNDWATER	120.00	130.00	38.00	48.00	8330NX	OCTAHYDRO-1,3,5,7-TETRANITR	YES
W78M2A	MW-78	12/28/2001	GROUNDWATER	115.00	125.00	38.00	48.00	8330NX	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
G194DAA	MW-194	01/07/2002	PROFILE	57.00	60.00	0.00	10.00	8330N	PICRIC ACID	NO*
G194DAA	MW-194	01/07/2002	PROFILE	57.00	60.00	0.00	10.00	OC21V	CHLOROFORM	

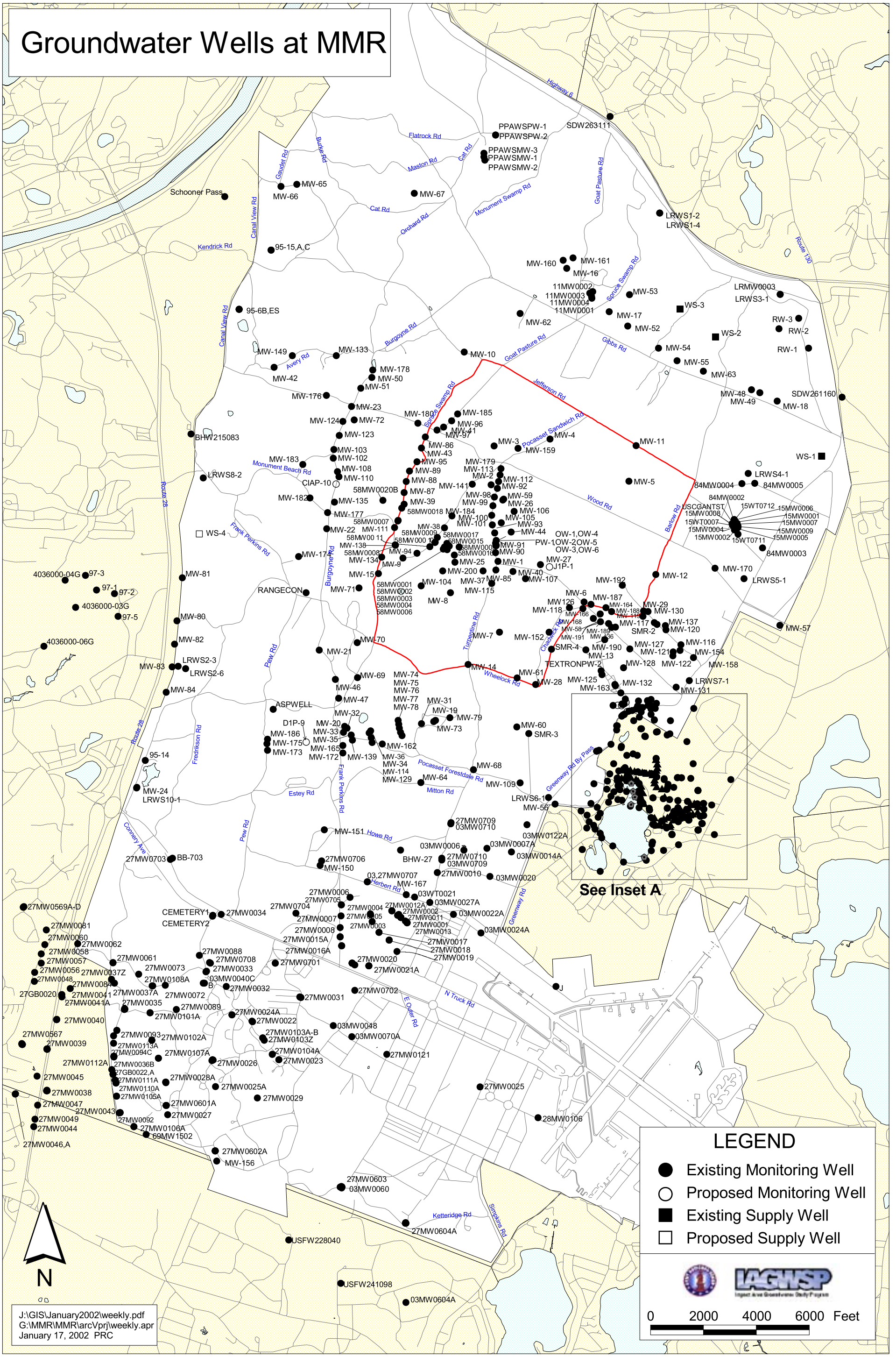
DATA REPORTED REFLECT CURRENT DATABASE FOR SAMPLES COLLECTED IN SPECIFIED TIMEFRAME. NOT ALL RESULTS ARE COMPLETE.
SBD = SAMPLE COLLECTION BEGIN DEPTH IN FEET BGS
SED = SAMPLE COLLECTION END DEPTH IN FEET BGS
BWTS = DEPTH BELOW WATER TABLE, START DEPTH, MEASURED IN FEET
BWTE = DEPTH BELOW WATER TABLE, END DEPTH, MEASURED IN FEET
PDA/YES = Photo Diode Array, Detect Confirmed
PDA/NO = Photo Diode Array, Detect Not Confirmed
* = Interference in sample

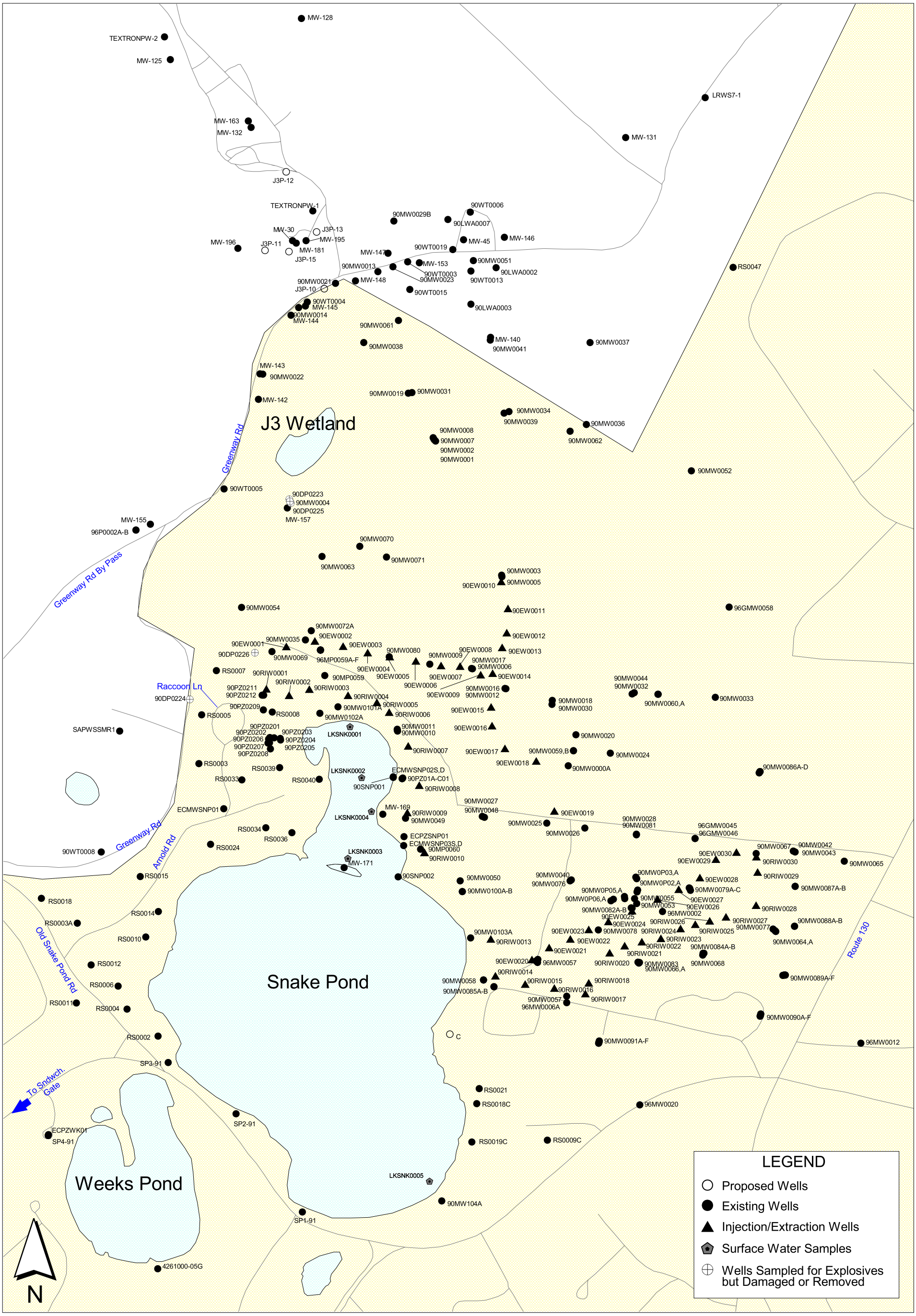
TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 01/05/02 - 01/12/02

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
G194DAA	MW-194	01/07/2002	PROFILE	57.00	60.00	0.00	10.00	OC21V	TOLUENE	
G194DBA	MW-194	01/07/2002	PROFILE	60.00	70.00	8.00	13.00	OC21V	CHLOROFORM	
G194DBA	MW-194	01/07/2002	PROFILE	60.00	70.00	8.00	13.00	OC21V	TOLUENE	
G194DBD	MW-194	01/07/2002	PROFILE	65.00	70.00	8.00	13.00	8330N	PICRIC ACID	NO*
G194DBD	MW-194	01/07/2002	PROFILE	65.00	70.00	8.00	13.00	OC21V	CHLOROFORM	
G194DBD	MW-194	01/07/2002	PROFILE	65.00	70.00	8.00	13.00	OC21V	TOLUENE	
G194DCA	MW-194	01/08/2002	PROFILE	75.00	80.00	18.00	23.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
G194DCA	MW-194	01/08/2002	PROFILE	75.00	80.00	18.00	23.00	OC21V	CHLOROFORM	
G194DCA	MW-194	01/08/2002	PROFILE	75.00	80.00	18.00	23.00	OC21V	TOLUENE	
G194DDA	MW-194	01/08/2002	PROFILE	85.00	90.00	28.00	33.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
G194DDA	MW-194	01/08/2002	PROFILE	85.00	90.00	28.00	33.00	OC21V	CHLOROFORM	
G194DDA	MW-194	01/08/2002	PROFILE	85.00	90.00	28.00	33.00	OC21V	TOLUENE	
G194DDD	MW-194	01/08/2002	PROFILE	85.00	90.00	28.00	33.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
G194DDD	MW-194	01/08/2002	PROFILE	85.00	90.00	28.00	33.00	OC21V	BROMOCHLOROMETHANE	
G194DDD	MW-194	01/08/2002	PROFILE	85.00	90.00	28.00	33.00	OC21V	TOLUENE	
G194DEA	MW-194	01/08/2002	PROFILE	88.00	93.00	31.00	36.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	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
* = Interference in sample

Groundwater Wells at MMR





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