WEEKLY PROGRESS UPDATE
FOR MAY 14 – MAY 18, 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 May 14 to May 18, 2001.

1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of May 18 is summarized in Table 1.

Table 1. Drilling progress as of May 18, 2001

Boring Number	Purpose of Boring/Well	Total Depth (ft bgs)	Saturated Depth (ft bwt)	Completed Well Screens (ft bgs)
MW-169	Snake Pond well (SP-1)	159	156	114-119 154-159
MW-170	Former K Range well (KP-1)	344	236	
MW-171	Snake Pond well (SP-2)	149	146	

Bgs = below ground surface
Bwt = below water table

Completed installation of MW-169 (SP-1) and completed drilling of MW-170 (KP-1). Commenced drilling MW-171 (SP-2). Continued development of newly installed wells.

Samples collected during the reporting period are summarized in Table 2. Groundwater profile samples were collected for MW-170 and MW-171. A sample was collected of a liquid encountered at 270 feet in MW-170. Samples of transmission and hydraulic fluid used on the rig that was drilling MW-170 were also collected. Groundwater samples were collected for 2001 Long Term Monitoring, Demo 1 Response wells and first round of newly installed wells. Split samples were collected of drive point samples in Snake Pond. Water samples were collected from the GAC system. Soil samples were collected at the J-3 Range former Flammable Storage Shed area. A water sample was collected from the septic tank at the J-3 Range X-Ray building. Soil samples were collected of residual cuttings at the newly installed well locations. Samples of orange filler material were collected from two 155mm rounds. Pre- and post-detonation soil samples were collected in Test Pit 5. As part of the HUTA investigation, soil and wipe samples were collected from debris in Test Pit 3, 5 and 6. Soil and wipe samples were also collected from UXO and UXORM in Test Pit 5. Soil samples were also collected in the Test Pit 5 area and from soil beneath a UXO item.

The Guard, EPA, and MADEP had a meeting on May 17 to discuss technical issues, including the following:

<u>CS-18 and CS-19 Updates</u>
Dave Del Marco (Jacobs) and Ken Gaynor (Jacobs) presented an update on CS-18 and CS-19 (respectively), distributing a six-page handout.

- At CS-18, groundwater sampling of the seven site wells will be completed next Tuesday, 5/22. A particle backtrack from well 16MW0005 will be completed following survey of the well location next week.

- Trench excavation Plan for CS-19 was presented. Handout showed 3D picture of trench excavation plan and transverse cross-section for 40 ft trench. Trench is divided into four Segments. Five, 2 ft lifts (A-E) will be excavated at a 1/1.5 slope. Two 40 ft long trenches and one 100 ft long trench will be excavated.
- Particle tracks that were developed to select additional well locations to define the CS-19 plume (downgradient edge of concentrations in excess of HA) were presented. Forward particle tracks were shown for AFCEE wells 58MW0011D, 58MW0002, 58MW0018 and Guard wells MW-85, MW-111M3, MW-108M4, MW-39M3. Backward particle tracks were shown for MW-135M3, MW-108M4, MW-110, and MW-102. CS-19 plume appears to be bounded downgradient by wells on the south (MW-111M3) and north (MW-39M2). The particle tracks indicate that the plume is tracking northwest. Other detections downgradient and located further north and south do not backtrack to the CS-19 source area. A monitor well location to define the downgradient edge of the CS-19 plume was proposed approximately 500 ft north of Monument Beach Rd and 700 ft west of Spruce Swamp Rd in a wooded area between Spruce Swamp and Frank Perkins Roads.
- Mike Jasinski (EPA) requested a PDF file of the particle track cross-sections. Mr. Gaynor to email.
- Received agency concurrence on trenching soil testing and IDM plan at 5/16 IRP Tech meeting. Trench excavation to commence on 6/4.
- Received agency concurrence on proposed CS-19 well location at 5/16 IRP Tech meeting.
- Preliminary analytical results for puddle water sample were non-detect for explosives, pesticides and herbicides.

Munitions Survey Update

Larry Hudgins (Tetra Tech) presented the update on the Munitions Survey. A one-page handout was distributed.

- Since last week, additional work was completed at HUTA Test Pit #3, Test Pit #5, and Test Pit #6. In Test Pit #3 hand excavation of anomalies continues. In Test Pit #5, surface UXO/UXORM items are being removed. In Test Pit #6, Lift 2A excavation was completed. Excavation of Lift 2B will probably be completed next Wednesday 5/23. Although work is completed at Test Pit #4, Tetra Tech is awaiting analytical results prior to backfilling. Anticipating completion of HUTA-1 by 9/1. Todd Borci (EPA) indicated that EPA had sent out letter yesterday requesting that a completion date be set by 6/21.
- J-1 Range ground geophysical data will be presented 5/30. J-3 Range data will be presented 6/15.
- EPA presented Tetra Tech with a list of 54 Air Mag targets that they would like to see included in the initial ground-truthing effort. Tetra Tech to provide a list of secondary targets for potential ground-truthing next week, using criteria defined by Mr. Borci at the 5/10 Tech meeting.
- A draft Tech Memo summarizing the DU data will be presented to ACE in late May. Jane Dolan (EPA) indicated that the press release should be released after submission and agency review of the DU Tech Memo, probably late June.

Water Supply Study Update

LTC Bleakley provided an update on the Water Supply Study.

- The location of the 37mm round was specified in the UXO discovery report by the intersection of two roads. The round was determined to be solid, no explosive component. The disposition of .50 cal bullets was not known.
- The Permit had been approved by the State and the approval was reported to be “in the mail”.
- Mike Jasinski (EPA) relayed that Dick Judge (Sandwich Selectmen) has requested that

community input be solicited on the color of water tower.

Rapid Response Action Update

Ben Gregson (IAGWSPO) provided an update on the RRA.

- Guard is finalizing the contracting of soil removal and additional delineation activities for Mortar Target 9. REC approval has been received.
- Guard will send a letter requesting extension for June 1st soil excavation deadline for Mortar Target 9. Todd Borci (EPA) indicated that approval of the extension request was likely. Letter addendum to FSP will probably be sent out next week.

Groundwater Study

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

- Installation of monitor well MW-169 (SP-1) was completed this week. Drilling of MW-170 (KP-1) and MW-171 (SP-2) commenced this week. Next week, will complete well installation of MW-170 and MW-171 and commence drilling of D1P-5 pending receipt of perchlorate data from MW-162. Well screen selections for MW-170 on Monday (5/21) and MW-171 on Tuesday (5/22).
- May LTM groundwater sampling round and sampling of newly installed J Range and Demo 1 wells continued this week. Sampling of LTM round and newly installed J Range wells will continue next week.
- Jane Dolan (EPA) indicated that during a site visit to Arnold Road, it appeared as if PZ208 and PZ204 are located on the same property - the weekly map appears to show the wrong locations. It was suggested that the GPS coordinates of the piezometers be verified. Heather Sullivan (ACE) indicated that the real estate property maps will be reviewed to determine which properties these wells are on. AFCEE has indicated that a fallen tree presents a safety issue for Jacobs near the PZ208 location, preventing sampling. Dave Hill (IAGWSPO) indicated that casual observation suggests that there is damage to PZ211. Mr. Hill to follow up with AFCEE to check on PZ211.
- Mike Jasinski (EPA)/ Dave Williams (MADPH) indicated that Dave Mason (Sandwich Health Dept) will be sampling the public and Camp Good News beaches of Snake Pond next week and then monthly during the season. Ben Gregson (IAGWSPO) indicated that it was the Guard's intent to collect "splits" (samples at identical location at the same time) of the first set of samples to analyze for explosives and perchlorate and then assess whether continued sampling is warranted.
- Marc Grant (AMEC) indicated that splits had been collected of AFCEE/Jacobs' drive point sampling at Snake Pond (90SNP-1 and 90SNP-2) to be analyzed for explosives and perchlorate.
- No soil sampling and UXO avoidance was conducted this week and none is planned for next week.
- No vegetation removal was conducted this week; vegetation removal for D1P-5 (2,124 sq ft) is scheduled for next week.
- Reconnaissance for REC preparation for the three Central Impact Area wells, D1P-6 and UXO detonation crater excavation will be conducted tomorrow, 5/18.
- There were no new groundwater detects this week.
- Jane Dolan (EPA) inquired about sampling schedule of MW-58 (J-1 Range, steel-lined pit well) and FS-12 Response wells. MW-58 is on the LTM schedule to be sampled in May and on the continuing LTM schedule. Jay Clausen (AMEC) indicated that FS-12 response wells are only proposed to be sampled one time. Once PZ208 and PZ211 are sampled, the analytical results will be reviewed and EPA can expect a proposal/discussion at that time presenting results and further sampling schedule.

- In response to Mr. Rice's inquiry regarding selecting a SAR well location, Todd Borci (EPA) indicated that his intent was to review the SAR soil data by Monday 5/21. A proposed well location to initiate REC process could probably be discussed 5/21.
- Mr. Rice briefly gave a brief overview of Phase IIb soil data. There were several explosive detections in soil at Old A Range. At Demo 2, there were RDX detections at all three depths in the soil grid located at MW-16 where C-4 had been found on the ground. Explosives were all ND for soil grids at Inactive Demo and the former ASP.
- Mr. Borci expressed concern that the right areas at the Old B Range had not been sampled. Mr. Rice explained that the correct grids had been sampled as selected by Mr. Borci and Ben Rice (AMEC) during the FSP reconnaissance for Phase IIb. However, the grid locations had been improperly located on the figure in the SAR FSP and these locations were adjusted in the figure presented in the 4/19 Corrections to Phase IIb FSPs letter.

Document /Schedule Status Update

Marc Grant (AMEC) provided the update on document and schedule status, distributing a one-page table, 3-month Lookahead schedule, and a table outlining the scheduling issues. Highlights of the document/schedule status were reviewed as follows:

- Documents Having Comments. A revised MOR for J-2 Additional Delineation Work Plan will be sent out today 5/17 or tomorrow 5/18. TM 01-8 J-2 Range Interim Data Report will not be issued as a Final Report per the 5/9 MOR. A letter requesting that the enforceable deadline for this document be deleted will be drafted and sent to EPA.
- Documents Needing Comments. RRA Delineation Sampling Report has been added to the list. Dates for comment and approval will be added to the table after conferring with Scott Veenstra (AMEC).
- A Disapproval with Conditions letter was received from EPA regarding the Supplemental Background Workplan. Todd Borci (EPA) confirmed that per the terms of the Order, this means that the Plan is modified as stated in the letter and that the Guard is not required to redraft and submit a modified version of the Plan for review and approval. It was not known if Don Muldoon (MADEP) had reviewed this document.
- Documents to be Submitted. Gun/Mortar Establish COC document is being deleted from the required document list. The COC information will be included with the Draft Report currently due 8/20. A letter will be sent to the agencies requesting that the Draft report deadline be set approximately three weeks earlier reflecting the time savings gained by eliminating the requirement to review and approve the COC document.
- As discussed previously, an extension request for completing the RRA source control at Mortar Target 9 will be sent out today. The request asks that the June 1st deadline be suspended allowing for the complete delineation of constituents prior to excavating any soil. Mr. Borci asked the Guard to propose a realistic date that this work can be completed, rather than leaving the date open and following-up with a second deadline request. A second extension request can be made further along in the process if conditions warrant.

A discussion on the Draft Scope of Work for the Munitions Survey Project followed the Tech meeting.

The IART dry run was scheduled for 11:00am.

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 collected from 90MW0022, MW-1M2, MW-2M2, MW-25S, MW-27S, MW-34M1, MW-34M2, MW-37M2, MW-38M3, MW-43M2, MW-75M2, MW-112M1, MW-112M2, and MW-141M2 had detections of RDX that were verified by PDA spectra. RDX was detected in previous samples collected from these wells in similar concentrations.

- Groundwater samples collected from MW-37M3 had a detection of RDX that was verified by PDA spectra. Although RDX has been detected in previous samples collected from this well, this is the first detection in a concentration below the health advisory.

- Groundwater samples collected from MW-78M2 had a detection of RDX that was verified by PDA spectra. This is the first time RDX has been detected in this well.

- Groundwater samples collected from MW-76S had a detection of RDX that was verified by PDA spectra. RDX was detected in previous samples collected from this well in similar concentrations. However, this was the first time HMX was not detected in samples collected from this well.

- Groundwater samples collected from MW-157M2 and MW-157M3 had detections of RDX that were verified by PDA spectra. This is the first time these wells have been sampled. In profile samples, RDX was detected at a higher concentration in MW-157M3, but was not detected in MW-157M2.

- Groundwater samples collected from MW-76M2 and MW-113M2 had detections of RDX and HMX that were verified by PDA spectra. RDX and HMX were detected in previous samples collected from these wells in similar concentrations.

- Groundwater samples collected from MW-76M1 had detections of RDX and HMX that were verified by PDA spectra. RDX and HMX were detected in previous samples collected from this well. While the HMX was detected in similar concentrations in previous samples, the RDX was detected in a concentration an order of magnitude higher than previous detections.
- Groundwater samples collected from MW-165M2 had detections of RDX and HMX that were verified by PDA spectra. This is the first time this well has been sampled. RDX and HMX were detected in the profile samples from this well in similar concentrations.

- Groundwater samples collected from MW-39M2 had a detection of HMX that was verified by PDA spectra. HMX had been detected in previous samples collected from this well in similar concentrations.

- Groundwater samples collected from MW-31S had detections of TNT, 2,4-DNT, 2A-DNT, 4A-DNT, RDX, and HMX that were verified by PDA spectra. These explosive compounds were detected in previous samples collected from this well in similar concentrations.

- Groundwater samples collected from MW-77M2 had detections of 4A-DNT, RDX and HMX that were verified by PDA spectra. Although 4A-DNT was detected in similar concentrations in previous samples collected from this well, RDX and HMX were detected in concentrations approximately half as much as in the previous sampling round.

- Groundwater samples collected from 90WT0019 had detections of trinitrobenzene; dinitrobenzene; TNT; 2,6-diamino-4-nitotoluene; 2-, 3-, and 4-nitrotoluene; nitroglycerin; picric acid; and tetryl. None of these explosive compounds were verified by PDA spectra and have not been validated detects in previous samples collected from this well.

- Groundwater samples collected from MW-141S had a detection of TNT that was verified by PDA spectra. TNT has been detected in previous samples collected from this well in similar concentrations.

- Groundwater samples collected from MW-30S had a detection of TNT that was not verified by PDA spectra. Detections of HMX have been verified in previous samples collected from this well.

3. DELIVERABLES SUBMITTED

Weekly Progress Update, April 30 – May 4, 2001	5/14/01
HUTA-1 Interim Report	5/18/01

4. SCHEDULED ACTIONS

Scheduled actions for the week of May 21 include well installation of MW-170 (KP-1) and MW-171 (SP-2), commence drilling of D1P-5, continue development and sampling of newly installed wells, and continue sampling Long Term Groundwater Monitoring 2001.

5. SUMMARY OF ACTIVITIES FOR DEMO 1

The Draft Soil Report is being prepared. Two additional downgradient well locations, D1P-5 and D1P-6, have been proposed and approved. Analysis of second round groundwater samples from newly installed wells is ongoing.

TABLE 2
SAMPLING PROGRESS
5/12/2001-5/18/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
5.A.1.00749.1.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.10.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.2.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.3.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.4.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.5.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.6.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.7.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.8.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.A.1.00749.9.0	A.1.00749.R	05/18/2001	CRATER GRID	1.25	1.50		
5.B.1.00750.4.0	B.1.00750.O	05/16/2001	CRATER GRID	1.25	1.50		
5.B.1.00750.5.0	B.1.00750.O	05/16/2001	CRATER GRID	1.25	1.50		
0.G.0.00085.0.T	Trip Blank 85	05/18/2001	FIELDQC				
90LWA0007E	FIELDQC	05/15/2001	FIELDQC	0.00	0.00		
90MW0003E	FIELDQC	05/16/2001	FIELDQC	0.00	0.00		
90MW0034E	FIELDQC	05/17/2001	FIELDQC	0.00	0.00		
90WT0005E	FIELDQC	05/13/2001	FIELDQC	0.00	0.00		
G170DAE	FIELDQC	05/14/2001	FIELDQC	0.00	0.00		
G170DBE	FIELDQC	05/15/2001	FIELDQC	0.00	0.00		
G170DHE	FIELDQC	05/16/2001	FIELDQC	0.00	0.00		
G170DSE	FIELDQC	05/17/2001	FIELDQC	0.00	0.00		
G170DVE	FIELDQC	05/18/2001	FIELDQC	0.00	0.00		
HD102W1AAE	FIELDQC	05/18/2001	FIELDQC	0.00	0.00		
SC16301E	FIELDQC	05/15/2001	FIELDQC	0.00	0.00		
W13DDT	FIELDQC	05/18/2001	FIELDQC	0.00	0.00		
W31SST	FIELDQC	05/17/2001	FIELDQC	0.00	0.00		
W50M2T	FIELDQC	05/14/2001	FIELDQC	0.00	0.00		
W76M2T	FIELDQC	05/16/2001	FIELDQC	0.00	0.00		
FILLER 1	FILLER 1	05/14/2001	FILLER				
FILLER 2	FILLER 2	05/14/2001	FILLER				
3.D.1.00785.2.0	D.1.00785.O	05/18/2001	GAUZE WIPE	1.50	1.75		
3.D.1.00785.3.0	D.1.00785.O	05/18/2001	GAUZE WIPE	1.50	1.75		
5.B.1.00750.2.0	B.1.00750.O	05/16/2001	GAUZE WIPE	1.25	1.50		
5.B.1.00750.3.0	B.1.00750.O	05/16/2001	GAUZE WIPE	1.25	1.50		
5.C.1.00746.2.0	C.1.00746.O	05/17/2001	GAUZE WIPE	0.25	0.50		
5.C.1.00746.3.0	C.1.00746.O	05/17/2001	GAUZE WIPE	0.25	0.50		
5.C.1.00748.2.0	C.1.00748.O	05/17/2001	GAUZE WIPE	0.50	1.00		
5.C.1.00748.3.0	C.1.00748.O	05/17/2001	GAUZE WIPE	0.50	1.00		
5.C.1.00751.2.0	C.1.00751.O	05/17/2001	GAUZE WIPE	0.25	0.50		
5.C.1.00751.3.0	C.1.00751.O	05/17/2001	GAUZE WIPE	0.25	0.50		
5.C.1.00752.2.0	C.1.00752.O	05/17/2001	GAUZE WIPE	0.00	0.25		
5.C.1.00752.3.0	C.1.00752.O	05/17/2001	GAUZE WIPE	0.00	0.25		
5.C.1.00753.2.0	C.1.00753.O	05/16/2001	GAUZE WIPE	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
5/12/2001-5/18/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
5.C.1.00753.3.0	C.1.00753.O	05/16/2001	GAUZE WIPE	0.00	0.25		
5.D.1.00747.2.0	D.1.00747.O	05/17/2001	GAUZE WIPE	0.25	0.50		
5.D.1.00747.3.0	D.1.00747.O	05/17/2001	GAUZE WIPE	0.25	0.50		
6.D.1.00742.2.0	D.1.00742.O	05/16/2001	GAUZE WIPE	2.00	2.25		
6.D.1.00742.3.0	D.1.00742.O	05/16/2001	GAUZE WIPE	2.00	2.25		
6.D.1.00745.2.0	D.1.00745.O	05/16/2001	GAUZE WIPE	1.75	2.00		
6.D.1.00745.3.0	D.1.00745.O	05/16/2001	GAUZE WIPE	1.75	2.00		
6.D.1.00774.2.0	D.1.00774.O	05/16/2001	GAUZE WIPE	0.50	0.75		
6.D.1.00774.3.0	D.1.00774.O	05/16/2001	GAUZE WIPE	0.50	0.75		
90LWA0007	90LWA0007	05/15/2001	GROUNDWATER	92.00	102.00	0.00	10.00
90MW0003	90MW0003	05/16/2001	GROUNDWATER	144.00	149.00	52.11	57.11
90MW0034	90MW0034	05/17/2001	GROUNDWATER	94.00	99.00	28.57	33.57
90MW0054	90MW0054	05/17/2001	GROUNDWATER	107.00	112.00	91.17	96.17
90MW0063	90MW0063	05/17/2001	GROUNDWATER	50.00	55.00	32.07	37.07
90MW0070	90MW0070	05/16/2001	GROUNDWATER	132.50	137.50	75.80	80.80
90MW0070D	90MW0070	05/16/2001	GROUNDWATER	132.50	137.50	75.80	80.80
90MW0071	90MW0071	05/16/2001	GROUNDWATER	150.00	155.00	79.57	84.57
90SNP001	90SNP001	05/15/2001	GROUNDWATER				
90SNP002	90SNP002	05/15/2001	GROUNDWATER				
90WT0003	90WT0003	05/13/2001	GROUNDWATER	87.50	97.50	0.00	10.00
90WT0004	90WT0004	05/13/2001	GROUNDWATER	98.00	108.00	0.00	10.00
90WT0005	90WT0005	05/13/2001	GROUNDWATER	50.00	60.00	0.00	10.00
90WT0006	90WT0006	05/13/2001	GROUNDWATER	35.00	45.00	0.00	10.00
PPAWSPW-1	PPAWSPW-1	05/16/2001	GROUNDWATER			158.00	178.00
PPAWSPW-2	PPAWSPW-2	05/16/2001	GROUNDWATER			85.00	105.00
USCSANTST	USCSANTST	05/16/2001	GROUNDWATER				
W133M1A	MW-133	05/14/2001	GROUNDWATER	352.00	362.00	133.60	143.60
W133M2A	MW-133	05/14/2001	GROUNDWATER	321.00	331.00	102.60	112.60
W13DDA	MW-13	05/17/2001	GROUNDWATER	220.00	225.00	141.20	146.20
W165M2A	MW-165	05/17/2001	GROUNDWATER	124.00	134.00	44.30	54.30
W16DDA	MW-16	05/18/2001	GROUNDWATER	355.00	360.00	218.85	223.85
W16SSA	MW-16	05/18/2001	GROUNDWATER	125.00	135.00	0.00	10.00
W31MMA	MW-31	05/16/2001	GROUNDWATER	113.00	123.00	22.55	32.55
W31SSA	MW-31	05/16/2001	GROUNDWATER	98.00	103.00	7.43	12.43
W34M2A	MW-34	05/17/2001	GROUNDWATER	131.00	141.00	50.05	60.05
W3DDA	MW-3	05/18/2001	GROUNDWATER	262.00	267.00	211.54	216.54
W42M3A	MW-42	05/15/2001	GROUNDWATER	166.00	176.00	95.30	105.30
W50DDA	MW-50	05/14/2001	GROUNDWATER	237.00	247.00	115.20	125.20
W50DDD	MW-50	05/14/2001	GROUNDWATER	237.00	247.00	115.20	125.20
W50M2A	MW-50	05/14/2001	GROUNDWATER	177.00	187.00	55.30	65.30
W50M3A	MW-50	05/14/2001	GROUNDWATER	147.00	157.00	25.20	35.20
W51DDA	MW-51	05/14/2001	GROUNDWATER	264.00	274.00	114.80	124.80
W51DDD	MW-51	05/14/2001	GROUNDWATER	264.00	274.00	114.80	124.80
W51M3A	MW-51	05/14/2001	GROUNDWATER	173.00	183.00	23.60	33.60

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
5/12/2001-5/18/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
W59M2A	MW-59	05/15/2001	GROUNDWATER	150.00	160.00	12.60	22.60
W5DDA	MW-5	05/18/2001	GROUNDWATER	335.00	340.00	216.25	221.25
W5DDD	MW-5	05/18/2001	GROUNDWATER	335.00	340.00	216.25	221.25
W65SSA	MW-65	05/15/2001	GROUNDWATER	116.00	126.00	0.00	10.00
W66SSA	MW-66	05/15/2001	GROUNDWATER	125.00	136.00	0.00	10.00
W67M1A	MW-67	05/16/2001	GROUNDWATER	243.00	253.00	82.08	92.08
W67SSA	MW-67	05/16/2001	GROUNDWATER	161.00	171.00	2.15	12.15
W69SSA	MW-69	05/14/2001	GROUNDWATER	110.00	120.00	0.00	10.00
W70SSA	MW-70	05/14/2001	GROUNDWATER	132.00	142.00	1.40	10.40
W76M1A	WL-76	05/16/2001	GROUNDWATER	125.00	135.00	54.21	64.21
W76M2A	WL-76	05/16/2001	GROUNDWATER	105.00	115.00	34.17	44.17
W76SSA	WL-76	05/16/2001	GROUNDWATER	85.00	95.00	4.30	14.30
W77M1A	MW-77	05/16/2001	GROUNDWATER	180.00	190.00	93.68	103.68
W77M2A	MW-77	05/16/2001	GROUNDWATER	120.00	130.00	33.69	43.69
ATF	ATF	05/17/2001	IDW				
DW051801	GAC WATER	05/18/2001	IDW				
HYDROLIC FLUID	HYDROLIC FLUID	05/17/2001	IDW				
SC16301	SOIL CUTTINGS	05/15/2001	IDW				
SC16302	SOIL CUTTINGS	05/15/2001	IDW				
SC16401	SOIL CUTTINGS	05/15/2001	IDW				
SC16402	SOIL CUTTINGS	05/15/2001	IDW				
SC16501	SOIL CUTTINGS	05/15/2001	IDW				
SC16502	SOIL CUTTINGS	05/15/2001	IDW				
SC16601	SOIL CUTTINGS	05/15/2001	IDW				
SC16602	SOIL CUTTINGS	05/15/2001	IDW				
SC16701	SOIL CUTTINGS	05/15/2001	IDW				
SC16702	SOIL CUTTINGS	05/15/2001	IDW				
SC16801	SOIL CUTTINGS	05/15/2001	IDW				
SC16802	SOIL CUTTINGS	05/15/2001	IDW				
LC102Q1AAA	LC102Q1	05/18/2001	OTHER				
G170DAA	MW-170	05/14/2001	PROFILE	110.00	110.00	2.10	2.10
G170DBA	MW-170	05/15/2001	PROFILE	120.00	120.00	12.10	12.10
G170DCA	MW-170	05/15/2001	PROFILE	130.00	130.00	22.10	22.10
G170DCD	MW-170	05/15/2001	PROFILE	130.00	130.00	22.10	22.10
G170DDA	MW-170	05/15/2001	PROFILE	140.00	140.00	32.10	32.10
G170DEA	MW-170	05/15/2001	PROFILE	150.00	150.00	42.10	42.10
G170DFA	MW-170	05/15/2001	PROFILE	160.00	160.00	52.10	52.10
G170DFD	MW-170	05/15/2001	PROFILE	160.00	160.00	52.10	52.10
G170DGA	MW-170	05/15/2001	PROFILE	170.00	170.00	62.10	62.10
G170DHA	MW-170	05/16/2001	PROFILE	180.00	180.00	72.10	72.10
G170DIA	MW-170	05/16/2001	PROFILE	190.00	190.00	82.10	82.10
G170DJA	MW-170	05/16/2001	PROFILE	200.00	200.00	92.10	92.10
G170DLA	MW-170	05/16/2001	PROFILE	220.00	220.00	112.10	112.10
G170DMA	MW-170	05/16/2001	PROFILE	230.00	230.00	122.10	122.10

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
5/12/2001-5/18/2001

OGDEN_ID	LOCID OR WELL ID	DATE SAMPLED	SAMPLE TYPE	SBD	SED	BWTS	BWTE
G170DNA	MW-170	05/16/2001	PROFILE	240.00	240.00	132.10	132.10
G170DOA	MW-170	05/16/2001	PROFILE	250.00	250.00	142.10	142.10
G170DPA	MW-170	05/16/2001	PROFILE	260.00	260.00	152.10	152.10
G170DQA	MW-170	05/16/2001	PROFILE	270.00	270.00	162.10	162.10
G170DQA	MW-170	05/18/2001	PROFILE	270.00	270.00	162.10	162.10
G170DQD	MW-170	05/16/2001	PROFILE	270.00	270.00	162.10	162.10
G170DRA	MW-170	05/17/2001	PROFILE	280.00	280.00	172.10	172.10
G170DSA	MW-170	05/17/2001	PROFILE	290.00	290.00	182.10	182.10
G170DTA	MW-170	05/17/2001	PROFILE	300.00	300.00	192.10	192.10
G170DUA	MW-170	05/17/2001	PROFILE	310.00	310.00	202.10	202.10
G170DVA	MW-170	05/18/2001	PROFILE	320.00	320.00	212.10	212.10
G170DWA	MW-170	05/18/2001	PROFILE	330.00	330.00	222.10	222.10
G170DXA	MW-170	05/18/2001	PROFILE	340.00	340.00	232.10	232.10
G171DAA	MW-171	05/16/2001	PROFILE	4.00	4.00	1.35	1.35
G171DBA	MW-171	05/16/2001	PROFILE	14.00	14.00	11.35	11.35
G171DCA	MW-171	05/16/2001	PROFILE	24.00	24.00	21.35	21.35
G171DCD	MW-171	05/16/2001	PROFILE	24.00	24.00	21.35	21.35
G171DDA	MW-171	05/16/2001	PROFILE	34.00	34.00	31.35	31.35
G171DEA	MW-171	05/17/2001	PROFILE	44.00	49.00	41.35	46.35
G171DFA	MW-171	05/17/2001	PROFILE	54.00	59.00	51.35	56.35
G171DGA	MW-171	05/17/2001	PROFILE	64.00	69.00	61.35	66.35
G171DHA	MW-171	05/17/2001	PROFILE	74.00	79.00	71.35	76.35
G171DIA	MW-171	05/17/2001	PROFILE	84.00	89.00	81.35	86.35
G171DJA	MW-171	05/18/2001	PROFILE	94.00	99.00	91.35	96.35
G171DKA	MW-171	05/18/2001	PROFILE	104.00	109.00	101.35	106.35
G171DLA	MW-171	05/18/2001	PROFILE	114.00	119.00	111.35	116.35
G171DMA	MW-171	05/18/2001	PROFILE	124.00	129.00	121.35	126.35
G171DNA	MW-171	05/18/2001	PROFILE	134.00	139.00	131.35	136.35
3.D.1.00785.1.0	D.1.00785.O	05/18/2001	SOIL BRUSHING	1.50	1.75		
5.B.1.00750.1.0	B.1.00750.O	05/16/2001	SOIL BRUSHING	1.25	1.50		
5.C.1.00746.1.0	C.1.00746.O	05/17/2001	SOIL BRUSHING	0.25	0.50		
5.C.1.00748.1.0	C.1.00748.O	05/17/2001	SOIL BRUSHING	0.50	1.00		
5.C.1.00751.1.0	C.1.00751.O	05/17/2001	SOIL BRUSHING	0.25	0.50		
5.C.1.00752.1.0	C.1.00752.O	05/17/2001	SOIL BRUSHING	0.00	0.25		
5.C.1.00753.1.0	C.1.00753.O	05/16/2001	SOIL BRUSHING	0.00	0.25		
5.D.1.00747.1.0	D.1.00747.O	05/17/2001	SOIL BRUSHING	0.25	0.50		
6.D.1.00742.1.0	D.1.00742.O	05/16/2001	SOIL BRUSHING	2.00	2.25		
6.D.1.00745.1.0	D.1.00745.O	05/16/2001	SOIL BRUSHING	1.75	2.00		
6.D.1.00774.1.0	D.1.00774.O	05/16/2001	SOIL BRUSHING	0.50	0.75		
HD102W1AAA	102W1	05/18/2001	SOIL GRID	0.00	0.50		
HD102W2AAA	102W2	05/18/2001	SOIL GRID	0.00	0.50		

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 4/28/01-5/18/01

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
90MW0022A	90MW0022	04/28/2001	GROUNDWATER	111.00	116.00	71.00	76.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	1,3,5-TRINITROBENZENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	1,3-DINITROBENZENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	2,4,6-TRINITROTOLUENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	2,6-DIAMINO-4-NITROTOLUENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	2-NITROTOLUENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	3-NITROTOLUENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	4-NITROTOLUENE	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	NITROGLYCERIN	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	PICRIC ACID	NO
90WT0019A	90WT0019	04/28/2001	GROUNDWATER	96.00	106.00	0.00	10.00	8330N	TETRYL	NO
W112M1A	MW-112	05/01/2001	GROUNDWATER	195.00	205.00	53.70	63.70	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W112M2A	MW-112	05/01/2001	GROUNDWATER	165.00	175.00	23.70	33.70	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W113M2A	MW-113	04/30/2001	GROUNDWATER	190.00	200.00	46.40	56.40	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W113M2A	MW-113	04/30/2001	GROUNDWATER	190.00	200.00	46.40	56.40	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W141M2A	MW-141	04/28/2001	GROUNDWATER	162.00	172.00	30.33	40.33	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W141SSA	MW-141	04/28/2001	GROUNDWATER	128.00	138.00	0.00	10.00	8330N	2,4,6-TRINITROTOLUENE	YES
W157M2A	MW-157	05/03/2001	GROUNDWATER	154.00	164.00	140.30	150.60	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W157M3A	MW-157	05/03/2001	GROUNDWATER	110.00	120.00	96.60	106.60	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W165M2A	MW-165	05/08/2001	GROUNDWATER	124.00	134.00	44.20	54.20	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W165M2A	MW-165	05/08/2001	GROUNDWATER	124.00	134.00	44.20	54.20	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W1M2A	MW-1	05/01/2001	GROUNDWATER	160.00	165.00	39.90	44.90	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W25SSA	MW-25	05/01/2001	GROUNDWATER	108.00	118.00	0.00	10.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W27SSA	MW-27	05/01/2001	GROUNDWATER	117.00	127.00	0.00	10.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W2M2A	MW-2	05/03/2001	GROUNDWATER	170.00	175.00	27.10	32.10	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W30SSA	MW-30	05/04/2001	GROUNDWATER	26.00	36.00	25.70	35.70	8330N	2,4,6-TRINITROTOLUENE	NO
W31SSA	MW-31	05/02/2001	GROUNDWATER	98.00	103.00	7.30	12.30	8330N	2,4,6-TRINITROTOLUENE	YES
W31SSA	MW-31	05/02/2001	GROUNDWATER	98.00	103.00	7.30	12.30	8330N	2,4-DINITROTOLUENE	YES
W31SSA	MW-31	05/02/2001	GROUNDWATER	98.00	103.00	7.30	12.30	8330N	2-AMINO-4,6-DINITROTOLUENE	YES
W31SSA	MW-31	05/02/2001	GROUNDWATER	98.00	103.00	7.30	12.30	8330N	4-AMINO-2,6-DINITROTOLUENE	YES
W31SSA	MW-31	05/02/2001	GROUNDWATER	98.00	103.00	7.30	12.30	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W31SSA	MW-31	05/02/2001	GROUNDWATER	98.00	103.00	7.30	12.30	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W34M1A	MW-34	05/05/2001	GROUNDWATER	151.00	161.00	70.20	80.20	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

TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 4/28/01-5/18/01

OGDEN_ID	LOCID OR WELL ID	SAMPLED	SAMP_TYPE	SBD	SED	BWTS	BWTE	METHOD	OGDEN_ANALYTE	PDA
W34M2A	MW-34	05/01/2001	GROUNDWATER	131.00	141.00	50.10	60.10	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W37M2A	MW-37	04/30/2001	GROUNDWATER	145.00	155.00	21.00	31.00	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W37M3A	MW-37	04/30/2001	GROUNDWATER	130.00	140.00	6.30	16.30	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W38M3A	MW-38	04/30/2001	GROUNDWATER	170.00	180.00	47.26	57.26	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W39M2A	MW-39	05/01/2001	GROUNDWATER	175.00	185.00	35.20	45.20	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W43M2A	MW-43	05/02/2001	GROUNDWATER	200.00	210.00	62.30	72.30	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W75M2A	MW-75	05/09/2001	GROUNDWATER	115.00	125.00	30.20	40.20	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76M1A	MW-76	05/07/2001	GROUNDWATER	125.00	135.00	54.20	64.20	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76M1A	MW-76	05/07/2001	GROUNDWATER	125.00	135.00	54.20	64.20	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W76M2A	MW-76	05/07/2001	GROUNDWATER	105.00	115.00	34.10	44.10	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W76M2A	MW-76	05/07/2001	GROUNDWATER	105.00	115.00	34.10	44.10	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W76SSA	MW-76	05/07/2001	GROUNDWATER	85.00	95.00	14.20	24.20	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W77M2A	MW-77	05/10/2001	GROUNDWATER	120.00	130.00	33.61	43.61	8330N	4-AMINO-2,6-DINITROTOLUENE	YES
W77M2A	MW-77	05/10/2001	GROUNDWATER	120.00	130.00	33.61	43.61	8330N	HEXAHYDRO-1,3,5-TRINITRO-1,3	YES
W77M2A	MW-77	05/10/2001	GROUNDWATER	120.00	130.00	33.61	43.61	8330N	OCTAHYDRO-1,3,5,7-TETRANITI	YES
W78M2A	MW-78	05/10/2001	GROUNDWATER	115.00	125.00	33.77	43.77	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

Groundwater Wells at MMR

LEGEND

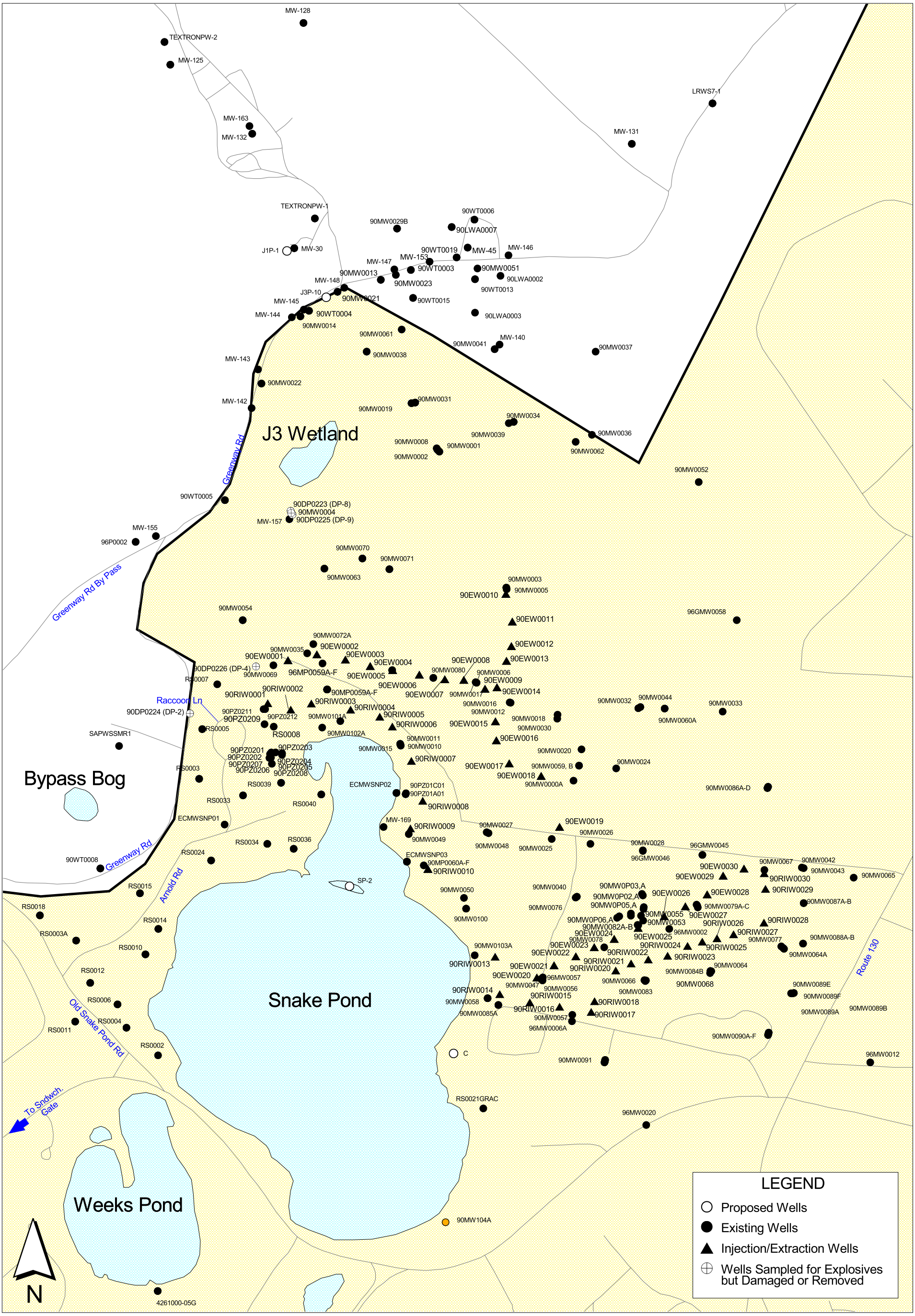
- Existing Monitoring Well
- Proposed Monitoring Well
- Proposed Supply Well

0 0.5 1 Miles

See Inset A

J:\GIS\May2001\All_MMR_Wells.pdf
G:\MMR\MMR\arcVprj\all_wells.apr
May 23, 2001 PRC

N



0 600 1200 Feet

Inset A

J:\GIS\May2001\all_mmr_wells_inset_a.pdf
G:\MMR\MMR\arcVprj\concentbox.apr
May 23, 2001 PRC