**WEEKLY PROGRESS UPDATE**
**FOR AUGUST 28 – SEPTEMBER 1, 2000**

**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 28 to September 1, 2000.

## 1. SUMMARY OF ACTIONS TAKEN

Drilling progress as of September 1 is summarized in Table 1.

**Table 1. Drilling progress as of September 1, 2000**

| Boring Number | Purpose of Boring/Well | Total Depth (ft bgs) | Saturated Depth (ft bwt) | Completed Well Screens (ft bgs) |
|---|---|---|---|---|
| MW-118 | Impact Area Response Well P-29 | 280 | 169 | |
| MW-120 | J-2 Range (J2P4) | 240 | 135 | |
| MW-121 | J-2 Range (J2P2) | 100 | 10 | 88-98 |

bgs = below ground surface
bwt = below water table

Completed drilling and well installation on MW-121 (J2P-2). Completed drilling on MW-118 (Impact Area Response well P-29). Continued drilling on MW-120 (J2P-4). UXO clearance completed on the J-3 Range access roads and drill pads. Commenced UXO clearance on the L Range drill pads and continued UXO avoidance flagging at the J-3 Range soil grids. Completed intrusive clearance at the supplemental BIP grids at the Target 9 and P-19 pads. Development of newly installed wells continued.

Samples collected during the reporting period are summarized in Table 2. Groundwater samples were collected from the August Long Term Monitoring wells. Soil samples were collected from around the two 750-pound training bombs in Demo 1. Groundwater profile samples were collected during the drilling of MW-118 and MW-120. Deep soil samples were collected during the drilling of MW-120 and MW-121. Soil samples were collected for the HUTA study from UXO detonations.

The Guard, EPA, and MADEP had a meeting on August 31 to discuss technical issues, including the following:

- Jacobs provided an update on the CS-19 Investigation. The scheduled RCL meeting has been moved from September 7 to September 13. The draft schedule for future CS-19 work was sent to AFCEE on August 29. This schedule has the FS and supplemental RI work on parallel paths. Jacobs has received an aerial magnetometer survey map of CS-19 from Tetra Tech and are working on evaluating the anomalies. EPA requested a copy of the map. Remedial action objectives are being developed and the tech screening report will be underway for the next few weeks. Ogden will be doing the CS-19 presentation at the IART meeting on September 7. A meeting will be held between Ogden, Jacobs, and USGS prior to the IART meeting, to discuss the differences between the USGS and Jacobs particle tracks. Ogden requested the CS-19 particle tracks as a GIS coverage prior to the meeting.
- The U.S Army Corps of Engineers presented an update on the Water Supply Study. The ZOCs and the Zone 2 estimates are now expected in 1.5 weeks. The draft report is still expected by mid-September.

- Tetra Tech provided an update on the Munitions Survey. A 1-page summary handout was distributed. J-2 surface clearance continues. 83 of the 112 grids have been recorded and the rest should be completed within the next couple of months. They are making progress slower than had been expected due to brush cutting difficulties: 15-20 grids are being done by hand. Approximately 35 items were blown in place on Tuesday within the J-1 Range. The Brontosaurus will be back on Tuesday to continue the ongoing work in J-1. Within the HUTA, 738 surface items have been identified, logged, located, and removed. 10 items BIPed last Friday (8/25) and the post-BIP samples were taken on Monday (8/28). EPA was provided the preliminary EM survey map of the area to help select the six test plots. The data is not expected to change much and preliminary selection of at least one test plot will be done today with the EPA so that surface and subsurface soil sampling can begin by Monday. Dr. Hewitt is expected to visit the week of 9/11 and there will be a presentation on the field GC. EPA also questioned how the 160 –170 samples are being handled now. Tetra Tech has given the metals to STL, others to a university and some samples that can not be run by the field GC are being sent to another lab. 20% of the samples are being sent to STL for QA. UXO clearance of internal roads will be done during next week or the following. The excavation screening plant set up and "debugging" is in progress and the Staging Area is being prepared today. The Excavation Work Plan for Gun & Mortar/Demolition Area 1 Validation has been submitted and revised copies will go out to EPA today. Validation in Demo 1 began last Thursday (8/24) and completion of Demo 1 excavation should be completed today. Two 750-pound bombs were found and believed to be training rounds. A burn pit was detected at a depth of 7 feet in the central portion of the basin. Ogden is awaiting this completion of the validation study to finish with the deep soil borings. Exclusion zones have been set up and initial validation of GP-10 has been started. The GP-10 area is wider than had been anticipated and is being done by hand. The items within this area are related to training activity (nose rings, shipping plugs, and rotating bands).
- Ogden provided an update of the Rapid Response Action. A 1-page summary handout was distributed. Approval has been given by DEP on the RAM Plan and EPA approved the Final RRA Work Plan. The Draft Delineation Sampling Report will be distributed to the agencies tomorrow (9/01/00). The treatability Study Report for soil washing was distributed to EPA and DEP on August 25. EPA requested another copy of the report. Envirogen will have a draft report on the treatability study for bioslurry to the Guard and agencies by early-to-mid-September. Upcoming RRA Implementation activities include the temporary relocation of soil washing equipment and relocation of washed rocks. UXO personnel will be on-site the week of September 11. Ogden is prepared for the Rapid Response Action IART presentation. Ogden will notify Range Control of the upcoming activities. Ogden requested that the Guard determine where the rocks need to be relocated.
- Ogden provided an update on the Groundwater Field Investigation. A 1-page summary handout was distributed. Drilling on MW-118 (P-29), MW-120 (J2P-4), and MW-121 (J2P-2) will be completed this week. Drilling should begin this week on J2P-1. Wells of MW-118 should be completed next week. Screens will need to be selected early next week for MW-118. EPA asked to be updated when a firm day for screen selection is determined. J2P-1 should be completed next week and drilling on J2P-5 will begin. Well screens for J2P-4 should be selected by the end of next week; delays occurred due to detonation events and the groundbreaking ceremony. Groundwater sampling of the August LTM round should be completed by next week and development of newly installed wells continues. UXO clearance of the LP-1 and intrusive clearance of supplemental BIP sample grids at P-19 and Target 9 have been completed. Avoidance flagging in the J-3 Range continues and UXO clearance will occur next week on J-2 and J-1 Ranges. J-2 Range soil grids will be completed next week.
- The results of the J2 Range Melt/Pour Building Wipe Samples were distributed and discussed. The table needs to have the units changed to ug/100cm2 and remove the RCS1 standards.
- The revised schedule (8/30/00) for Demo 1 FS was discussed. Ogden revised the schedule to incorporate EPA comments and allow time for efforts to identify background and the process of identifying contaminants of concern (COCs). Ogden believes that the timelines are very aggressive, although achievable. The EPA will reject the revised schedule. EPA will meet internally next week

to put together a suggested process for COCs using the IRP process as a model, and considering EPA Region 9 PRGs.

- There was a discussion regarding UXO issues. EPA requests a general overview meeting next week for revised procedures. The Guard requested that contractors have draft work plans by September 25. EPA requested a copy of the Corps UXO Guidance Document on safety. The Guard will have an internal meeting to discuss possible revisions, including that of additional work crews. EPA requested a detailed e-mail of how the Corps may change the procedures that are being used. The Guard indicated that the two 750 lb bombs in Demo 1 are training rounds but that one may have the potential of a live fuze and the other needs to be spit open before disposal which will require that they are detonated in place. The EPA suggested that pre and post soil samples be collected. EPA requested a proposal letter for documentation of detonation and sampling process. It will be discussed today on-site during the reconnaissance, including a detailed explanation of where the samples will be taken, in the presence of all the contractors.

Following the meeting there was a site walk to the J Ranges, HUTA, and Demo 1.

## 2. SUMMARY OF DATA RECEIVED

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

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

- The groundwater sample from 90MW0003 had detections of 3-nitrotoluene and nitroglycerin, which were not verified by PDA spectra

- The groundwater sample from 90WT0019 had detections of 2,4-DNT, 2,6-DNT, 4A-DNT, and nitroglycerin, which were not verified by the PDA spectra.

- The groundwater sample from ECMWSNP03D had a detection of 3-nitrotoluene, which was not verified by PDA spectra.

- The groundwater profile samples from MW-118 had detections of acetone (7 intervals), chloroform (6 intervals), chloromethane (4 intervals), MEK (7 intervals), TNT (2 intervals), 2,6-DNT (2 intervals), 2-nitrotoluene (1 interval), 3-nitrotoluene (1 interval), 4-nitrotoluene (2 intervals), picric acid (3 intervals), and nitroglycerin (1 interval). The TNT detections were verified by the PDA spectra.

## 3. DELIVERABLES SUBMITTED

The following deliverables were submitted during the reporting period.

| | |
|---|---|
| Draft Phase II (b) FSP for Small Arms Ranges | 08/30/00 |
| Final Central Impact Area Response Plan | 08/31/00 |
| Draft Phase II (b) FSP for GA/GB Ranges | 08/31/00 |
| Draft Phase II (b) FSP for Cleared Areas | 08/31/00 |
| Weekly Progress Update (Aug 21-Aug 25) | 09/01/00 |

## 4. SCHEDULED ACTIONS

Scheduled actions for the week of September 4 include well installation at MW-118 (P-29); continued drilling and well installation at MW-120 (J2P4); commence drilling and well installation at MW-122 (J2P1); commence drilling at MW-123 (Impact Area response well P-35); the continued UXO clearance of the Central Impact Area Drill Pads; complete groundwater sampling of the August LTM wells; and development of newly installed wells.

## 5. SUMMARY OF ACTIVITIES FOR DEMO 1

The regulatory agencies have provided comments on the draft FS Workplan for AO3 (including Demo 1), and the Guard's responses to comments are being discussed with the agencies. The regulatory agencies have provided comments on the draft technical memorandum for the Demo 1 response actions, and responses to comments are being prepared.

Validation of munitions survey results by excavation of selected anomalies was completed. Two 750-pound inert training bombs were discovered during the validation, which will be disposed as scrap metal. Soil samples were collected around the bombs. Additional deep soil sampling, in accordance with the sampling plan in the draft FS Workplan, will be completed following documentation of the validation results.

Profile sample results for MW-114 installed near the toe of the RDX plume indicate that the extent is further south and west than depicted previously. Two additional wells are planned in this area to refine the plume shape. Drilling is expected to resume in several weeks.

TABLE 2
SAMPLING PROGRESS
08/27/2000-09/2/2000



| OGDEN_ID | LOCID OR WELL ID | DATE SAMPLED | SAMPLE TYPE | SBD | SED | BWTS | BWTE |
|---|---|---|---|---|---|---|---|
| 0.G.0.00010.0.T | FIELDQC | 08/28/2000 | FIELDQC | 0.00 | 0.00 | | |
| 58MW0009EE | FIELDQC | 08/30/2000 | FIELDQC | 0.00 | 0.00 | | |
| 58MW0011ED | FIELDQC | 08/30/2000 | FIELDQC | 0.00 | 0.00 | | |
| 90LWA0007E | FIELDQC | 08/31/2000 | FIELDQC | 0.00 | 0.00 | | |
| 90WT0010E | FIELDQC | 08/29/2000 | FIELDQC | 0.00 | 0.00 | | |
| 95-14E | FIELDQC | 08/28/2000 | FIELDQC | 0.00 | 0.00 | | |
| ECMWSNP03SE | FIELDQC | 08/28/2000 | FIELDQC | 0.00 | 0.00 | | |
| G118DFE | FIELDQC | 08/28/2000 | FIELDQC | 0.00 | 0.00 | | |
| G118DHE | FIELDQC | 08/30/2000 | FIELDQC | 0.00 | 0.00 | | |
| G118DHT | FIELDQC | 08/29/2000 | FIELDQC | 0.00 | 0.00 | | |
| G118DPT | FIELDQC | 08/31/2000 | FIELDQC | 0.00 | 0.00 | | |
| G120DAE | FIELDQC | 08/30/2000 | FIELDQC | 0.00 | 0.00 | | |
| G120DGE | FIELDQC | 08/31/2000 | FIELDQC | 0.00 | 0.00 | | |
| G120DLE | FIELDQC | 09/01/2000 | FIELDQC | 0.00 | 0.00 | | |
| G120DMT | FIELDQC | 09/01/2000 | FIELDQC | 0.00 | 0.00 | | |
| S120DJE | FIELDQC | 08/28/2000 | FIELDQC | 0.00 | 0.00 | | |
| S120DLE | FIELDQC | 08/29/2000 | FIELDQC | 0.00 | 0.00 | | |
| S121DCE | FIELDQC | 08/30/2000 | FIELDQC | 0.00 | 0.00 | | |
| S121DCT | FIELDQC | 08/30/2000 | FIELDQC | 0.00 | 0.00 | | |
| S121DJE | FIELDQC | 08/31/2000 | FIELDQC | 0.00 | 0.00 | | |
| W63SST | FIELDQC | 08/28/2000 | FIELDQC | 0.00 | 0.00 | | |
| 58MW0006E | 58MW0006E | 08/30/2000 | GROUNDWATER | 110.00 | 120.00 | 0.00 | 10.00 |
| 58MW0009E | 58MW0009E | 08/30/2000 | GROUNDWATER | 128.00 | 138.00 | 1.62 | 11.62 |
| 58MW0011E | 58MW0011E | 08/30/2000 | GROUNDWATER | 146.00 | 156.00 | 16.75 | 26.75 |
| 90LWA0007 | 90LWA0007 | 08/31/2000 | GROUNDWATER | 92.00 | 102.00 | 0.00 | 10.00 |
| 90WT0010 | 90WT0010 | 08/29/2000 | GROUNDWATER | 82.00 | 92.00 | 0.00 | 10.00 |
| 95-14 | 95-14 | 08/28/2000 | GROUNDWATER | 102.00 | 112.00 | 89.10 | 99.10 |
| ECMWSNP03D | ECMWSNP03D | 08/28/2000 | GROUNDWATER | | | | |
| ECMWSNP03S | ECMWSNP03S | 08/28/2000 | GROUNDWATER | | | | |
| W37M1A | MW-37 | 08/31/2000 | GROUNDWATER | 181.00 | 191.00 | 58.94 | 68.94 |
| W37M2A | MW-37 | 08/31/2000 | GROUNDWATER | 145.00 | 155.00 | 22.84 | 32.84 |
| W37M3A | MW-37 | 08/31/2000 | GROUNDWATER | 130.00 | 140.00 | 8.03 | 18.03 |
| W40M1A | MW-40 | 09/01/2000 | GROUNDWATER | 132.50 | 142.50 | 11.00 | 21.00 |
| W40SSA | MW-40 | 09/01/2000 | GROUNDWATER | 115.50 | 125.50 | 0.00 | 10.00 |
| W44M1A | MW-44 | 09/01/2000 | GROUNDWATER | 182.00 | 192.00 | 52.56 | 62.56 |
| W44M2A | MW-44 | 08/31/2000 | GROUNDWATER | 142.00 | 152.00 | 12.47 | 22.47 |
| W44SSA | MW-44 | 09/01/2000 | GROUNDWATER | 123.00 | 133.00 | 0.00 | 10.00 |
| W45M1A | MW-45 | 08/31/2000 | GROUNDWATER | 190.00 | 200.00 | 95.61 | 105.61 |
| W45M2A | MW-45 | 09/01/2000 | GROUNDWATER | 110.00 | 120.00 | 15.18 | 25.18 |
| W45SSA | MW-45 | 08/31/2000 | GROUNDWATER | 89.00 | 99.00 | 0.00 | 10.00 |
| W57DDA | MW-57 | 08/30/2000 | GROUNDWATER | 213.00 | 223.00 | 124.62 | 134.62 |
| W57M1A | MW-57 | 08/29/2000 | GROUNDWATER | 188.00 | 198.00 | 99.62 | 109.62 |
| W57M2A | MW-57 | 08/29/2000 | GROUNDWATER | 148.00 | 158.00 | 59.68 | 69.68 |

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
08/27/2000-09/2/2000

| OGDEN_ID | LOCID OR WELL ID | DATE SAMPLED | SAMPLE TYPE | SBD | SED | BWTS | BWTE |
|---|---|---|---|---|---|---|---|
| W57M3A | MW-57 | 08/30/2000 | GROUNDWATER | 117.00 | 127.00 | 29.47 | 39.47 |
| W57SSA | MW-57 | 08/30/2000 | GROUNDWATER | 85.00 | 95.00 | 0.00 | 10.00 |
| W61SSA | MW-61 | 09/01/2000 | GROUNDWATER | 98.00 | 108.00 | 0.00 | 10.00 |
| W62SSA | MW-62 | 09/01/2000 | GROUNDWATER | 108.00 | 118.00 | 0.00 | 10.00 |
| W63M3A | MW-63 | 08/28/2000 | GROUNDWATER | 182.00 | 192.00 | 24.90 | 34.90 |
| W63SSA | MW-63 | 08/28/2000 | GROUNDWATER | 153.00 | 163.00 | 0.00 | 10.00 |
| W65SSA | MW-65 | 08/31/2000 | GROUNDWATER | 116.00 | 126.00 | 0.00 | 10.00 |
| W66SSA | MW-66 | 08/31/2000 | GROUNDWATER | 126.00 | 136.00 | 0.00 | 10.00 |
| W67M1A | MW-67 | 08/30/2000 | GROUNDWATER | 243.00 | 253.00 | 82.61 | 92.61 |
| W67SSA | MW-67 | 08/30/2000 | GROUNDWATER | 161.00 | 171.00 | 2.62 | 12.62 |
| W68SSA | MW-68 | 08/30/2000 | GROUNDWATER | 84.00 | 94.00 | 0.00 | 10.00 |
| W69SSA | MW-69 | 08/29/2000 | GROUNDWATER | 110.00 | 120.00 | 0.00 | 10.00 |
| W70SSA | MW-70 | 08/29/2000 | GROUNDWATER | 132.00 | 142.00 | 1.59 | 11.59 |
| W71M1A | MW-71 | 08/30/2000 | GROUNDWATER | 180.00 | 190.00 | 17.85 | 27.85 |
| W71SSA | MW-71 | 08/29/2000 | GROUNDWATER | 158.00 | 168.00 | 0.00 | 10.00 |
| W72SSA | MW-72 | 09/01/2000 | GROUNDWATER | 106.00 | 116.00 | 0.00 | 10.00 |
| W84DDA | MW-84 | 08/28/2000 | GROUNDWATER | 190.00 | 200.00 | 150.60 | 160.60 |
| W84SSA | MW-84 | 08/28/2000 | GROUNDWATER | 54.00 | 64.00 | 14.12 | 24.12 |
| DW0831 | GAC WATER | 08/31/2000 | IDW | | | | |
| HDD17501A | 12EE | 09/01/2000 | PRE BIP | 0.00 | 0.25 | | |
| HDD17501B | 12EE | 09/01/2000 | PRE BIP | 0.00 | 0.25 | | |
| HDD17502A | 12EE | 09/01/2000 | PRE BIP | 0.00 | 0.25 | | |
| HDD17502B | 12EE | 09/01/2000 | PRE BIP | 0.00 | 0.25 | | |
| G118DFA | MW-118 | 08/28/2000 | PROFILE | 160.00 | 160.00 | 49.00 | 49.00 |
| G118DGA | MW-118 | 08/28/2000 | PROFILE | 170.00 | 170.00 | 59.00 | 59.00 |
| G118DHA | MW-118 | 08/30/2000 | PROFILE | 180.00 | 180.00 | 69.00 | 69.00 |
| G118DIA | MW-118 | 08/30/2000 | PROFILE | 190.00 | 190.00 | 79.00 | 79.00 |
| G118DJA | MW-118 | 08/30/2000 | PROFILE | 200.00 | 200.00 | 89.00 | 89.00 |
| G118DKA | MW-118 | 08/30/2000 | PROFILE | 210.00 | 210.00 | 99.00 | 99.00 |
| G118DLA | MW-118 | 08/30/2000 | PROFILE | 220.00 | 220.00 | 109.00 | 109.00 |
| G118DMA | MW-118 | 08/30/2000 | PROFILE | 230.00 | 230.00 | 119.00 | 119.00 |
| G118DNA | MW-118 | 08/30/2000 | PROFILE | 240.00 | 240.00 | 129.00 | 129.00 |
| G118DOA | MW-118 | 08/30/2000 | PROFILE | 250.00 | 250.00 | 139.00 | 139.00 |
| G118DPA | MW-118 | 08/31/2000 | PROFILE | 260.00 | 260.00 | 149.00 | 149.00 |
| G118DQA | MW-118 | 08/31/2000 | PROFILE | 270.00 | 270.00 | 159.00 | 159.00 |
| G118DRA | MW-118 | 08/31/2000 | PROFILE | 280.00 | 280.00 | 169.00 | 169.00 |
| G120DAA | MW-120 | 08/30/2000 | PROFILE | 110.00 | 110.00 | 5.20 | 5.20 |
| G120DBA | MW-120 | 08/30/2000 | PROFILE | 120.00 | 120.00 | 15.20 | 15.20 |
| G120DCA | MW-120 | 08/30/2000 | PROFILE | 130.00 | 130.00 | 25.20 | 25.20 |
| G120DDA | MW-120 | 08/30/2000 | PROFILE | 140.00 | 140.00 | 35.20 | 35.20 |
| G120DEA | MW-120 | 08/30/2000 | PROFILE | 150.00 | 150.00 | 45.20 | 45.20 |
| G120DFA | MW-120 | 08/30/2000 | PROFILE | 160.00 | 160.00 | 55.20 | 55.20 |
| G120DGA | MW-120 | 08/31/2000 | PROFILE | 170.00 | 170.00 | 65.20 | 65.20 |
| G120DHA | MW-120 | 08/31/2000 | PROFILE | 180.00 | 180.00 | 75.20 | 75.20 |

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
08/27/2000-09/2/2000

| OGDEN_ID | LOCID OR WELL ID | DATE SAMPLED | SAMPLE TYPE | SBD | SED | BWTS | BWTE |
|---|---|---|---|---|---|---|---|
| G120DIA | MW-120 | 08/31/2000 | PROFILE | 190.00 | 190.00 | 85.20 | 85.20 |
| G120DJA | MW-120 | 08/31/2000 | PROFILE | 200.00 | 200.00 | 95.20 | 95.20 |
| G120DKA | MW-120 | 08/31/2000 | PROFILE | 210.00 | 210.00 | 105.20 | 105.20 |
| G120DLA | MW-120 | 09/01/2000 | PROFILE | 220.00 | 220.00 | 115.20 | 115.20 |
| G120DMA | MW-120 | 09/01/2000 | PROFILE | 230.00 | 230.00 | 125.20 | 125.20 |
| G120DMD | MW-120 | 09/01/2000 | PROFILE | 230.00 | 230.00 | 125.20 | 125.20 |
| S120DJA | MW-120 | 08/28/2000 | SOIL BORING | 80.00 | 82.00 | | |
| S120DKA | MW-120 | 08/28/2000 | SOIL BORING | 90.00 | 92.00 | | |
| S120DLA | MW-120 | 08/29/2000 | SOIL BORING | 100.00 | 102.00 | | |
| S121DCA | MW-121 | 08/30/2000 | SOIL BORING | 10.00 | 12.00 | | |
| S121DCD | MW-121 | 08/30/2000 | SOIL BORING | 10.00 | 12.00 | | |
| S121DDA | MW-121 | 08/30/2000 | SOIL BORING | 20.00 | 22.00 | | |
| S121DEA | MW-121 | 08/30/2000 | SOIL BORING | 30.00 | 32.00 | | |
| S121DFA | MW-121 | 08/30/2000 | SOIL BORING | 40.00 | 42.00 | | |
| S121DGA | MW-121 | 08/30/2000 | SOIL BORING | 50.00 | 52.00 | | |
| S121DHA | MW-121 | 08/30/2000 | SOIL BORING | 60.00 | 62.00 | | |
| S121DIA | MW-121 | 08/30/2000 | SOIL BORING | 70.00 | 72.00 | | |
| S121DJA | MW-121 | 08/31/2000 | SOIL BORING | 80.00 | 82.00 | | |
| S121DKA | MW-121 | 08/31/2000 | SOIL BORING | 90.00 | 92.00 | | |
| 0.A.1.00016.6.0 | 0.A.1.00016.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.1.00032.6.0 | 0.A.1.00032.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.1.00072.6.0 | 0.A.1.00072.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.1.00085.6.0 | 0.A.1.00085.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.1.00089.6.0 | 0.A.1.00089.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.1.00263.6.0 | 0.A.1.00263.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.1.00338.6.0 | 0.A.1.00338.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00001.6.0 | 0.A.2.00001.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00002.6.0 | 0.A.2.00002.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00197.10. | 0.A.2.00197.10. | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00197.6.0 | 0.A.2.00197.6.0 | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00197.6.D | 0.A.2.00197.6.D | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00197.7.S | 0.A.2.00197.7.S | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00197.8.S | 0.A.2.00197.8.S | 08/28/2000 | CRATER GRAB | | | | |
| 0.A.2.00197.9.S | 0.A.2.00197.9.S | 08/28/2000 | CRATER GRAB | | | | |

Profiling methods include: Volatiles and Explosives
Groundwater methods include: Volatiles, Semivolatiles, Explosives, Pesticides, Herbicides, Metals, and Wet Chemistry
Other Sample Types methods are variable
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BWTS = Depth below water table, start depth, measured in feet
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TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 8/13/00-9/2/00

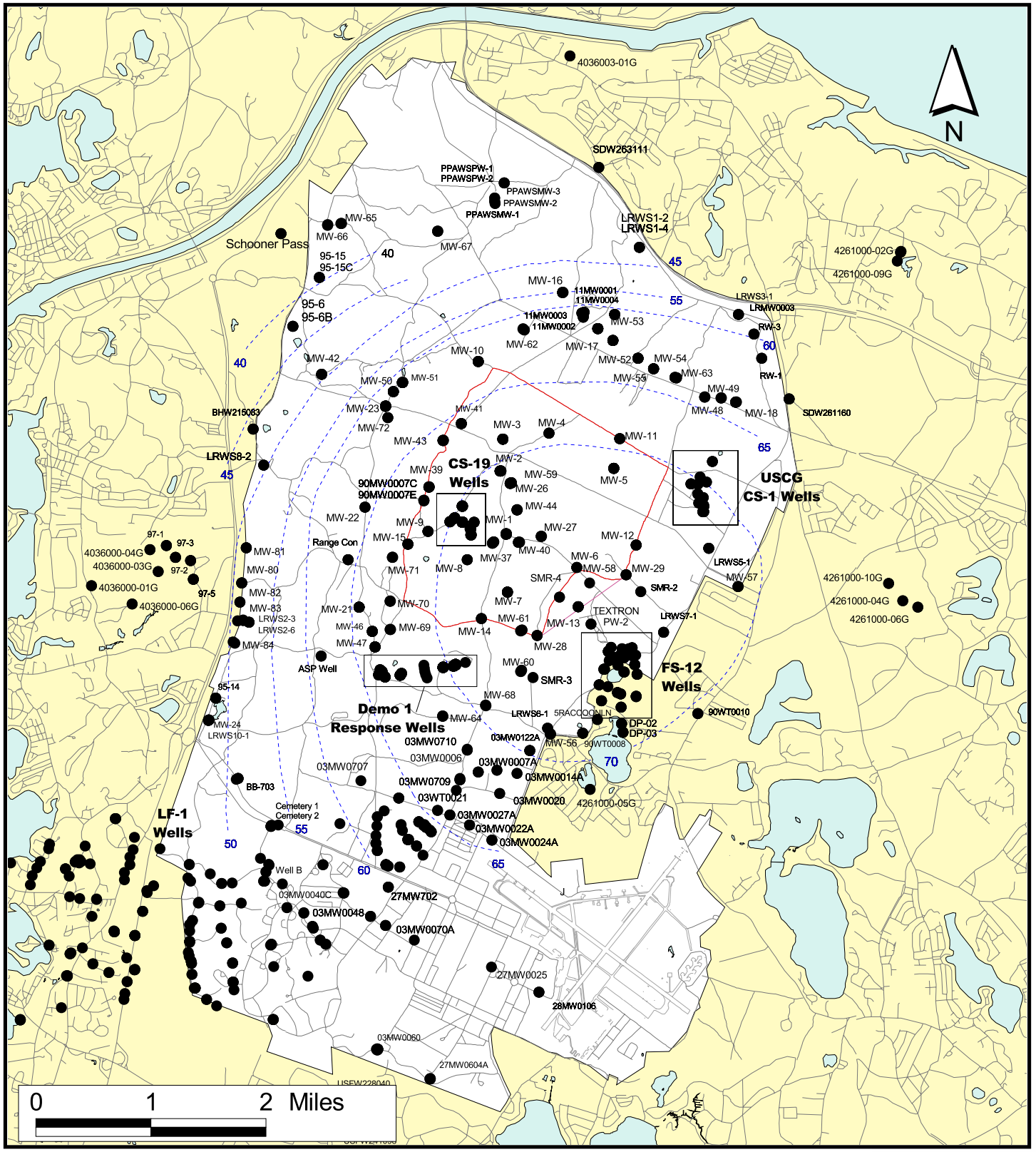
| OGDEN_ID | LOCID OR WELL ID | SAMPLED | SAMP_TYPE | SBD | SED | BWTS | BWTE | METHOD | OGDEN_ANALYTE | PDA |
|---|---|---|---|---|---|---|---|---|---|---|
| 90MW0003 | 90MW0003 | 08/22/2000 | GROUNDWATER | 141.00 | 151.00 | 49.57 | 59.57 | 8330N | 3-NITROTOLUENE | NO |
| 90MW0003 | 90MW0003 | 08/22/2000 | GROUNDWATER | 141.00 | 151.00 | 49.57 | 59.57 | 8330N | NITROGLYCERIN | NO |
| 90WT0019 | 90WT0019 | 08/22/2000 | GROUNDWATER | 96.00 | 106.00 | 0.00 | 10.00 | 8330N | 2,4-DINITROTOLUENE | NO |
| 90WT0019 | 90WT0019 | 08/22/2000 | GROUNDWATER | 96.00 | 106.00 | 0.00 | 10.00 | 8330N | 2,6-DINITROTOLUENE | NO |
| 90WT0019 | 90WT0019 | 08/22/2000 | GROUNDWATER | 96.00 | 106.00 | 0.00 | 10.00 | 8330N | 4-AMINO-2,6-DINITROTOLUENE | NO |
| 90WT0019 | 90WT0019 | 08/22/2000 | GROUNDWATER | 96.00 | 106.00 | 0.00 | 10.00 | 8330N | NITROGLYCERIN | NO |
| ECMWSNP03D | ECMWSNP03D | 08/28/2000 | GROUNDWATER | | | | | 8330N | 3-NITROTOLUENE | NO |
| G118DAA | MW-118 | 08/24/2000 | PROFILE | 113.00 | 113.00 | 2.00 | 2.00 | OC21V | ACETONE | |
| G118DAA | MW-118 | 08/24/2000 | PROFILE | 113.00 | 113.00 | 2.00 | 2.00 | OC21V | CHLOROFORM | |
| G118DAA | MW-118 | 08/24/2000 | PROFILE | 113.00 | 113.00 | 2.00 | 2.00 | OC21V | CHLOROMETHANE | |
| G118DAA | MW-118 | 08/24/2000 | PROFILE | 113.00 | 113.00 | 2.00 | 2.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | 8330N | 2,4,6-TRINITROTOLUENE | YES |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | 8330N | 2,6-DINITROTOLUENE | NO |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | 8330N | 2-NITROTOLUENE | NO |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | 8330N | 4-NITROTOLUENE | NO |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | 8330N | PICRIC ACID | NO |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | OC21V | ACETONE | |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | OC21V | CHLOROFORM | |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | OC21V | CHLOROMETHANE | |
| G118DBA | MW-118 | 08/24/2000 | PROFILE | 120.00 | 120.00 | 9.00 | 9.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | 2,6-DINITROTOLUENE | NO |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | 3-NITROTOLUENE | NO |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | 4-NITROTOLUENE | NO |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | NITROGLYCERIN | NO |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | PICRIC ACID | NO |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | ACETONE | |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | CHLOROFORM | |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | CHLOROMETHANE | |
| G118DCA | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | 2,6-DINITROTOLUENE | NO |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | 3-NITROTOLUENE | NO |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | 4-NITROTOLUENE | NO |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | NITROGLYCERIN | 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

TABLE 3
DETECTED COMPOUNDS-UNVALIDATED
SAMPLES COLLECTED 8/13/00-9/2/00

| OGDEN_ID | LOCID OR WELL ID | SAMPLED | SAMP_TYPE | SBD | SED | BWTS | BWTE | METHOD | OGDEN_ANALYTE | PDA |
|---|---|---|---|---|---|---|---|---|---|---|
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | 8330N | PICRIC ACID | NO |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | ACETONE | |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | CHLOROFORM | |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | CHLOROMETHANE | |
| G118DCD | MW-118 | 08/25/2000 | PROFILE | 130.00 | 130.00 | 19.00 | 19.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DDA | MW-118 | 08/25/2000 | PROFILE | 140.00 | 140.00 | 29.00 | 29.00 | 8330N | PICRIC ACID | NO |
| G118DDA | MW-118 | 08/25/2000 | PROFILE | 140.00 | 140.00 | 29.00 | 29.00 | OC21V | ACETONE | |
| G118DDA | MW-118 | 08/25/2000 | PROFILE | 140.00 | 140.00 | 29.00 | 29.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DEA | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | ACETONE | |
| G118DEA | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | CHLOROFORM | |
| G118DEA | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | CHLOROMETHANE | |
| G118DEA | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DED | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | 8330N | 2,4,6-TRINITROTOLUENE | YES |
| G118DED | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | ACETONE | |
| G118DED | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | CHLOROFORM | |
| G118DED | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | CHLOROMETHANE | |
| G118DED | MW-118 | 08/25/2000 | PROFILE | 150.00 | 150.00 | 39.00 | 39.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DFA | MW-118 | 08/28/2000 | PROFILE | 160.00 | 160.00 | 49.00 | 49.00 | OC21V | ACETONE | |
| G118DFA | MW-118 | 08/28/2000 | PROFILE | 160.00 | 160.00 | 49.00 | 49.00 | OC21V | CHLOROFORM | |
| G118DFA | MW-118 | 08/28/2000 | PROFILE | 160.00 | 160.00 | 49.00 | 49.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |
| G118DGA | MW-118 | 08/28/2000 | PROFILE | 170.00 | 170.00 | 59.00 | 59.00 | OC21V | ACETONE | |
| G118DGA | MW-118 | 08/28/2000 | PROFILE | 170.00 | 170.00 | 59.00 | 59.00 | OC21V | CHLOROFORM | |
| G118DGA | MW-118 | 08/28/2000 | PROFILE | 170.00 | 170.00 | 59.00 | 59.00 | OC21V | METHYL ETHYL KETONE (2-BUT. | |

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



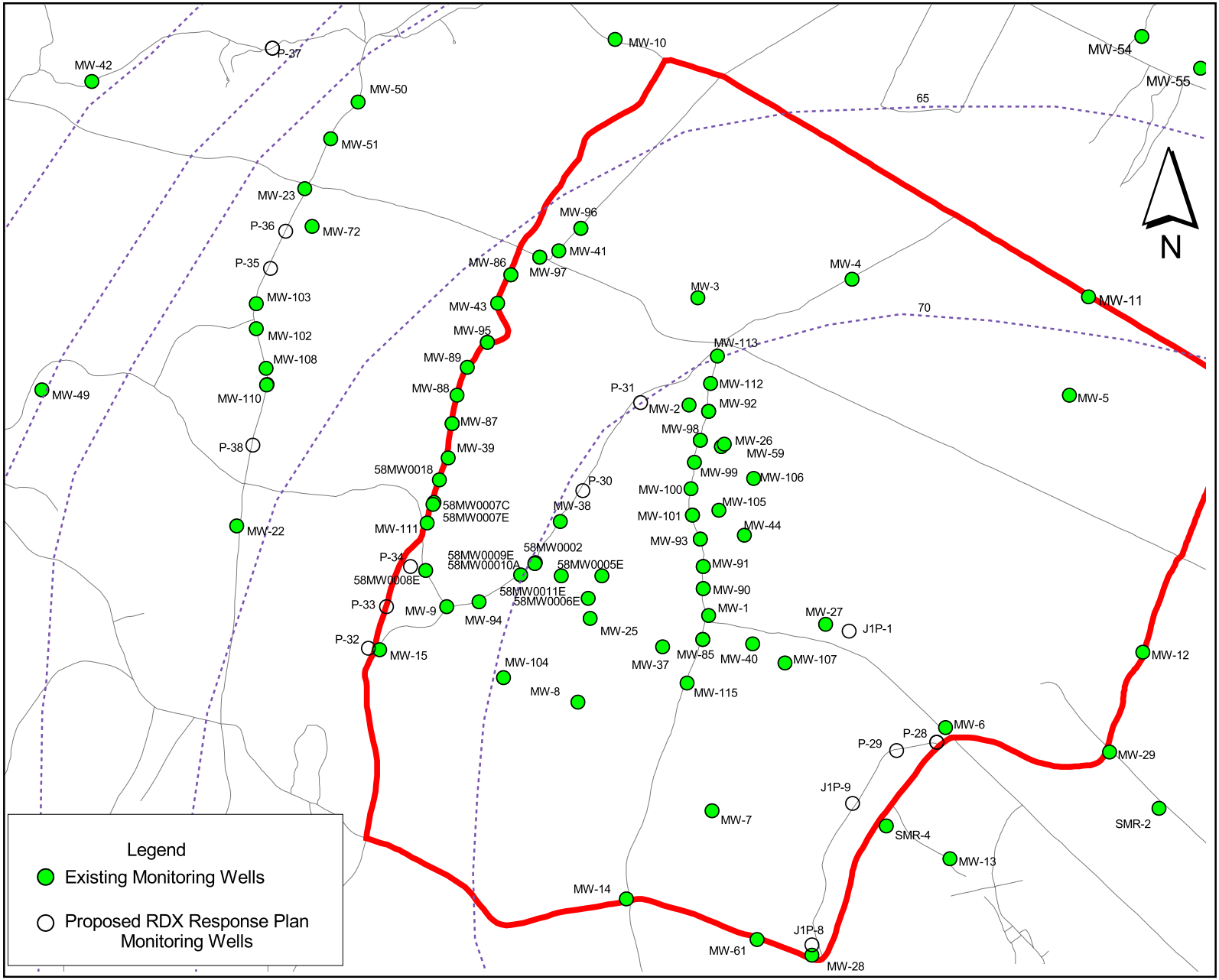

Sources & Notes

Map Coordinates: Stateplane,
NAD83, Zone 4151, Meters
Source: MASSGIS

# Location of Existing and Proposed Groundwater Monitoring Wells As Of 12/16/99

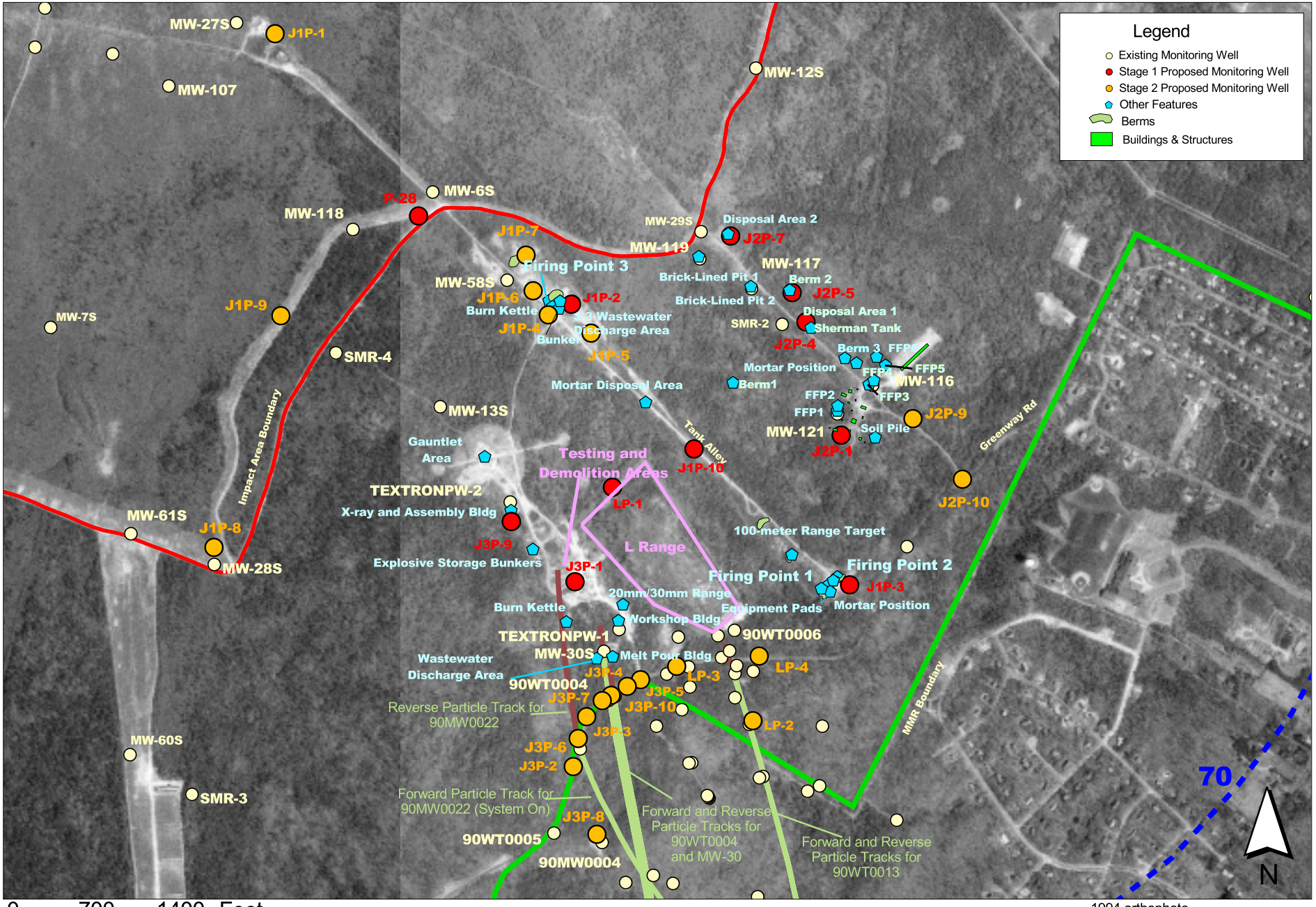
L:\MMR\GIS\december99\weekly_figs\dec1699_wells
G:\MMR\well_updates.apr December 20, 1999

December 16, 1999 DRAFT




# Proposed RDX Response Plan Wells In The Impact Area

Figure 1




# J-1, J-2, J-3, and L Ranges
# Proposed Monitoring Well Locations

1994 orthophoto as backdrop

J:\GIS\September2000\Pub_fig2
G:\MMR\special_j-range_figs.apr
September 6, 2000

Figure 2