



IT Corporation

312 Directors Drive
Knoxville, TN 37923-4799
Tel. 423.690.3211
Fax. 423.690.3626

A Member of The IT Group

November 3, 2000

IT-MC-CK05-0438
Project No. 774645

Mr. Ellis Pope
U.S. Army Corps of Engineers
Mobile District
Attn: CESAM-EN-GE (Pope)
109 Saint Joseph Street
Mobile, AL 36602

Contract: **Contract No. DACA21-96-D-0018/CK05**
 Fort McClellan, Alabama

Subject: **Site-Specific Work Plan Addendum for the Supplemental Remedial Investigation for**
 the Fenced Area at Range J-Pelham Range, Parcel 202(7)

Dear Mr. Pope:

This letter serves to document our proposed field activities at Range J, Parcel 202(7). The proposed field activities and rationale were discussed at the recent Base Realignment and Closure Cleanup Team (BCT) meeting on October 25, 2000.

Background

Previous investigations by others included installation and sampling of three groundwater monitoring wells. The results of the groundwater sampling indicated that chlorinated organic compounds (primarily carbon tetrachloride) are present in groundwater at Range J. During supplemental remedial investigation activities, IT Corporation installed 13 additional monitoring wells and subsequently collected groundwater samples from 16 monitoring wells at the site. Figure 1 illustrates the location and concentrations of organic compounds in groundwater exceeding site-specific screening levels. Based on the location of the wells and the prevailing groundwater flow direction in the bedrock and residuum aquifers (generally east to west), it appears that the vertical and horizontal extent of these compounds has not been defined. The future land use of the property is projected as a training area for the Alabama National Guard (ANG). Delineation of the extent of chlorinated organic compounds is necessary to meet the requirements of the memorandum of agreement (MOA) between the Department of the Army and ANG. The MOA details the environmental work required on property scheduled to be transferred from Department of Army to the ANG.

Field Activities

As presented at the October 25, 2000 BCT meeting, IT proposes to install 20 groundwater monitoring wells at Range J to fully define the extent of chlorinated organic compounds in residuum and bedrock aquifers at the site. The proposed groundwater monitoring well locations are shown on Figure 2. The monitoring well locations were selected to fill data gaps determined during analyses of existing

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groundwater analytical data using the geostatistical interpolation method of kriging. The proposed locations represent optimum locations to achieve an 85 percent data confidence to delineate the vertical and horizontal extent of chlorinated organic compounds in groundwater. The proposed wells will be installed in pairs as shown on Figure 2, with each pair including a residuum and bedrock groundwater monitoring well.

Residuum wells will be installed on top of competent bedrock to an estimated depth of 100 feet below ground surface. Bedrock wells will be double cased and installed to an estimated depth of 175 feet below ground surface. Monitoring well installation for residuum and bedrock wells will follow the procedures outlined in Section 4.3.3 of the Supplemental Remedial Investigation, Site-Specific Field Sampling Plan Attachment for the Fenced Area at Range J – Pelham Range, Parcel 202(7), November 1998.

As discussed at the October 25, 2000 BCT meeting, well installation will be performed using a phased approach, with the following proposed well pairs installed during the first phase:

- RJR-202-MW17 and RJR-202-MW18
- RJR-202-MW25 and RJR-202-MW26
- RJR-202-MW27 and RJR-202-MW28
- RJR-202-MW31 and RJR-202-MW32
- RJR-202-MW33 and RJR-202-MW34
- RJR-202-MW35 and RJR-202-MW36.

IT will collect groundwater screening samples from these wells for volatile organic compound analysis after well development to provide a snapshot of the groundwater conditions. Based on the results of the groundwater screening data, the locations of the following well pairs may be adjusted from those locations shown on Figure 2:

- RJR-202-MW19 and RJR-202-MW20
- RJR-202-MW21 and RJR-202-MW22
- RJR-202-MW23 and RJR-202-MW24
- RJR-202-MW29 and RJR-202-MW30.

Any adjustment in location will be made to better define the horizontal and vertical extent of groundwater contamination. The monitoring well locations and elevations will be surveyed following the methodology outlined in Section 4.5 of the Supplemental Remedial Investigation, Site-Specific Field Sampling Plan Attachment for the Fenced Area at Range J – Pelham Range, Parcel 202(7), November 1998, and Section 4.17 of the Installation-Wide Sampling and Analysis Plan (SAP), March 2000.

At the completion of well installation and development activities, 36 groundwater samples (16 samples from existing wells and 20 samples from proposed wells) will be collected. Groundwater samples will be analyzed for parameters listed in Tables 1 and 2. Groundwater samples will be collected as outlined in Section 4.3.4 of the Supplemental Remedial Investigation, Site-Specific Field Sampling Plan Attachment for the Fenced Area at Range J – Pelham Range, Parcel 202(7), November 1998, and Section 4.9.1.4 of the SAP. Low-flow groundwater sampling methodology may be used as deemed necessary by the IT Site Manager. Equipment decontamination procedures will follow the methodology presented in Section 4.10.1.2 of the SAP.

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Investigative-derived waste (IDW) generated during well installation and sampling will be managed in accordance with the procedures outlined in Appendix D of the SAP.

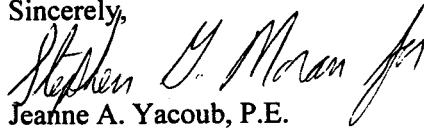
The presence of unexploded ordnance is possible at Range J. Therefore, IT will conduct UXO avoidance activities as outlined in Appendix E of the SAP and the attached Site-Specific UXO Safety Plan (Attachment I) prior to initiating intrusive field activities at Range J. In addition, IT has revised the Site-Specific Health and Safety Plan (Attachment II) for use during field activities at Range J.

Schedule

IT is prepared to initiate field activities at Range J, Parcel 202(7), during the week of November 13, 2000. We anticipate the proposed field work to be completed in March 2001.

I have distributed copies of this document according to the distribution list indicated below. If you have any questions, or need further information, please contact me at (770) 663-1429 or Steve Moran at (865) 694-7361.

Sincerely,



Jeanne A. Yacoub, P.E.
Project Manager

Attachments

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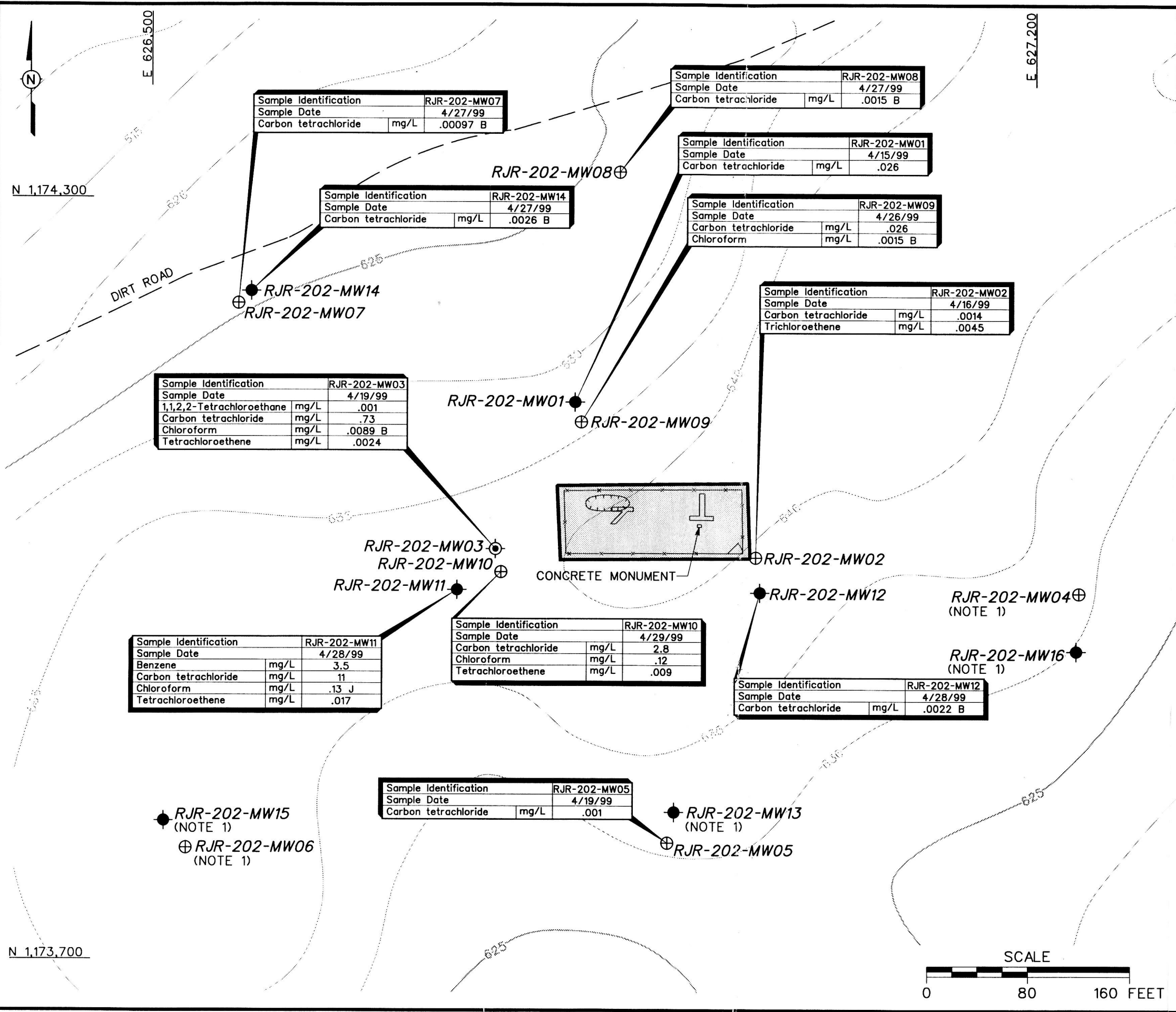
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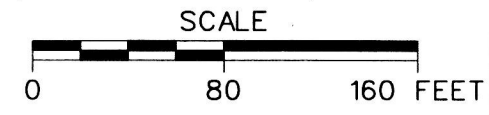


- LEGEND**
- UNIMPROVED ROADS AND PARKING
 - TOPOGRAPHIC CONTOURS (CONTOUR INTERVAL - 5 FOOT)
 - ▭ PARCEL BOUNDARY
 - x- FENCE
 - FORMER SOIL / DRUM DISPOSAL PIT
 - └ FORMER TRENCH EXCAVATION
 - ⊙ EXISTING RESIDUUM/BEDROCK MONITORING WELL LOCATION
 - EXISTING BEDROCK MONITORING WELL LOCATION
 - ⊕ EXISTING RESIDUUM MONITORING WELL LOCATION
 - B QUALIFIER DESIGNATES BLANK CONTAMINATION
 - J QUALIFER INDICATES AN ESTIMATED CONCENTRATION
 - SSSLs SITE SPECIFIC SCREENING LEVELS
 - mg/L MILLIGRAMS PER LITER

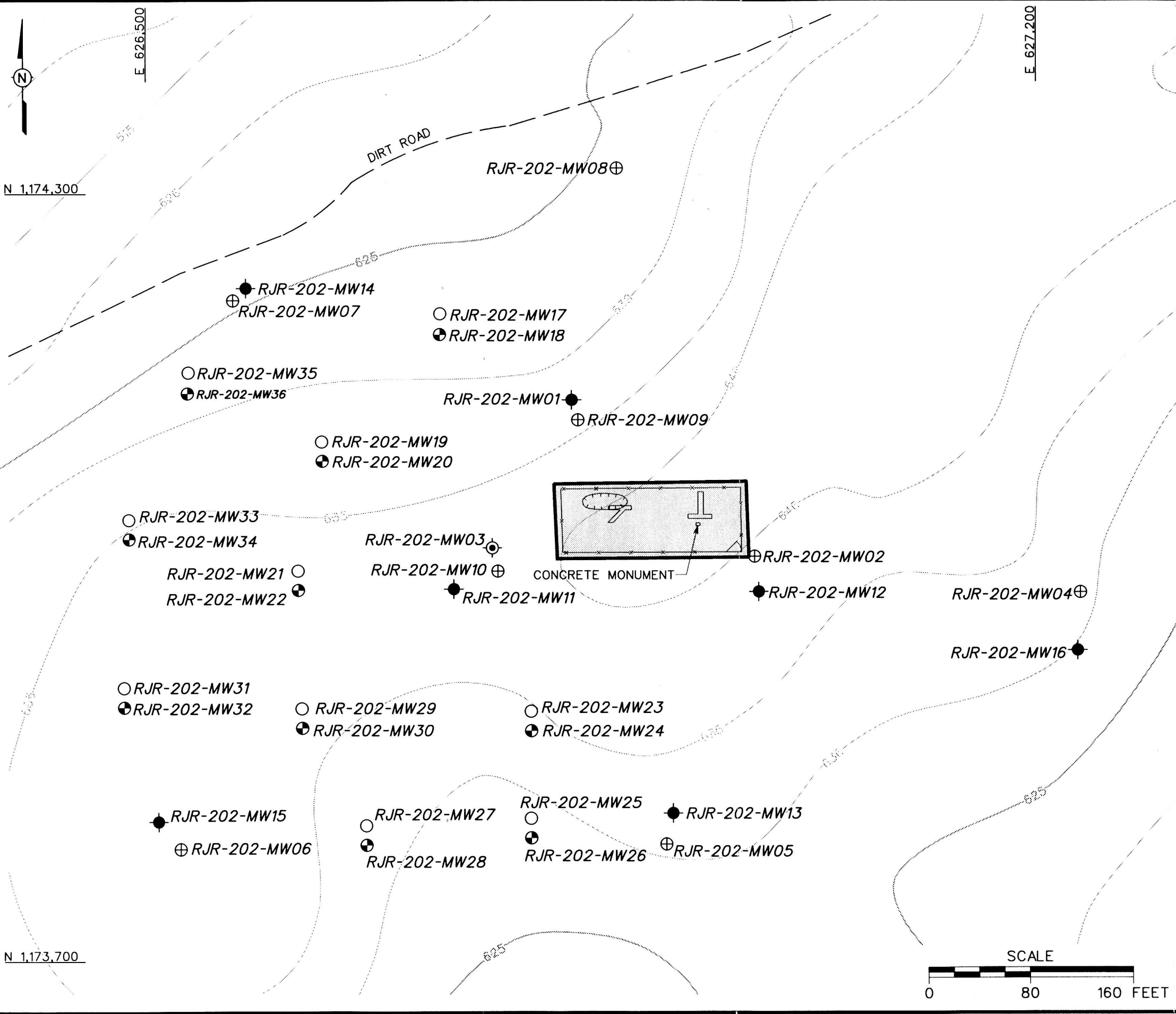
NOTE:
 1. VOCs EXCEEDING SSSLs NOT DETECTED AT THIS LOCATION.

FIGURE 1
 VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER EXCEEDING SSSLs FENCED AREA AT RANGE J PELHAM RANGE CHEMICAL AGENT TRAINING AND DISPOSAL AREA PARCEL 202(7)

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 MOBILE DISTRICT
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 CALHOUN COUNTY, ALABAMA
 Contract No. DACA21-96-D-0018



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 PROJ. NO.: PRESENTATION
 INITIATOR: J. JENKINS
 PROJ. MGR.: J. YACOUB
 DRAFT. CHK. BY: J. JENKINS
 ENGR. CHK. BY: J. JENKINS
 DATE LAST REV.:
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 STARTING DATE: 10/31/00
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- LEGEND**
- UNIMPROVED ROADS AND PARKING
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 - ▭ PARCEL BOUNDARY
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 - ⊙ EXISTING RESIDUUM/BEDROCK MONITORING WELL LOCATION
 - EXISTING BEDROCK MONITORING WELL LOCATION
 - ⊕ EXISTING RESIDUUM MONITORING WELL LOCATION
 - ⊙ PROPOSED BEDROCK MONITORING WELL LOCATION
 - PROPOSED RESIDUUM MONITORING WELL LOCATION

FIGURE 2
 PROPOSED MONITORING WELL LOCATIONS
 FENCED AREA AT RANGE J
 PELHAM RANGE
 CHEMICAL AGENT TRAINING AND DISPOSAL AREA
 PARCEL 202(7)

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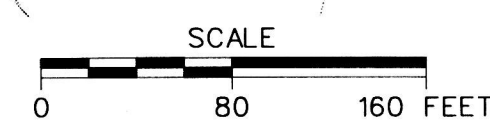


Table 1

**Groundwater Sample Designations and QA/QC Sample Quantities
Supplemental Remedial Investigation
Fenced Area at Range J - Pelham Range, Parcel 202(7)
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 3)

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
RJR-202-MW01	RJR-202-MW01-GW-JB3019-REG	63-73				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW02	RJR-202-MW02-GW-JB3020-REG	70-80				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW03	RJR-202-MW03-GW-JB3021-REG	60-70	RJR-202-MW03-GW-JB3022-FD	RJR-202-MW03-GW-JB3023-FS		TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW04	RJR-202-MW04-GW-JB3024-REG	80-90			RJR-202-MW04-GW-JB3024-MS/MSD	TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW05	RJR-202-MW05-GW-JB3025-REG	73-83				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW06	RJR-202-MW06-GW-JB3026-REG	88-98				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW07	RJR-202-MW07-GW-JB3027-REG	54-64				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW08	RJR-202-MW08-GW-JB3028-REG	55.4-65.4				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW09	RJR-202-MW09-GW-JB3029-REG	72-82				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW10	RJR-202-MW10-GW-JB3030-REG	60-90				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW11	RJR-202-MW11-GW-JB3031-REG	110-125				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW12	RJR-202-MW12-GW-JB3032-REG	113.15-128.15				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW13	RJR-202-MW13-GW-JB3033-REG	116-126				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS

Table 1

Groundwater Sample Designations and QA/QC Sample Quantities
 Supplemental Remedial Investigation
 Fenced Area at Range J - Pelham Range, Parcel 202(7)
 Fort McClellan, Calhoun County, Alabama

(Page 2 of 3)

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
RJR-202-MW14	RJR-202-MW14-GW-JB3034-REG	145.1-160.9				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW15	RJR-202-MW15-GW-JB3035-REG	109-119				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW16	RJR-202-MW16-GW-JB3036-REG	139-154	RJR-202-MW16-GW-JB3037-FD	RJR-202-MW16-GW-JB3038-FS		TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW17	RJR-202-MW17-GW-JB3039-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW18	RJR-202-MW18-GW-JB3040-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW19	RJR-202-MW19-GW-JB3041-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW20	RJR-202-MW20-GW-JB3042-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW21	RJR-202-MW21-GW-JB3043-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW22	RJR-202-MW22-GW-JB3044-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW23	RJR-202-MW23-GW-JB3045-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW24	RJR-202-MW24-GW-JB3046-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW25	RJR-202-MW25-GW-JB3047-REG	•			RJR-202-MW25-GW-JB3047-MS/MSD	TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW26	RJR-202-MW26-GW-JB3048-REG	•				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS

Table 1

**Groundwater Sample Designations and QA/QC Sample Quantities
Supplemental Remedial Investigation
Fenced Area at Range J - Pelham Range, Parcel 202(7)
Fort McClellan, Calhoun County, Alabama**

(Page 3 of 3)

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples			Analytical Suite
			Field Duplicates	Field Splits	MS/MSD	
RJR-202-MW27	RJR-202-MW27-GW-JB3049-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW28	RJR-202-MW28-GW-JB3050-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW29	RJR-202-MW29-GW-JB3051-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW30	RJR-202-MW30-GW-JB3052-REG	*	RJR-202-MW30-GW-JB3053-FD			TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW31	RJR-202-MW31-GW-JB3054-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW32	RJR-202-MW32-GW-JB3055-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW33	RJR-202-MW33-GW-JB3056-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW34	RJR-202-MW34-GW-JB3057-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW35	RJR-202-MW35-GW-JB3058-REG	*	RJR-202-MW35-GW-JB3059-FD			TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS
RJR-202-MW36	RJR-202-MW36-GW-JB3060-REG	*				TCL VOCs, Diss/Tot TAL Metals, TOC, Nitrate/Nitrite, Sulfate/Sulfite, Hardness, TDS/TSS

ft - Foot

Reg - Regular field sample

TCL - Target compound list

TAL - Target analyte list

VOC - Volatile organic compound

*Sample depth will depend on where sufficient first water is encountered to collect a water sample.

TOC - Total organic carbon.

TDS/TSS - Total dissolved solids/total suspended solids

QA/QC - Quality assurance/quality control.

MS/MSD - Matrix spike/matrix spike duplicate.

Diss/Tot - Both dissolved and total metals analyses will be completed.

Table 2
Analytical Samples
Supplemental Remedial Investigation Addendum
Fenced Area at Range J - Pelham Range, Parcel 202(7)
Fort McClellan, Calhoun County, Alabama

Parameters	Analysis Method	Sample Matrix	TAT Needed	Field Samples			QA/QC Samples ^a					EMAX	QA Lab
				No. of Sample Points	No. of Events	No. of Field Samples	Field Dups (10%)	Splits w/ QA Lab (5%)	MS/MSD (5%)	Trip Blank (1/ship)	Eq. Rinse (1/wk/matrix)	Total No. Analysis	Total No. Analysis
Range J Pelham Range - Parcel 202(7): 36 water matrix (36 groundwater samples)													
TCL VOCs	8260B	water	normal	36	1	36	4	2	2	9	3	56	2
Tot TAL Metals	6010B/7000	water	normal	36	1	36	4	2	2		3	47	2
Diss TAL Metals	6010B/7000	water	normal	36	1	36	4	2	2		3	47	2
TOC	9060	water	normal	36	1	36	4	2	2		3	47	2
Nitrate/Nitrite	353.1	water	normal	36	1	36	4	2	2		3	47	2
Sulfate/Sulfite	300/376.1	water	normal	36	1	36	4	2	2		3	47	2
Hardness	130.2	water	normal	36	1	36	4	2	2		3	47	2
TDS/TSS	160.1/160.2	water	normal	36	1	36	4	2	2		3	47	2
Range J - Pelham Range Parcel 202(7) Subtotal:				288	32	16	16	9	24	385	16		

^a Field duplicate, QA split, and MS/MSD samples were calculated as a percentage of the field samples collected per site and were rounded to the nearest whole number. Trip blank samples will be collected in association with water matrix samples for VOC analysis only. Assumed four field samples per day to estimate trip blanks. Equipment blanks will be collected once per event whenever sampling equipment is field decontaminated and re-used. They will be repeated weekly for sampling events that are anticipated to last more than 1 week. Assumed 20 field samples will be collected per week to estimate number of equipment blanks.

Ship samples to:
 EMAX Laboratories, Inc.
 630 Maple Avenue
 Torrance, California
 Attn: Elizabeth McIntyre
 Tel: 310-618-8889
 Fax: 310-618-0818

USACE Laboratory split samples
 are shipped to:

U.S. Army Engineer District, Savannah
 Environmental & Materials District
 Attn: Sample Receiving
 200 North Cobb Parkway
 Building 400, Suite 404
 Marietta, Georgia 30062
 Tel: 678-354-0310

TCL - Target compound list
 TAL - Target analyte list.
 VOC - Volatile organic compound.
 TOC - Total organic carbon.
 Diss - Dissolved.

Tot - Total.
 TDS/TSS - Total dissolved solids/total suspended solids
 QA/QC - Quality assurance/quality control.
 MS/MSD - Matrix spike/matrix spike duplicate.
 TAT - Turnaround time.