



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW	076SB-0112M-0001-SO
Lab Sample ID:	240-18544-29	240-17317-18	240-17796-17	240-17796-18	240-18544-31
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/8/2012	11/8/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG	47 U	0.94 J	2.0 U	2.0 U
					45 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-U5-UST	76-U20-SD2	76-U20-SD2	76-U20-SD3	76-U20-SD4
Field Sample ID:	076SB-0114M-0001-SO	076SD-00010-0001-SD	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD
Lab Sample ID:	240-18544-33	240-17317-20	240-17317-19	240-17317-21	240-17317-22
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/6/2012	11/6/2012	11/6/2012
Field QC:		Field Duplicate			
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG 46 U	1.9 J	2.5 J	2.1 J	0.86 J

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Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76						
Location ID:	76-U20-SW2	76-102-BB-SB4	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	
Field Sample ID:	076SW-0015-0001-SW	076SB-0098M-0001-SO	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	
Lab Sample ID:	240-17796-19	240-18544-16	240-18544-19	240-18544-20	240-18703-24	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	11/8/2012	12/6/2012	12/6/2012	12/6/2012	12/11/2012	
Field QC:						
Analysis Information:	1X	1X	1X	1X	1X	
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)						
Nitrocellulose	MG/KG	2.0 U	38 U	46 U	45 U	2.0 UJ

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MG/KG = Milligrams per Kilogram
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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-A3-DU1-SB5	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076-0067-0001-ER	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17796-20	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG	2.0 U	50 UJ	45 UJ	51 U
					50 U

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MG/KG = Milligrams per Kilogram
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UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-102-PCA-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG	46 U	48 U	46 U	44 U
					46 U

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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate	Field Duplicate	Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG	49 U	49 U	50 U	49 U
				49 U	47 U

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



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Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG	45 U	48 U	47 U	50 U
					51 U

Notes:

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QC = Quality Control

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MG/L = Milligrams per Liter
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Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)					
Nitrocellulose	MG/KG	51 U	46 U	61 U	46 U
					50 U

Notes:

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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76				
Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5	
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO	
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16	
Lab Name:	TAM0	TAM0	TAM0	
Sample Date:	11/15/2012	11/15/2012	11/15/2012	
Field QC:				
Analysis Information:	1X	1X	1X	
Nitrogen, Nitrate-Nitrite (Colorimetric Units Automated, Cadmium Reduction)				
Nitrocellulose	MG/KG	51 U	47 U	49 U

Notes:

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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A1-UST-SB2	76-A6-UST-SB3
Field Sample ID:	076-0140-0001-ER	076SB-0078-0001-SO
Lab Sample ID:	240-18703-24	240-18544-18
Lab Name:	TAM0	TAM0
Sample Date:	12/11/2012	11/16/2012
Field QC:		
Analysis Information:	1X	1X

**Modified SW8015 for the
Determination of Diesel Range
Organics in Soil and Water, GC/FID**

Units

C10-C20 Diesel Range Organics	UG/L	480 U	18 U
C20-C34 Motor Oil Range Organics	UG/L	480 U	18 U

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Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SS	76-A1-UST-SB2	76-A1-UST-SB3	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SS-0027-0001-TB	076-0140-0001-ER	076-0141-0001-TB	076-0067-0001-ER	076SB-0078-0001-SO
Lab Sample ID:	240-17317-25	240-18703-24	240-18703-25	240-17796-20	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/7/2012	12/11/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Modified SW8015 for the
Determination of Gasoline Range
Organics in Soil and Water, GC/FID

Units

Petroleum Hydrocarbons C6-C12	UG/L	55 J	100 U	27 J	33 J	97 U
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Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
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RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U3-UST-SB4	76-U3-UST-SB5	76-U3-UST-SB6	76-A6-UST-SB13
Field Sample ID:	076SB-0143-0001-TB	076SB-0144-0001-TB	076SB-0145-0001-TB	076-0142-0001-TB
Lab Sample ID:	240-18703-5	240-18703-6	240-18703-7	240-18703-26
Lab Name:	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/11/2012	12/11/2012	12/11/2012	12/11/2012
Field QC:				
Analysis Information:	1X	1X	1X	1X
Modified SW8015 for the Determination of Gasoline Range Organics in Soil and Water, GC/FID				
	Units			
Petroleum Hydrocarbons C6-C12	UG/L	29 J	27 J	100 U
				100 U

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Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X,5X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

	Units				
Aluminum	MG/KG	8100	6700	9100	170
Antimony	MG/KG	0.082 J	0.082 J	0.87 UJ	2.0 U
Arsenic	MG/KG	15	14	9.4	0.67 J
Barium	MG/KG	38	32	65	22
Beryllium	MG/KG	0.43	0.38	0.54	1.0 U
Cadmium	MG/KG	0.16	0.15	0.21	2.0 U
Calcium	MG/KG	2900	3300	1600 J	48000
Chromium	MG/KG	17	14	15 J	2.0 U
Cobalt	MG/KG	8.8	7.4	9.6	1.0 U
Copper	MG/KG	17	14	15	4.0 U
Iron	MG/KG	22000	21000	17000	440
Lead	MG/KG	11	9.8	29	1.0 U
Magnesium	MG/KG	2500	2100	1900	11000
Manganese	MG/KG	400	350	330	98

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RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:	076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:	240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:		Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X,5X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

	Units				
Aluminum	MG/KG	7600	7900	7600	7800
Antimony	MG/KG	0.13 J	0.10 J	0.088 J	0.093 J
Arsenic	MG/KG	13	12	13	14
Barium	MG/KG	63	57	36	37
Beryllium	MG/KG	0.48	0.50	0.35	0.35
Cadmium	MG/KG	0.31	0.28	0.15	0.15
Calcium	MG/KG	5400	5900	530	570
Chromium	MG/KG	17	13	12	12
Cobalt	MG/KG	8.2	7.4	8.0	8.2
Copper	MG/KG	18	17	16	17
Iron	MG/KG	20000	19000	20000	20000
Lead	MG/KG	15	15	11	12
Magnesium	MG/KG	2400	2600	1900	1900
Manganese	MG/KG	520	440	420	430

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RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X,5X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

Plasma/Mass Spectrometry	Units					
Aluminum	MG/KG	7500	9800	8200	68	7700
Antimony	MG/KG	0.96 UJ	0.99 J	0.46 J	2.0 U	0.11 J
Arsenic	MG/KG	9.5	7.8	7.1	0.50 J	13
Barium	MG/KG	57	190	63	25	34
Beryllium	MG/KG	0.45	0.49	0.40	1.0 U	0.41
Cadmium	MG/KG	0.19 U	1.9	0.41	2.0 U	0.15
Calcium	MG/KG	1800 J	3000 J	1700 J	40000	780
Chromium	MG/KG	44 J	23 J	16 J	2.0 U	14
Cobalt	MG/KG	7.3	6.1	5.1	1.0 U	7.0
Copper	MG/KG	15	32	16	1.9 J	16
Iron	MG/KG	19000	22000 J	17000 J	260	24000
Lead	MG/KG	19	100	49	1.0 U	16 J
Magnesium	MG/KG	1800	1500	1500	9300	1900
Manganese	MG/KG	310	330	270	48	290

Notes:

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Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	10X,1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units			
Aluminum	MG/KG	5900	17000	6800	7900
Antimony	MG/KG	0.11 J	0.23 J	0.18 J	0.072 J
Arsenic	MG/KG	14	7.8	6.7	14
Barium	MG/KG	32	170	52	53
Beryllium	MG/KG	0.43	2.1	0.60	0.46
Cadmium	MG/KG	0.18	0.30	0.16	0.17
Calcium	MG/KG	1000	78000	14000	1600
Chromium	MG/KG	14	24	13	16
Cobalt	MG/KG	8.4	5.3	4.2	8.6
Copper	MG/KG	16	10	8.7	16
Iron	MG/KG	24000	15000	14000	22000
Lead	MG/KG	13	63	14	11
Magnesium	MG/KG	1800	11000	2400	2400
Manganese	MG/KG	410	1900	650	350

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	10X,1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units				
Aluminum	MG/KG	7100	11000	11000	7300 J	5900
Antimony	MG/KG	0.065 J	0.16 J	0.18 U	0.11 J	0.11 J
Arsenic	MG/KG	12	8.7	13	11	14
Barium	MG/KG	38	140	86	50	41
Beryllium	MG/KG	0.39	1.8	0.65	0.44	0.37
Cadmium	MG/KG	0.16	0.33	0.24	0.14	0.14
Calcium	MG/KG	1500	57000	2400	950	890
Chromium	MG/KG	14	27	20	18	13
Cobalt	MG/KG	7.5	3.7	8.3	7.3	7.2
Copper	MG/KG	15	11	16	12	16
Iron	MG/KG	20000	12000	23000 J	22000 J	22000
Lead	MG/KG	10	46	62	12	11
Magnesium	MG/KG	2100	6600	2300	1500	1600
Manganese	MG/KG	340	1500	570	590 J	470

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	1X,5X	1X	1X	1X,5X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

	Units				
Aluminum	MG/KG	9100	9900	10000	9800
Antimony	MG/KG	0.24 J	0.54	0.10 J	0.21 J
Arsenic	MG/KG	13	29	14	15
Barium	MG/KG	98	60	59	73
Beryllium	MG/KG	0.64	0.56	0.51	0.82
Cadmium	MG/KG	0.47	0.23	0.19	0.59
Calcium	MG/KG	6800	3600	1200	9700
Chromium	MG/KG	22	19	17	22
Cobalt	MG/KG	7.3	9.9	8.3	7.0
Copper	MG/KG	17	16	17	18
Iron	MG/KG	22000	24000	23000	22000
Lead	MG/KG	34	23	12	33
Magnesium	MG/KG	2700	2400	2400	3000
Manganese	MG/KG	580	470	470	690

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X,5X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units				
Aluminum	MG/KG	5800	13000	8000	8000	9500
Antimony	MG/KG	0.079 J	0.31 J	0.16	0.12 J	0.23 J
Arsenic	MG/KG	11	12	13	12	17
Barium	MG/KG	23	130	42	39	47
Beryllium	MG/KG	0.27	1.7	0.43	0.43	0.51
Cadmium	MG/KG	0.13	1.1	0.11	0.12	0.13
Calcium	MG/KG	1200	44000	3400	3300	970
Chromium	MG/KG	8.6	27	16	16	17
Cobalt	MG/KG	5.3	6.1	10	9.1	9.7
Copper	MG/KG	15	17	16	17	17
Iron	MG/KG	15000	20000	22000	25000	29000
Lead	MG/KG	8.7	55	17	20	24
Magnesium	MG/KG	1300	7400	2500	2600	2100
Manganese	MG/KG	270	1300	490	460	380

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
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Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units			
Aluminum	MG/KG	11000	6600	6600	7700
Antimony	MG/KG	0.11 J	0.11 J	0.12 J	0.10 J
Arsenic	MG/KG	13	13	16	14
Barium	MG/KG	49	29	30	36
Beryllium	MG/KG	0.50	0.42	0.47	0.46
Cadmium	MG/KG	0.13	0.19	0.20	0.19
Calcium	MG/KG	1000	700	640	2100
Chromium	MG/KG	18	14	15	16
Cobalt	MG/KG	8.6	8.3	8.6	8.6
Copper	MG/KG	17	17	18	15
Iron	MG/KG	25000	26000	26000	23000
Lead	MG/KG	20	14	14	11
Magnesium	MG/KG	2300	1900	1800	2500
Manganese	MG/KG	310	510	480	340

Notes:

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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

Plasma/Mass Spectrometry	Units					
Aluminum	MG/KG	9700	7500	30 U	7300	6700
Antimony	MG/KG	0.12 J	0.083 J	2.0 U	0.058 J	0.076 J
Arsenic	MG/KG	15	13	1.0 U	10	11
Barium	MG/KG	44	38	0.43 J	63	39
Beryllium	MG/KG	0.49 J	0.50	1.0 U	0.46	0.39
Cadmium	MG/KG	0.15	0.21	1.0 U	0.24	0.23
Calcium	MG/KG	1200	1400	82 J	4000	2000
Chromium	MG/KG	20	14	0.76 J	16	16
Cobalt	MG/KG	8.1	10	0.036 J	6.0	7.0
Copper	MG/KG	14	16	2.0 U	14	16
Iron	MG/KG	24000	23000	50 U	19000	20000
Lead	MG/KG	12	11	1.0 U	9.5	18
Magnesium	MG/KG	2300	2600	100 U	2300	1900
Manganese	MG/KG	340	360	1.9 J	410	310

Notes:

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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:	240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units				
Aluminum	MG/KG	7700	6800	6600	5800	8000
Antimony	MG/KG	0.13 J	0.041 J	0.12 J	0.10 J	0.18
Arsenic	MG/KG	11	8.4	15	10	16
Barium	MG/KG	42	38	43	31	69
Beryllium	MG/KG	0.38	0.30	0.43	0.33	0.59
Cadmium	MG/KG	0.16	0.11	0.19	0.12	0.21
Calcium	MG/KG	1300	1100	3700	1700	7100
Chromium	MG/KG	14	12	18	12	18
Cobalt	MG/KG	7.5	5.2	8.1	5.9	7.5
Copper	MG/KG	13	13	17	11	21
Iron	MG/KG	19000	15000	22000	17000	19000
Lead	MG/KG	13	17	14	7.8	13
Magnesium	MG/KG	2000	1500	2100	1500	2500
Manganese	MG/KG	250	230	330	230	500

Notes:

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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

	Units				
Aluminum	MG/KG	7800	60 U	8600	7100
Antimony	MG/KG	0.084 J	0.34 J	0.11 J	0.065 J
Arsenic	MG/KG	13	5.0 U	12	12
Barium	MG/KG	44	5.0 U	69	36
Beryllium	MG/KG	0.41	1.0 U	0.61	0.42
Cadmium	MG/KG	0.13	2.0 U	0.20	0.15
Calcium	MG/KG	1200	2000 U	7300	1500
Chromium	MG/KG	15	0.60 J	17	14
Cobalt	MG/KG	8.4	1.0 U	7.8	8.8
Copper	MG/KG	15	4.0 U	14	14
Iron	MG/KG	21000	150 U	20000	20000
Lead	MG/KG	28	1.0 U	26	10
Magnesium	MG/KG	2000	1000 U	2700	2000
Manganese	MG/KG	500	3.5 J	560	340

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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SS	76-U20-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SS-0022M-0001-SO	076SB-0053M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-2	240-17796-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	1X,5X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units				
Aluminum	MG/KG	8900	11000	10000	8400	7700
Antimony	MG/KG	0.43 J	0.19 U	0.17 U	0.10 J	0.064 J
Arsenic	MG/KG	15	11	11	11	12
Barium	MG/KG	62	100	88	51	36
Beryllium	MG/KG	0.66	0.62	0.54	0.51	0.39
Cadmium	MG/KG	0.33	0.20	0.15 J	0.13	0.15
Calcium	MG/KG	4500	1100	1100	4300	1700
Chromium	MG/KG	17	16	15	17	17
Cobalt	MG/KG	7.5	9.4	9.4	8.2	7.3
Copper	MG/KG	20	12	12	13	15
Iron	MG/KG	20000	19000 J	21000 J	22000	20000
Lead	MG/KG	37	38	36	13	11
Magnesium	MG/KG	2400	2000	2100	2200	2300
Manganese	MG/KG	460	760	700	400	270

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1	76-U4-DU1-SB2	76-U4-DU1-SB3
Field Sample ID:	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO	076SB-0026M-0001-SO	076SB-0027M-0001-SO
Lab Sample ID:	240-17796-11	240-17796-10	240-17796-4	240-17796-5	240-17796-6
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

	Units				
Aluminum	MG/KG	6700	7800	6600	6300
Antimony	MG/KG	0.058 J	0.12 J	0.092 J	0.095 J
Arsenic	MG/KG	14	9.2	12	13
Barium	MG/KG	30	52	41	37
Beryllium	MG/KG	0.38	0.41	0.35	0.39
Cadmium	MG/KG	0.15	0.29	0.17	0.15
Calcium	MG/KG	5000	2400	1100	700
Chromium	MG/KG	15	18	17	16
Cobalt	MG/KG	8.6	6.1	7.0	8.5
Copper	MG/KG	17	14	17	15
Iron	MG/KG	22000	19000	21000	21000
Lead	MG/KG	9.8	20	11	13
Magnesium	MG/KG	3400	1600	1800	1700
Manganese	MG/KG	360	290	300	450

Notes:

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1	76-U4-DU2-SB2	76-U4-DU2-SB3
Field Sample ID:	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO	076SB-0033M-0001-SO	076SB-0034M-0001-SO
Lab Sample ID:	240-17796-7	240-17796-8	240-17768-19	240-17768-20	240-17768-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units			
Aluminum	MG/KG	6100	6000	9500	11000
Antimony	MG/KG	0.090 J	0.11 J	0.13 J	0.11 J
Arsenic	MG/KG	13	11	16	14
Barium	MG/KG	37	48	60	57
Beryllium	MG/KG	0.34	0.47	0.58	0.55
Cadmium	MG/KG	0.13	0.17	0.57	0.15
Calcium	MG/KG	630	1600	1700	1400
Chromium	MG/KG	12	18	38	28
Cobalt	MG/KG	7.8	7.2	8.7	8.9
Copper	MG/KG	15	13	17	15
Iron	MG/KG	20000	24000	29000	24000
Lead	MG/KG	11	16	17	12
Magnesium	MG/KG	1600	1400	2000	2500
Manganese	MG/KG	380	710	790	420

Notes:

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UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1	76-U5-DU1-SB2	76-U5-DU1-SB3
Field Sample ID:	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO	076SB-0040M-0001-SO	076SB-0041M-0001-SO
Lab Sample ID:	240-17768-22	240-17768-23	240-17768-11	240-17768-12	240-17768-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry

	Units				
Aluminum	MG/KG	9500	8200	8500	9300
Antimony	MG/KG	0.12 J	0.082 J	0.071 J	0.079 J
Arsenic	MG/KG	13	12	12	13
Barium	MG/KG	78	40	36	36
Beryllium	MG/KG	0.56	0.38	0.38	0.42
Cadmium	MG/KG	0.26	0.17	0.15	0.14
Calcium	MG/KG	2200	880	810	2700
Chromium	MG/KG	18	15	12	17
Cobalt	MG/KG	9.3	7.1	7.6	5.7
Copper	MG/KG	19	17	16	16
Iron	MG/KG	22000	21000	19000	18000
Lead	MG/KG	18	11	12	11
Magnesium	MG/KG	2600	2100	1800	2000
Manganese	MG/KG	530	310	280	190

Notes:

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UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2
Field Sample ID:	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO
Lab Sample ID:	240-17768-14	240-17768-15	240-18544-21	240-18544-22	240-18544-23
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units			
Aluminum	MG/KG	5900	7700	7900	7800
Antimony	MG/KG	0.063 J	0.079 J	0.12 J	0.10 J
Arsenic	MG/KG	11	14	15	14
Barium	MG/KG	26	35	34	32
Beryllium	MG/KG	0.30	0.41	0.53	0.46
Cadmium	MG/KG	0.13	0.17	0.19	0.16
Calcium	MG/KG	1000	2400	680	640
Chromium	MG/KG	8.4	13	22	16
Cobalt	MG/KG	6.4	6.9	9.2	9.0
Copper	MG/KG	15	17	16	15
Iron	MG/KG	16000	20000	27000	22000
Lead	MG/KG	9.5	12	15	13
Magnesium	MG/KG	1500	1800	2000	2000
Manganese	MG/KG	360	360	430	350

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5
Field Sample ID:	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO
Lab Sample ID:	240-18544-24	240-18544-25	240-18544-26	240-18544-27	240-18544-28
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate	Field Duplicate	Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units			
Aluminum	MG/KG	11000	6100	7500	7100
Antimony	MG/KG	0.086 J	0.13 J	0.14 J	0.18
Arsenic	MG/KG	14	13	15	19
Barium	MG/KG	50	29	30	35
Beryllium	MG/KG	0.65	0.42	0.45	0.46
Cadmium	MG/KG	0.17	0.16	0.15	0.21
Calcium	MG/KG	1000	1200	1100	1100
Chromium	MG/KG	17	16	16	16
Cobalt	MG/KG	10	7.9	7.9	9.6
Copper	MG/KG	15	16	17	18
Iron	MG/KG	27000	22000	22000	25000
Lead	MG/KG	11	15	12	18
Magnesium	MG/KG	3300	1700	1900	2200
Manganese	MG/KG	320	370	320	350

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB1	76-U20-DU1-SB2	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0055M-0001-SO	076SB-0056M-0001-SO	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-12	240-17796-13	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Trace Metals by Inductively Coupled Plasma/Mass Spectrometry		Units				
Aluminum	MG/KG	7200	7300	8500	8000	6600
Antimony	MG/KG	0.053 J	0.065 J	0.063 J	0.050 J	0.053 J
Arsenic	MG/KG	15	12	15	16	12
Barium	MG/KG	29	34	37	32	31
Beryllium	MG/KG	0.41	0.37	0.46	0.47	0.37
Cadmium	MG/KG	0.15	0.17	0.13	0.15	0.15
Calcium	MG/KG	5800	2500	4000	4100	2200
Chromium	MG/KG	13	23	19	15	13
Cobalt	MG/KG	9.4	7.5	8.5	9.1	7.6
Copper	MG/KG	16	19	18	16	15
Iron	MG/KG	23000	21000	23000	23000	20000
Lead	MG/KG	9.7	10	11	9.4	10
Magnesium	MG/KG	3800	2500	3200	3700	2600
Manganese	MG/KG	350	330	330	350	300

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant

RVAAP, QAPP Oct. 2012

Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X,5X	1X	1X
Nickel	MG/KG 21	18	18	5.0 U	5.0 U
Potassium	MG/KG 870	700	790	2800	2800
Selenium	MG/KG 0.42 J	0.71	0.65	5.0 U	5.0 U
Silver	MG/KG 0.021 J	0.022 J	0.039 J	1.0 U	1.0 U
Sodium	MG/KG 35	37	42 J	4800	4500
Thallium	MG/KG 0.11	0.093	0.87 U	2.0 U	2.0 U
Vanadium	MG/KG 14	12	16	5.0 U	5.0 U
Zinc	MG/KG 52	40	58	40 U	40 U

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH

MG/KG = Milligrams per Kilogram

MG/L = Milligrams per Liter

UG/KG = Micrograms per Kilogram

UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:		076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:		240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:			Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:		1X	1X	1X	1X	1X,5X
Nickel	MG/KG	21	18	17	17	22
Potassium	MG/KG	650	730	550	580	670
Selenium	MG/KG	0.79	0.65	0.51	0.48	0.54
Silver	MG/KG	0.031 J	0.028 J	0.019 J	0.020 J	0.029 J
Sodium	MG/KG	43	42	20	22	490 U
Thallium	MG/KG	0.13	0.12	0.12	0.12	0.97 U
Vanadium	MG/KG	15	15	13	14	15
Zinc	MG/KG	54	52	54	55	59

Notes:

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MG/L = Milligrams per Liter
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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X,5X	1X	1X	1X	1X
Nickel	MG/KG 30	23	12	0.67 J	17
Potassium	MG/KG 590	830	460	2400	820
Selenium	MG/KG 0.52	0.74	0.45 J	5.0 U	0.46 J
Silver	MG/KG 0.029 J	0.16	0.064 J	1.0 U	0.019 J
Sodium	MG/KG 49 J	110	65 J	10000	24
Thallium	MG/KG 0.96 U	0.21 U	0.20 U	2.0 U	0.14
Vanadium	MG/KG 14	17	16	5.0 U	14
Zinc	MG/KG 49	390	69	40 U	56

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	10X,1X	1X	1X	1X
Nickel	MG/KG 21	16	10	22	13
Potassium	MG/KG 780	1100	810	1100	570
Selenium	MG/KG 0.32 J	1.2	0.55	0.40 J	0.38 J
Silver	MG/KG 0.023 J	0.037 J	0.028 J	0.029 J	0.018 J
Sodium	MG/KG 36	330	78	37	26
Thallium	MG/KG 0.13	0.17 U	0.072 J	0.11	0.097
Vanadium	MG/KG 12	16	11	14	13
Zinc	MG/KG 57	70	33	53	35

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MG/KG = Milligrams per Kilogram
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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	10X,1X	1X	1X	1X
Nickel	MG/KG 18	19	20	16	18
Potassium	MG/KG 780	840	1100	570	620
Selenium	MG/KG 0.38 J	1.0	0.58	0.52	0.43 J
Silver	MG/KG 0.021 J	0.039 J	0.17	0.021 J	0.020 J
Sodium	MG/KG 32	280	41 J	21	22
Thallium	MG/KG 0.11	0.16 U	0.18 U	0.15	0.12
Vanadium	MG/KG 14	8.5	19	16	12
Zinc	MG/KG 43	54	100	46 J	51

Notes:

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MG/L = Milligrams per Liter
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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:		076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:		240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:						
Analysis Information:		1X,5X	1X	1X	1X,5X	1X
Nickel	MG/KG	24	21	20	22	17
Potassium	MG/KG	690	830	940	710	810
Selenium	MG/KG	0.57	0.73	0.59	0.65	0.63
Silver	MG/KG	0.052 J	0.052 J	0.025 J	0.051 J	0.026 J
Sodium	MG/KG	54 J	47	44	74 J	30
Thallium	MG/KG	0.18 U	0.16	0.15	0.20 U	0.14
Vanadium	MG/KG	16	18	19	16	18
Zinc	MG/KG	96	57	59	97	50

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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X,5X	1X	1X	1X
Nickel	MG/KG 11	27	19	19	21
Potassium	MG/KG 470	840	720	810	790
Selenium	MG/KG 0.50	0.87	0.44	0.37 J	0.47
Silver	MG/KG 0.015 J	0.047 J	0.028 J	0.026 J	0.025 J
Sodium	MG/KG 21	180	39	41	39
Thallium	MG/KG 0.092	0.17 U	0.13	0.13	0.14
Vanadium	MG/KG 10	14	15	17	18
Zinc	MG/KG 39	86	53	57	63

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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:		076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:		240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate		Field Duplicate		
Analysis Information:		1X	1X	1X	1X	1X
Nickel	MG/KG	20	21	22	21	21
Potassium	MG/KG	820	810	870	1400	870
Selenium	MG/KG	0.39	0.32 J	0.29 J	0.25 J	0.34 J
Silver	MG/KG	0.024 J	0.019 J	0.019 J	0.030 J	0.025 J
Sodium	MG/KG	40	20	22	42	31
Thallium	MG/KG	0.15	0.13	0.13	0.12	0.13
Vanadium	MG/KG	19	13	13	14	14
Zinc	MG/KG	59	62	70	63	64

Notes:

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Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Nickel	MG/KG 20	24	0.47 J	18	17
Potassium	MG/KG 900	980	100 U	1100	620
Selenium	MG/KG 0.76 J	0.30 J	5.0 U	0.43 J	0.33 J
Silver	MG/KG 0.025 J	0.025 J	1.0 U	0.052 J	0.024 J
Sodium	MG/KG 31	37	150	36	31
Thallium	MG/KG 0.19 J	0.13	0.25 J	0.087 J	0.10
Vanadium	MG/KG 17	13	1.0 U	13	14
Zinc	MG/KG 50	70	1.1 J	42	62

Notes:

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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:		076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:		240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:						
Analysis Information:		1X	1X	1X	1X	1X
Nickel	MG/KG	17	13	21	14	20
Potassium	MG/KG	1200	510	810	580	870
Selenium	MG/KG	0.47	0.34 J	0.61	0.30 J	0.64
Silver	MG/KG	0.027 J	0.022 J	0.021 J	0.018 J	0.026 J
Sodium	MG/KG	44	19	29	26	48
Thallium	MG/KG	0.094	0.11	0.15	0.093	0.12
Vanadium	MG/KG	14	12	12	12	15
Zinc	MG/KG	44	34	54	32	50

Notes:

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Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Nickel	MG/KG 17	20	18	17	13
Potassium	MG/KG 620	1000 U	790	800	620
Selenium	MG/KG 0.41	5.0 U	0.61	0.36 J	0.28 J
Silver	MG/KG 0.020 J	1.0 U	0.035 J	0.024 J	0.060 J
Sodium	MG/KG 24	1000 U	55	35	35
Thallium	MG/KG 0.13	0.75 J	0.13	0.097	0.14
Vanadium	MG/KG 15	5.0 U	16	14	7.4
Zinc	MG/KG 43	10 J	55	38	49

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SS	76-U20-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SS-0022M-0001-SO	076SB-0053M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-2	240-17796-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	1X,5X	1X	1X	1X	1X
Nickel	MG/KG 24	18	18	17	20
Potassium	MG/KG 650	830	790	800	750
Selenium	MG/KG 0.71	0.60	0.50	0.56	0.32 J
Silver	MG/KG 0.046 J	0.073 J	0.13	0.026 J	0.024 J
Sodium	MG/KG 47 J	31 J	26 J	44	32
Thallium	MG/KG 0.95 U	0.19 U	0.17 U	0.14	0.11
Vanadium	MG/KG 15	18	18	16	14
Zinc	MG/KG 61	120	77	40	45

Notes:

J = Detected, Estimated
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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1	76-U4-DU1-SB2	76-U4-DU1-SB3
Field Sample ID:	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO	076SB-0026M-0001-SO	076SB-0027M-0001-SO
Lab Sample ID:	240-17796-11	240-17796-10	240-17796-4	240-17796-5	240-17796-6
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Nickel	MG/KG 22	16	19	18	18
Potassium	MG/KG 890	600	620	620	560
Selenium	MG/KG 0.46	0.50	0.39 J	0.41	0.46
Silver	MG/KG 0.027 J	0.22	0.019 J	0.022 J	0.037 J
Sodium	MG/KG 40	25	26	20	17
Thallium	MG/KG 0.11	0.12	0.13	0.13	0.12
Vanadium	MG/KG 12	16	13	13	14
Zinc	MG/KG 50	52	50	49	45

Notes:

J = Detected, Estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1	76-U4-DU2-SB2	76-U4-DU2-SB3
Field Sample ID:		076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO	076SB-0033M-0001-SO	076SB-0034M-0001-SO
Lab Sample ID:		240-17796-7	240-17796-8	240-17768-19	240-17768-20	240-17768-21
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/15/2012	11/15/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:						
Analysis Information:		1X	1X	1X	1X	1X
Nickel	MG/KG	15	17	30	23	19
Potassium	MG/KG	580	500	890	960	860
Selenium	MG/KG	0.51	0.43	0.72	0.71	0.67
Silver	MG/KG	0.013 J	0.024 J	0.031 J	0.026 J	0.026 J
Sodium	MG/KG	17	27	59	34	43
Thallium	MG/KG	0.099	0.11	0.17	0.17	0.16
Vanadium	MG/KG	13	14	18	21	21
Zinc	MG/KG	46	50	200	54	49

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1	76-U5-DU1-SB2	76-U5-DU1-SB3
Field Sample ID:		076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO	076SB-0040M-0001-SO	076SB-0041M-0001-SO
Lab Sample ID:		240-17768-22	240-17768-23	240-17768-11	240-17768-12	240-17768-13
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:						
Analysis Information:		1X	1X	1X	1X	1X
Nickel	MG/KG	22	18	14	15	13
Potassium	MG/KG	770	750	510	740	730
Selenium	MG/KG	0.76	0.52	0.62	0.58	0.56
Silver	MG/KG	0.027 J	0.023 J	0.022 J	0.023 J	0.026 J
Sodium	MG/KG	35	45	21	43	27
Thallium	MG/KG	0.16	0.13	0.12	0.12	0.13
Vanadium	MG/KG	18	15	15	15	18
Zinc	MG/KG	61	46	43	45	42

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2
Field Sample ID:		076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO
Lab Sample ID:		240-17768-14	240-17768-15	240-18544-21	240-18544-22	240-18544-23
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/14/2012	11/14/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:					Field Duplicate	
Analysis Information:		1X	1X	1X	1X	1X
Nickel	MG/KG	13	14	23	19	24
Potassium	MG/KG	500	690	840	850	1000
Selenium	MG/KG	0.47	0.63	0.29 J	0.24 J	0.34 J
Silver	MG/KG	0.016 J	0.028 J	0.020 J	0.021 J	0.027 J
Sodium	MG/KG	19	45	28	26	44
Thallium	MG/KG	0.085	0.11	0.13	0.12	0.14
Vanadium	MG/KG	9.9	13	15	13	17
Zinc	MG/KG	39	48	75	59	54

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5
Field Sample ID:	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO
Lab Sample ID:	240-18544-24	240-18544-25	240-18544-26	240-18544-27	240-18544-28
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate	Field Duplicate	Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Nickel	MG/KG 24	21	21	23	21
Potassium	MG/KG 1100	740	950	950	1100
Selenium	MG/KG 0.32 J	0.19 J	0.48	0.59	0.56
Silver	MG/KG 0.025 J	0.022 J	0.020 J	0.029 J	0.025 J
Sodium	MG/KG 47	23	28	31	41
Thallium	MG/KG 0.14	0.11	0.14	0.15	0.14
Vanadium	MG/KG 18	11	13	13	16
Zinc	MG/KG 55	56	60	63	55

Notes:

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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U20-DU1-SB1	76-U20-DU1-SB2	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:		076SB-0055M-0001-SO	076SB-0056M-0001-SO	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:		240-17796-12	240-17796-13	240-17796-14	240-17796-15	240-17796-16
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:						
Analysis Information:		1X	1X	1X	1X	1X
Nickel	MG/KG	22	23	23	23	19
Potassium	MG/KG	940	780	1200	1100	920
Selenium	MG/KG	0.38 J	0.46	0.38 J	0.36 J	0.41 J
Silver	MG/KG	0.027 J	0.023 J	0.026 J	0.022 J	0.030 J
Sodium	MG/KG	42	33	47	43	37
Thallium	MG/KG	0.11	0.11	0.12	0.11	0.10
Vanadium	MG/KG	12	13	14	13	12
Zinc	MG/KG	47	49	62	58	46

Notes:

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UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A1-UST-SB1	76-A1-UST-SB1	76-A1-UST-SB2	76-A1-UST-SB3	76-A6-UST-SB1	
Field Sample ID:	076SB-0132-0001-SO	076SB-0133-0001-SO	076SB-0134-0001-SO	076SB-0135-0001-SO	076SB-0076-0001-SO	
Lab Sample ID:	240-18735-21	240-18735-22	240-18735-23	240-18735-24	240-17810-9	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	12/11/2012	12/11/2012	12/11/2012	12/11/2012	11/16/2012	
Field QC:		Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X	
Chromium, Hexavalent (Colorimetric) Units						
Chromium, Hexavalent	MG/KG	0.99 U	0.39 J	0.37 J	0.92 U	0.33 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A6-UST-SB1	76-A6-UST-SB2	76-A6-UST-SB3	76-A6-UST-SB4	76-A6-UST-SB5
Field Sample ID:	076SB-0089-0001-SO	076SB-0077-0001-SO	076SB-0078-0001-SO	076SB-0079-0001-SO	076SB-0080-0001-SO
Lab Sample ID:	240-17810-22	240-17810-10	240-17810-11	240-17810-12	240-17810-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/16/2012	11/16/2012	11/16/2012	11/16/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X
Chromium, Hexavalent (Colorimetric) Units					
Chromium, Hexavalent	MG/KG	0.45 J	0.61 J	0.80 U	0.80 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A6-UST-SB6	76-A6-UST-SB7	76-A6-UST-SB8	76-A6-UST-SB9	76-U10-DU1-SS
Field Sample ID:	076SB-0081-0001-SO	076SB-0082-0001-SO	076SB-0083-0001-SO	076SB-0084-0001-SO	076SS-0022M-0001-SO
Lab Sample ID:	240-17810-14	240-17810-15	240-17810-16	240-17810-17	240-17796-2
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/16/2012	11/16/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	5X	1X
Chromium, Hexavalent (Colorimetric) Units					
Chromium, Hexavalent	MG/KG 0.80 U	0.80 U	0.80 U	1.8 J	0.80 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U3-UST-SB1	76-U3-UST-SB2	76-U3-UST-SB3	76-U3-UST-SB4	76-U3-UST-SB5	
Field Sample ID:	076SB-0119-0001-SO	076SB-0120-0001-SO	076SB-0121-0001-SO	076SB-0122-0001-SO	076SB-0123-0001-SO	
Lab Sample ID:	240-18735-8	240-18735-9	240-18735-10	240-18735-11	240-18735-12	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	12/11/2012	12/11/2012	12/11/2012	12/11/2012	12/11/2012	
Field QC:						
Analysis Information:	1X	1X	1X	1X	1X	
Chromium, Hexavalent (Colorimetric) Units						
Chromium, Hexavalent	MG/KG	0.91 U	0.34 J	0.90 U	0.94 U	0.92 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U3-UST-SB6	76-U6-UST-SB1	76-U6-UST-SB2	76-U6-UST-SB2	76-U6-UST-SB3
Field Sample ID:	076SB-0124-0001-SO	076SB-0125-0001-SO	076SB-0126-0001-SO	076SB-0127-0001-SO	076SB-0128-0001-SO
Lab Sample ID:	240-18735-13	240-18735-14	240-18735-15	240-18735-16	240-18735-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/11/2012	12/12/2012	12/11/2012	12/11/2012	12/11/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
Chromium, Hexavalent (Colorimetric) Units					
Chromium, Hexavalent	MG/KG 0.92 U	0.88 U	0.31 J	0.89 U	0.88 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U6-UST-SB4	76-U6-UST-SB5	76-U6-UST-SB6	76-A6-UST-SB10	76-A6-UST-SB11	
Field Sample ID:	076SB-0129-0001-SO	076SB-0130-0001-SO	076SB-0131-0001-SO	076SB-0085-0001-SO	076SB-0086-0001-SO	
Lab Sample ID:	240-18735-18	240-18735-19	240-18735-20	240-17810-18	240-17810-19	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	12/11/2012	12/12/2012	12/12/2012	11/16/2012	11/16/2012	
Field QC:						
Analysis Information:	1X	1X	1X	5X	1X	
Chromium, Hexavalent (Colorimetric) Units						
Chromium, Hexavalent	MG/KG	0.89 U	0.88 U	0.87 U	1.4 J	0.80 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76				
Location ID:	76-A6-UST-SB12	76-A6-UST-SB13	76-A6-UST-SB11A	
Field Sample ID:	076SB-0088-0001-SO	076SB-0136-0001-SO	076SB-0087-0001-SO	
Lab Sample ID:	240-17810-21	240-18735-25	240-17810-20	
Lab Name:	TAM0	TAM0	TAM0	
Sample Date:	11/16/2012	12/11/2012	11/16/2012	
Field QC:				
Analysis Information:	25X	1X	1X	
Chromium, Hexavalent (Colorimetric) Units				
Chromium, Hexavalent	MG/KG	7.1 J	0.92 U	0.50 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SW	76-U20-SW	76-U20-SW2	76-A1-UST-SB2	76-A3-DU1-SB5
Field Sample ID:	076SW-0013-0001-SW	076SW-0014-0001-SW	076SW-0015-0001-SW	076-0140-0001-ER	076-0067-0001-ER
Lab Sample ID:	240-17422-13	240-17422-14	240-17422-15	240-18703-24	240-17796-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/8/2012	11/8/2012	11/8/2012	12/11/2012	11/15/2012
Field QC:		Field Duplicate			
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Water (Manual Cold-Vapor Technique)	Units				
Mercury	UG/L	0.20 U	0.20 U	0.20 U	0.20 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U4-UST	76-U4-UST	
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SB-0112M-0001-SO	076SB-0113M-0001-SO	
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-18544-31	240-18544-32	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	12/6/2012	12/6/2012	11/6/2012	12/6/2012	12/6/2012	
Field QC:		Field Duplicate			Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X	
Mercury in Soil (Manual Cold-Vapor Technique)		Units				
Mercury	MG/KG	0.023 J	0.022 J	0.097 U	0.030 J	0.031 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-UST	76-U5-UST	76-U20-SD2	76-U20-SD2	76-U20-SD3
Field Sample ID:	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD	076SD-0009-0001-SD	076SD-0011-0001-SD
Lab Sample ID:	240-18544-33	240-18544-34	240-17317-20	240-17317-19	240-17317-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/6/2012	11/6/2012
Field QC:		Field Duplicate	Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique) Units					
Mercury	MG/KG	0.030 J	0.033 J	0.11 U	0.095 U
				0.095 U	0.097 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD4	76-102-BB-SB	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB
Field Sample ID:	076SD-0012-0001-SD	076SB-0090M-0001-SO	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO
Lab Sample ID:	240-17317-22	240-18544-7	240-18544-8	240-17317-3	240-17796-22
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	12/6/2012	12/6/2012	11/6/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.092 U	0.032 J	0.030 J	0.090 U
					0.026 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	
Field Sample ID:	076SB-0061M-0001-SO	076SB-0068M-0001-SO	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	
Lab Sample ID:	240-17796-23	240-17810-1	240-17810-2	240-17317-4	240-17422-1	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	11/15/2012	11/16/2012	11/16/2012	11/6/2012	11/7/2012	
Field QC:						
Analysis Information:	1X	1X	1X	1X	1X	
Mercury in Soil (Manual Cold-Vapor Technique)		Units				
Mercury	MG/KG	0.017 J	0.015 J	0.025 J	0.10 U	0.13 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB	76-U4-DU1-SB	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	
Field Sample ID:	076SB-0023M-0001-SO	076SB-0024M-0001-SO	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	
Lab Sample ID:	240-17796-1	240-17796-3	240-17317-10	240-17768-17	240-17768-18	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	11/15/2012	11/15/2012	11/6/2012	11/14/2012	11/14/2012	
Field QC:						
Analysis Information:	1X	1X	1X	1X	1X	
Mercury in Soil (Manual Cold-Vapor Technique)		Units				
Mercury	MG/KG	0.038 J	0.028 J	0.11 U	0.037 J	0.040 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SS	76-U5-DU1-SB	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	
Field Sample ID:	076SS-0004M-0001-SO	076SB-0037M-0001-SO	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	
Lab Sample ID:	240-17317-9	240-17768-9	240-17768-10	240-17317-2	240-18544-10	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	12/6/2012	
Field QC:						
Analysis Information:	1X	1X	1X	1X	1X	
Mercury in Soil (Manual Cold-Vapor Technique)		Units				
Mercury	MG/KG	0.097 U	0.038 J	0.022 J	0.11 U	0.038 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB1	76-102-BB-SB2	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3
Field Sample ID:	076SB-0093M-0001-SO	076SB-0094M-0001-SO	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO
Lab Sample ID:	240-18544-11	240-18544-12	240-18544-13	240-18544-14	240-18544-15
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique) Units					
Mercury	MG/KG	0.039 J	0.042 J	0.038 J	0.031 J
				0.031 J	0.026 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB4	76-102-BB-SB5	76-102-PCA-SB	76-102-PCA-SB	76-A3-DU1-SB1
Field Sample ID:	076SB-0098M-0001-SO	076SB-0099M-0001-SO	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076SB-0062M-0001-SO
Lab Sample ID:	240-18544-16	240-18544-17	240-18544-19	240-18544-20	240-17796-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.027 J	0.028 J	0.032 J	0.021 J
				0.021 J	0.028 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-A3-DU1-SB1	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3
Field Sample ID:	076SB-0070M-0001-SO	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO
Lab Sample ID:	240-17810-3	240-17796-25	240-17810-4	240-17796-26	240-17810-5
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/16/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.026 J	0.024 J	0.023 J	0.028 J
					0.032 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0065M-0001-SO	076SB-0073M-0001-SO	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17796-27	240-17810-6	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.027 J	0.029 J	0.043 J	0.024 J
					0.029 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SS	76-U20-DU1-SB	
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SS-0022M-0001-SO	076SB-0053M-0001-SO	
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-2	240-17796-9	
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0	
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012	
Field QC:			Field Duplicate			
Analysis Information:	1X	1X	1X	1X	1X	
Mercury in Soil (Manual Cold-Vapor Technique)		Units				
Mercury	MG/KG	0.11 U	0.10 U	0.090 U	0.033 J	0.027 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1	76-U4-DU1-SB2	76-U4-DU1-SB3
Field Sample ID:	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO	076SB-0026M-0001-SO	076SB-0027M-0001-SO
Lab Sample ID:	240-17796-11	240-17796-10	240-17796-4	240-17796-5	240-17796-6
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.016 J	0.045 J	0.029 J	0.027 J
				0.027 J	0.042 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1	76-U4-DU2-SB2	76-U4-DU2-SB3
Field Sample ID:	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO	076SB-0033M-0001-SO	076SB-0034M-0001-SO
Lab Sample ID:	240-17796-7	240-17796-8	240-17768-19	240-17768-20	240-17768-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.026 J	0.036 J	0.042 J	0.041 J
				0.041 J	0.031 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1	76-U5-DU1-SB2	76-U5-DU1-SB3
Field Sample ID:	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO	076SB-0040M-0001-SO	076SB-0041M-0001-SO
Lab Sample ID:	240-17768-22	240-17768-23	240-17768-11	240-17768-12	240-17768-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.032 J	0.022 J	0.036 J	0.027 J
				0.027 J	0.039 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2
Field Sample ID:	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO
Lab Sample ID:	240-17768-14	240-17768-15	240-18544-21	240-18544-22	240-18544-23
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.039 J	0.036 J	0.030 J	0.031 J
					0.030 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
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Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76						
Location ID:	76-102-PCA-SB2		76-102-PCA-SB3	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5
Field Sample ID:	076SB-0105M-0001-SO		076SB-0106M-0001-SO	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO
Lab Sample ID:	240-18544-24		240-18544-25	240-18544-26	240-18544-27	240-18544-28
Lab Name:	TAM0		TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012		12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate	Field Duplicate		
Analysis Information:	1X		1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units				
Mercury	MG/KG	0.030 J	0.026 J	0.025 J	0.030 J	0.029 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB1	76-U20-DU1-SB2	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0055M-0001-SO	076SB-0056M-0001-SO	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-12	240-17796-13	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Mercury in Soil (Manual Cold-Vapor Technique)		Units			
Mercury	MG/KG	0.017 J	0.021 J	0.021 J	0.014 J
				0.014 J	0.018 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-U4-UST	76-U5-UST	76-102-BB-SB4	76-102-PCA-SB
Field Sample ID:	076SB-0110M-0001-SO	076SB-0112M-0001-SO	076SB-0114M-0001-SO	076SB-0098M-0001-SO	076SB-0101M-0001-SO
Lab Sample ID:	240-18544-29	240-18544-31	240-18544-33	240-18544-16	240-18544-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:					
Analysis Information:	5X	10X	1X	1X	1X

Organochlorine Pesticides and PCBs by Capillary GC

	Units				
Aldrin	UG/KG	20 U	40 U	4.0 U	4.0 U
alpha BHC (alpha Hexachlorocyclohexane)	UG/KG	12 U	25 U	2.5 U	2.5 U
alpha Endosulfan	UG/KG	8.5 U	17 U	1.7 U	1.7 U
alpha-Chlordane	UG/KG	15 U	30 U	3.0 U	3.0 U
beta BHC (beta Hexachlorocyclohexane)	UG/KG	17 U	35 U	3.5 U	3.5 U
beta Endosulfan	UG/KG	12 U	25 U	2.5 U	2.5 U
delta BHC (delta Hexachlorocyclohexane)	UG/KG	20 U	40 U	4.0 U	4.0 U
Dieldrin	UG/KG	8.5 U	17 U	1.7 U	1.7 U
Endosulfan Sulfate	UG/KG	15 U	30 U	3.0 U	3.0 U
Endrin	UG/KG	8.5 U	17 U	1.7 U	1.7 U
Endrin Aldehyde	UG/KG	15 U	30 U	3.0 U	3.0 U
Endrin Ketone	UG/KG	9.9 U	20 U	2.0 U	2.0 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A1-UST-SB2	76-A3-DU1-SB5	76-PCA-DU2-SS	76-PCA-DU2-SS	76-102-PCA-SB4
Field Sample ID:	076-0140-0001-ER	076-0067-0001-ER	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0108M-0001-SO
Lab Sample ID:	240-18703-24	240-17796-20	240-17422-2	240-17422-3	240-18544-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/11/2012	11/15/2012	11/7/2012	11/7/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	5X	1X	1X

Organochlorine Pesticides and PCBs by Capillary GC

	Units					
Aldrin	UG/KG	0.048 U	0.048 U	20 U	4.0 U	4.0 U
alpha BHC (alpha Hexachlorocyclohexane)	UG/KG	0.048 U	0.048 U	13 U	2.5 U	2.5 U
alpha Endosulfan	UG/KG	0.048 U	0.048 U	8.6 U	1.7 U	1.7 U
alpha-Chlordane	UG/KG	0.048 U	0.048 U	15 U	3.0 U	3.0 U
beta BHC (beta Hexachlorocyclohexane)	UG/KG	0.048 U	0.048 U	18 U	3.5 U	3.5 U
beta Endosulfan	UG/KG	0.048 U	0.048 U	29	2.5 U	2.5 U
delta BHC (delta Hexachlorocyclohexane)	UG/KG	0.048 U	0.048 U	20 U	4.0 U	4.0 U
Dieldrin	UG/KG	0.048 U	0.048 U	8.6 U	1.7 U	1.7 U
Endosulfan Sulfate	UG/KG	0.048 U	0.048 U	15 U	3.0 U	3.0 U
Endrin	UG/KG	0.048 U	0.048 U	8.6 U	1.7 U	1.7 U
Endrin Aldehyde	UG/KG	0.048 U	0.048 U	15 U	3.0 U	3.0 U
Endrin Ketone	UG/KG	0.048 U	0.048 U	10 U	2.0 U	2.0 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB5
Field Sample ID:	076SB-0109M-0001-SO
Lab Sample ID:	240-18544-28
Lab Name:	TAM0
Sample Date:	12/6/2012
Field QC:	
Analysis Information:	1X

**Organochlorine Pesticides and PCBs
by Capillary GC**

	Units	
Aldrin	UG/KG	4.0 U
alpha BHC (alpha Hexachlorocyclohexane)	UG/KG	2.5 U
alpha Endosulfan	UG/KG	1.7 U
alpha-Chlordane	UG/KG	3.0 U
beta BHC (beta Hexachlorocyclohexane)	UG/KG	3.5 U
beta Endosulfan	UG/KG	2.5 U
delta BHC (delta Hexachlorocyclohexane)	UG/KG	4.0 U
Dieldrin	UG/KG	1.7 U
Endosulfan Sulfate	UG/KG	3.0 U
Endrin	UG/KG	1.7 U
Endrin Aldehyde	UG/KG	3.0 U
Endrin Ketone	UG/KG	2.0 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-U4-UST	76-U5-UST	76-102-BB-SB4	76-102-PCA-SB
Field Sample ID:	076SB-0110M-0001-SO	076SB-0112M-0001-SO	076SB-0114M-0001-SO	076SB-0098M-0001-SO	076SB-0101M-0001-SO
Lab Sample ID:	240-18544-29	240-18544-31	240-18544-33	240-18544-16	240-18544-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:					
Analysis Information:	5X	10X	1X	1X	1X
gamma BHC (Lindane)	UG/KG 12 U	25 U	2.5 U	2.5 U	2.5 U
gamma-Chlordane	UG/KG 8.5 U	17 U	1.7 U	1.7 U	1.7 U
Heptachlor	UG/KG 17 U	35 U	3.5 U	3.5 U	3.5 U
Heptachlor Epoxide	UG/KG 12 U	25 U	2.5 U	2.5 U	2.5 U
Methoxychlor	UG/KG 25 U	50 U	5.0 U	5.0 U	5.0 U
p,p'-DDD	UG/KG 9.9 U	20 U	2.0 U	2.0 U	2.0 U
p,p'-DDE	UG/KG 8.5 U	17 U	1.7 U	0.47 J	1.7 U
p,p'-DDT	UG/KG 9.9 U	14 J	2.0 U	2.0 U	2.0 U
Toxaphene	UG/KG 330 UJ	680 UJ	67 UJ	67 UJ	67 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A1-UST-SB2	76-A3-DU1-SB5	76-PCA-DU2-SS	76-PCA-DU2-SS	76-102-PCA-SB4
Field Sample ID:	076-0140-0001-ER	076-0067-0001-ER	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0108M-0001-SO
Lab Sample ID:	240-18703-24	240-17796-20	240-17422-2	240-17422-3	240-18544-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/11/2012	11/15/2012	11/7/2012	11/7/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	5X	1X	1X
gamma BHC (Lindane)	UG/KG 0.048 U	0.048 U	13 U	2.5 U	2.5 U
gamma-Chlordane	UG/KG 0.048 U	0.048 U	8.6 U	1.7 U	1.7 U
Heptachlor	UG/KG 0.048 U	0.048 U	18 U	3.5 U	3.5 U
Heptachlor Epoxide	UG/KG 0.048 U	0.048 U	36	2.5 U	2.5 U
Methoxychlor	UG/KG 0.095 U	0.096 U	25 U	5.0 U	5.0 U
p,p'-DDD	UG/KG 0.048 U	0.048 U	35	2.0 U	2.0 U
p,p'-DDE	UG/KG 0.048 U	0.048 U	8.6 U	1.7 U	1.7 U
p,p'-DDT	UG/KG 0.048 U	0.048 U	10 U	2.0 U	2.0 U
Toxaphene	UG/KG 1.9 UJ	1.9 U	340 U	67 U	67 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant

RVAAP, QAPP Oct. 2012

Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB5
Field Sample ID:	076SB-0109M-0001-SO
Lab Sample ID:	240-18544-28
Lab Name:	TAM0
Sample Date:	12/6/2012
Field QC:	
Analysis Information:	1X
gamma BHC (Lindane)	UG/KG 2.5 U
gamma-Chlordane	UG/KG 1.7 U
Heptachlor	UG/KG 3.5 U
Heptachlor Epoxide	UG/KG 2.5 U
Methoxychlor	UG/KG 5.0 U
p,p'-DDD	UG/KG 2.0 U
p,p'-DDE	UG/KG 1.7 U
p,p'-DDT	UG/KG 2.0 U
Toxaphene	UG/KG 67 UJ

Notes:

J = Detected, Estimated

UJ = Compound was not detected and reporting limit is estimated

U = Compound was Not Detected

ID = Identification

QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH

MG/KG = Milligrams per Kilogram

MG/L = Milligrams per Liter

UG/KG = Micrograms per Kilogram

UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW	076SB-0112M-0001-SO
Lab Sample ID:	240-18544-29	240-17317-18	240-17422-13	240-17422-14	240-18544-31
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/8/2012	11/8/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)	Units					
PCB-1016 (Arochlor 1016)	UG/KG	65 U	65 U	0.48 U	0.48 U	66 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	50 U	0.48 U	0.48 U	50 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	45 U	0.48 U	0.48 U	45 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	40 U	0.48 U	0.48 U	40 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	55 U	0.48 U	0.48 U	55 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	55 U	0.48 U	0.48 U	55 U
PCB-1260 (Arochlor 1260)	UG/KG	55 U	55 U	0.48 U	0.48 U	77

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-UST	76-U5-UST	76-U20-SD2	76-U20-SD2	76-U20-SD3
Field Sample ID:	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD	076SD-0009-0001-SD	076SD-0011-0001-SD
Lab Sample ID:	240-18544-33	240-18544-34	240-17317-20	240-17317-19	240-17317-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/6/2012	11/6/2012
Field QC:		Field Duplicate	Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)		Units			
PCB-1016 (Arochlor 1016)	UG/KG	65 U	65 U	65 U	65 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	50 U	50 U	50 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	45 U	45 U	45 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	40 U	40 U	40 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	55 U	55 U	55 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	55 U	55 U	55 U
PCB-1260 (Arochlor 1260)	UG/KG	55 U	55 U	55 U	250

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD4	76-U20-SW2	76-U5-DU1-SB	76-U5-DU1-SB	76-U5-DU1-SS
Field Sample ID:	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0037M-0001-SO	076SB-0038M-0001-SO	076SS-0001M-0001-SO
Lab Sample ID:	240-17317-22	240-17422-15	240-17768-9	240-17768-10	240-17317-2
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/8/2012	11/14/2012	11/14/2012	11/6/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)		Units			
PCB-1016 (Arochlor 1016)	UG/KG	65 U	0.48 U	66 U	66 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	0.48 U	50 U	51 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	0.48 U	45 U	46 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	0.48 U	40 U	41 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	0.48 U	55 U	56 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	0.48 U	55 U	56 U
PCB-1260 (Arochlor 1260)	UG/KG	55 U	0.48 U	55 U	56 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB4	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB5
Field Sample ID:	076SB-0098M-0001-SO	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076-0067-0001-ER
Lab Sample ID:	240-18544-16	240-18544-19	240-18544-20	240-18703-24	240-17796-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/11/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Polychlorinated Biphenyls (PCB)		Units			
PCB-1016 (Arochlor 1016)	UG/KG	65 U	66 UJ	65 U	0.48 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	51 UJ	50 U	0.48 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	46 UJ	45 U	0.48 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	41 UJ	40 U	0.48 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	56 UJ	55 U	0.48 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	56 UJ	55 U	0.48 U
PCB-1260 (Arochlor 1260)	UG/KG	55 U	56 UJ	55 U	0.48 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U20-DU1-SB	76-U20-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-9	240-17796-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)	Units					
PCB-1016 (Arochlor 1016)	UG/KG	65 U	66 U	65 U	66 U	65 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	51 U	50 U	51 U	50 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	46 U	45 U	46 U	45 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	40 U	40 U	41 U	40 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	56 U	55 U	56 U	55 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	56 U	55 U	56 U	55 U
PCB-1260 (Arochlor 1260)	UG/KG	68	56 U	55 U	56 U	55 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SS	76-U5-DU1-SB1	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4
Field Sample ID:	076SS-0007M-0001-SO	076SB-0039M-0001-SO	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO
Lab Sample ID:	240-17796-10	240-17768-11	240-17768-12	240-17768-13	240-17768-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)	Units					
PCB-1016 (Arochlor 1016)	UG/KG	66 U	65 U	64 U	64 U	64 U
PCB-1221 (Arochlor 1221)	UG/KG	51 U	50 U	50 U	49 U	49 U
PCB-1232 (Arochlor 1232)	UG/KG	46 U	45 U	45 U	44 U	44 U
PCB-1242 (Arochlor 1242)	UG/KG	41 U	40 U	40 U	40 U	39 U
PCB-1248 (Arochlor 1248)	UG/KG	56 U	55 U	55 U	54 U	54 U
PCB-1254 (Arochlor 1254)	UG/KG	56 U	55 U	55 U	54 U	54 U
PCB-1260 (Arochlor 1260)	UG/KG	24 J	55 U	55 U	54 U	54 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB5	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2
Field Sample ID:	076SB-0043M-0001-SO	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO
Lab Sample ID:	240-17768-15	240-18544-21	240-18544-22	240-18544-23	240-18544-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:			Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Polychlorinated Biphenyls (PCB)		Units			
PCB-1016 (Arochlor 1016)	UG/KG	65 U	65 U	65 U	66 UJ
PCB-1221 (Arochlor 1221)	UG/KG	50 U	50 U	50 U	51 UJ
PCB-1232 (Arochlor 1232)	UG/KG	45 U	45 U	45 U	46 UJ
PCB-1242 (Arochlor 1242)	UG/KG	40 U	40 U	40 U	40 UJ
PCB-1248 (Arochlor 1248)	UG/KG	55 U	55 U	55 U	56 UJ
PCB-1254 (Arochlor 1254)	UG/KG	55 U	55 U	55 U	56 UJ
PCB-1260 (Arochlor 1260)	UG/KG	55 U	55 U	55 U	56 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB3	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5	76-U20-DU1-SB1
Field Sample ID:	076SB-0106M-0001-SO	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0055M-0001-SO
Lab Sample ID:	240-18544-25	240-18544-26	240-18544-27	240-18544-28	240-17796-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/15/2012
Field QC:		Field Duplicate			
Analysis Information:	1X	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)	Units					
PCB-1016 (Arochlor 1016)	UG/KG	65 U	65 U	65 U	65 U	65 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	50 U	50 U	50 U	50 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	45 U	45 U	45 U	45 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	40 U	40 U	40 U	40 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	55 U	55 U	55 U	55 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	55 U	55 U	55 U	55 U
PCB-1260 (Arochlor 1260)	UG/KG	55 U	55 U	55 U	55 U	55 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB2	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0056M-0001-SO	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-13	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:				
Analysis Information:	1X	1X	1X	1X

Polychlorinated Biphenyls (PCB)	Units				
PCB-1016 (Arochlor 1016)	UG/KG	65 U	65 U	64 U	65 U
PCB-1221 (Arochlor 1221)	UG/KG	50 U	50 U	49 U	50 U
PCB-1232 (Arochlor 1232)	UG/KG	45 U	45 U	44 U	45 U
PCB-1242 (Arochlor 1242)	UG/KG	40 U	40 U	40 U	40 U
PCB-1248 (Arochlor 1248)	UG/KG	55 U	55 U	54 U	55 U
PCB-1254 (Arochlor 1254)	UG/KG	55 U	55 U	54 U	55 U
PCB-1260 (Arochlor 1260)	UG/KG	55 U	55 U	54 U	55 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant

RVAAP, QAPP Oct. 2012

Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A1-UST-SB2	76-A3-DU1-SB5
Field Sample ID:	076-0140-0001-ER	076-0067-0001-ER
Lab Sample ID:	240-18703-24	240-17796-20
Lab Name:	TAM0	TAM0
Sample Date:	12/11/2012	11/15/2012
Field QC:		
Analysis Information:	1X	1X

Chlorinated Herbicides by GC Using Units
Methylation or
Pentafluorobenzoylation
Derivatization: Capillary Column
Technique

2,4 DB	UG/L	4.0 U	4.0 U
2,4,5-T (Trichlorophenoxyacetic Acid)	UG/L	1.0 U	1.0 U
2,4-D (Dichlorophenoxyacetic Acid)	UG/L	4.0 U	4.0 U
Dalapon	UG/L	2.0 U	2.0 U
Dicamba	UG/L	2.0 U	2.0 U
Dichloroprop	UG/L	4.0 U	4.0 U
Dinoseb	UG/L	0.60 U	0.60 U
MCPA	UG/L	400 UJ	400 UJ
MCPP	UG/L	400 UJ	400 U
Pentachlorophenol	UG/L	0.10 U	0.10 U
Silvex (2,4,5-TP)	UG/L	1.0 U	1.0 U

Notes:

J = Detected, Estimated

UJ = Compound was not detected and reporting limit is estimated

U = Compound was Not Detected

ID = Identification

QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH

MG/KG = Milligrams per Kilogram

MG/L = Milligrams per Liter

UG/KG = Micrograms per Kilogram

UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-A3-UST	76-U4-UST	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SB-0116M-0001-TB	076SB-0112M-0001-SO	076SB-0113M-0001-SO
Lab Sample ID:	240-18544-29	240-18544-30	240-18544-35	240-18544-31	240-18544-32
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,1,2,2-Tetrachloroethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,1,2-Trichloroethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,1-Dichloroethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,1-Dichloroethene	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,2-Dichloroethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
1,2-Dichloropropane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
2-Hexanone	UG/KG	20 U	19 U	10 U	17 U	18 UJ
Acetone	UG/KG	30	30	1.3 J	6.6 J	12 J
Benzene	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Bromochloromethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Bromodichloromethane	UG/KG	5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ

Notes:

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U = Compound was Not Detected
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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U5-UST	76-U5-UST	76-U5-UST	76-102-BB-SB
Field Sample ID:	076SB-0117M-0001-TB	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SB-0118M-0001-TB	076SB-0090M-0001-SO
Lab Sample ID:	240-18544-36	240-18544-33	240-18544-34	240-18544-37	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:			Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units					
1,1,1-Trichloroethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,1,2,2-Tetrachloroethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,1,2-Trichloroethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,1-Dichloroethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,1-Dichloroethene	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,2-Dichloroethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
1,2-Dichloropropane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
2-Hexanone	UG/KG	10 U	19 U	21 U	10 U	25 UJ
Acetone	UG/KG	10 U	19 U	21 U	10 U	25 UJ
Benzene	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Bromochloromethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Bromodichloromethane	UG/KG	1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units					
1,1,1-Trichloroethane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
1,1,2,2-Tetrachloroethane	UG/KG	5.1 U	6.8 UJ	5.2 U	2.4 U	4.9 U
1,1,2-Trichloroethane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
1,1-Dichloroethane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
1,1-Dichloroethene	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
1,2-Dichloroethane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
1,2-Dichloropropane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
2-Hexanone	UG/KG	20 U	27 U	21 U	9.7 U	20 U
Acetone	UG/KG	20 U	27 U	21 U	9.7 U	36
Benzene	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Bromochloromethane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Bromodichloromethane	UG/KG	5.1 U	6.8 U	5.2 U	2.4 U	4.9 U

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units				
1,1,1-Trichloroethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,1,2,2-Tetrachloroethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,1,2-Trichloroethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,1-Dichloroethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,1-Dichloroethene	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,2-Dichloroethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
1,2-Dichloropropane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
2-Hexanone	UG/KG	19 U	23 U	21 U	18 U
Acetone	UG/KG	19 UJ	46 U	62 U	18 U
Benzene	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
Bromochloromethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U
Bromodichloromethane	UG/KG	4.9 U	5.9 U	5.2 U	4.4 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
1,1,2,2-Tetrachloroethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 UJ	5.8 UJ
1,1,2-Trichloroethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
1,1-Dichloroethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
1,1-Dichloroethene	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
1,2-Dichloroethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
1,2-Dichloropropane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
2-Hexanone	UG/KG	19 U	19 UJ	29 UJ	20 U	23 UJ
Acetone	UG/KG	19 U	33 J	67 J	20 U	89 J
Benzene	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Bromochloromethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Bromodichloromethane	UG/KG	4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,1,2,2-Tetrachloroethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,1,2-Trichloroethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,1-Dichloroethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,1-Dichloroethene	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,2-Dichloroethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
1,2-Dichloropropane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
2-Hexanone	UG/KG	19 UJ	19 U	1.5 J	24 UJ	23 UJ
Acetone	UG/KG	19 UJ	19 U	20 U	24 U	23 UJ
Benzene	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Bromochloromethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Bromodichloromethane	UG/KG	4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units					
1,1,1-Trichloroethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,1,2,2-Tetrachloroethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,1,2-Trichloroethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,1-Dichloroethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,1-Dichloroethene	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,2-Dichloroethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
1,2-Dichloropropane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
2-Hexanone	UG/KG	23 U	19 UJ	18 UJ	19 UJ	19 UJ
Acetone	UG/KG	23 U	19 U	18 U	19 UJ	19 UJ
Benzene	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Bromochloromethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Bromodichloromethane	UG/KG	5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A1-UST-SB3	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076-0141-0001-TB	076SB-0062M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-18703-25	240-17796-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	12/11/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units				
1,1,1-Trichloroethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,1,2-Trichloroethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,1-Dichloroethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,1-Dichloroethene	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,2-Dichloroethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
1,2-Dichloropropane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
2-Hexanone	UG/KG	22 U	21 UJ	10 U	10 U
Acetone	UG/KG	22 U	21 U	10 U	12
Benzene	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
Bromochloromethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U
Bromodichloromethane	UG/KG	5.5 U	5.1 U	1.0 U	1.0 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB1	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3
Field Sample ID:	076SB-0070M-0001-SO	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO
Lab Sample ID:	240-17810-3	240-17796-25	240-17810-4	240-17796-26	240-17810-5
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/16/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units					
1,1,1-Trichloroethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,1,2,2-Tetrachloroethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,1,2-Trichloroethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,1-Dichloroethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,1-Dichloroethene	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,2-Dichloroethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
1,2-Dichloropropane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
2-Hexanone	UG/KG	21 U	23 U	12 U	17 U	19 U
Acetone	UG/KG	34	23 U	39	17 U	19 UJ
Benzene	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Bromochloromethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Bromodichloromethane	UG/KG	5.2 U	5.9 U	2.9 U	4.2 U	4.9 U

Notes:

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U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5
Field Sample ID:	076-0068-0001-TB	076SB-0065M-0001-SO	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO
Lab Sample ID:	240-17796-21	240-17796-27	240-17810-6	240-17796-20	240-17796-28
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/16/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,1,2,2-Tetrachloroethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,1,2-Trichloroethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,1-Dichloroethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,1-Dichloroethene	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,2-Dichloroethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
1,2-Dichloropropane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
2-Hexanone	UG/KG	10 U	21 U	25 U	10 U	18 U
Acetone	UG/KG	10 UJ	21 U	75	10 UJ	18 U
Benzene	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Bromochloromethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Bromodichloromethane	UG/KG	1.0 U	5.3 U	6.3 U	1.0 U	4.6 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3	76-DDS-DU2-SS	76-PCA-DU2-SS
Field Sample ID:	076SB-0074M-0001-SO	076SB-0075M-0001-TB	076SB-0078-0001-SO	076SS-0002M-0001-SO	076SS-0020M-0001-SO
Lab Sample ID:	240-17810-7	240-17810-8	240-18544-18	240-17317-1	240-17422-2
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/16/2012	11/16/2012	11/6/2012	11/7/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units				
1,1,1-Trichloroethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,1,2,2-Tetrachloroethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,1,2-Trichloroethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,1-Dichloroethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,1-Dichloroethene	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,2-Dichloroethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
1,2-Dichloropropane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
2-Hexanone	UG/KG	24 U	10 U	36 U	23 U
Acetone	UG/KG	100	10 UJ	36 U	26 U
Benzene	UG/KG	0.31 J	1.0 U	5.3 U	8.9 U
Bromochloromethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U
Bromodichloromethane	UG/KG	6.0 U	1.0 U	8.9 U	5.8 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-PCA-DU2-SS	76-U3-UST-SB1	76-U3-UST-SB2	76-U3-UST-SB3	76-U4-DU1-SB1
Field Sample ID:	076SS-0021M-0001-SO	076SB-0137-0001-TB	076SB-0138-0001-TB	076SB-0139-0001-TB	076SB-0025M-0001-SO
Lab Sample ID:	240-17422-3	240-18703-2	240-18703-3	240-18703-4	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/7/2012	12/11/2012	12/11/2012	12/11/2012	11/15/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,1,2,2-Tetrachloroethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,1,2-Trichloroethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,1-Dichloroethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,1-Dichloroethene	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,2-Dichloroethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
1,2-Dichloropropane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
2-Hexanone	UG/KG	24 U	10 U	10 U	10 U	17 U
Acetone	UG/KG	120 J	12	14	15	17 U
Benzene	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Bromochloromethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Bromodichloromethane	UG/KG	5.9 U	1.0 U	1.0 U	1.0 U	4.2 U

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units					
1,1,1-Trichloroethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,1,2,2-Tetrachloroethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,1,2-Trichloroethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,1-Dichloroethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,1-Dichloroethene	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,2-Dichloroethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
1,2-Dichloropropane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
2-Hexanone	UG/KG	17 U	21 U	19 U	24 U	19 UJ
Acetone	UG/KG	17 U	21 U	19 U	24 U	28 J
Benzene	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Bromochloromethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Bromodichloromethane	UG/KG	4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,1,2,2-Tetrachloroethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,1,2-Trichloroethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,1-Dichloroethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,1-Dichloroethene	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,2-Dichloroethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
1,2-Dichloropropane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
2-Hexanone	UG/KG	18 UJ	1200 UJ	18 UJ	18 UJ	21 R
Acetone	UG/KG	22 J	1200 UJ	19 J	18 UJ	20 J
Benzene	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Bromochloromethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Bromodichloromethane	UG/KG	4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R

Notes:

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-U5-DU1-SB5
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0044M-0001-TB
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-17768-16
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,1,2,2-Tetrachloroethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,1,2-Trichloroethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,1-Dichloroethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,1-Dichloroethene	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,2-Dichloroethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
1,2-Dichloropropane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
2-Hexanone	UG/KG	18 UJ	18 UJ	21 R	22 UJ	10 U
Acetone	UG/KG	18 UJ	18 UJ	14 J	37 J	10 U
Benzene	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Bromochloromethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Bromodichloromethane	UG/KG	4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
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UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3
Field Sample ID:	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO
Lab Sample ID:	240-18544-21	240-18544-22	240-18544-23	240-18544-24	240-18544-25
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate		Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS		Units				
1,1,1-Trichloroethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,1,2,2-Tetrachloroethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,1,2-Trichloroethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,1-Dichloroethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,1-Dichloroethene	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,2-Dichloroethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
1,2-Dichloropropane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
2-Hexanone	UG/KG	22 UJ	22 U	19 U	23 U	19 U
Acetone	UG/KG	22 U	22 U	19 U	23 U	19 U
Benzene	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Bromochloromethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Bromodichloromethane	UG/KG	5.6 U	5.4 U	4.7 U	5.8 U	4.7 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5	76-A6-UST-SB13	76-U10-DU1-SB5
Field Sample ID:	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076-0142-0001-TB	076SB-0052M-0001-TB
Lab Sample ID:	240-18544-26	240-18544-27	240-18544-28	240-18703-26	240-17796-37
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/11/2012	11/15/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X

Volatile Organic Compounds by Capillary GC/MS

	Units					
1,1,1-Trichloroethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,1-Dichloroethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,1-Dichloroethene	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene Dibromide)	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,2-Dichloroethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
1,2-Dichloropropane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
2-Hexanone	UG/KG	21 U	18 U	16 U	10 U	10 U
Acetone	UG/KG	21 U	18 U	16 U	12	10 UJ
Benzene	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Bromochloromethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Bromodichloromethane	UG/KG	5.2 U	4.4 U	4.0 U	1.0 U	1.0 U

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-A3-UST	76-U4-UST	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SB-0116M-0001-TB	076SB-0112M-0001-SO	076SB-0113M-0001-SO
Lab Sample ID:	240-18544-29	240-18544-30	240-18544-35	240-18544-31	240-18544-32
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Bromomethane	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Carbon Disulfide	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Carbon Tetrachloride	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Chlorobenzene	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Chloroethane	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Chloroform	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Chloromethane	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
cis-1,3-Dichloropropene	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Dibromochloromethane	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Ethylbenzene	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 4.2 J	5.6 J	10 U	1.7 J	3.3 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 20 U	19 U	10 U	17 U	18 UJ
Methylene Chloride	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	1.1 J
Styrene	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U5-UST	76-U5-UST	76-U5-UST	76-102-BB-SB
Field Sample ID:	076SB-0117M-0001-TB	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SB-0118M-0001-TB	076SB-0090M-0001-SO
Lab Sample ID:	240-18544-36	240-18544-33	240-18544-34	240-18544-37	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:			Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Bromomethane	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Carbon Disulfide	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Carbon Tetrachloride	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Chlorobenzene	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Chloroethane	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Chloroform	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Chloromethane	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
cis-1,3-Dichloropropene	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Dibromochloromethane	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Ethylbenzene	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 10 U	19 U	21 U	10 U	25 UJ
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 10 U	19 U	21 U	10 U	25 UJ
Methylene Chloride	UG/KG 1.0 U	4.8 U	1.7 J	1.0 U	6.2 UJ
Styrene	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Bromomethane	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Carbon Disulfide	UG/KG 5.1 U	6.8 U	3.1 J	1.4 J	4.9 U
Carbon Tetrachloride	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Chlorobenzene	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Chloroethane	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Chloroform	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Chloromethane	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
cis-1,3-Dichloropropene	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Dibromochloromethane	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Ethylbenzene	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 20 U	27 U	21 U	4.3 J	5.9 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 20 U	27 U	21 U	9.7 U	20 U
Methylene Chloride	UG/KG 1.6 J	6.8 U	5.2 U	2.4 U	4.9 U
Styrene	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U

Notes:

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Bromomethane	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Carbon Disulfide	UG/KG 2.9 J	1.0 J	5.2 U	4.4 U	5.9 U
Carbon Tetrachloride	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Chlorobenzene	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Chloroethane	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Chloroform	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Chloromethane	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
cis-1,3-Dichloropropene	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Dibromochloromethane	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Ethylbenzene	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 19 U	23 U	3.1 J	1.5 J	2.3 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 19 U	23 U	21 U	18 U	24 U
Methylene Chloride	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Styrene	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U

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QC = Quality Control

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Bromomethane	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Carbon Disulfide	UG/KG 4.7 U	2.9 J	4.3 J	5.0 U	3.6 J
Carbon Tetrachloride	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Chlorobenzene	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Chloroethane	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Chloroform	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Chloromethane	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
cis-1,3-Dichloropropene	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Dibromochloromethane	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Ethylbenzene	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 19 U	5.3 J	13 J	20 U	19 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 19 U	19 UJ	29 UJ	20 U	23 UJ
Methylene Chloride	UG/KG 4.7 U	4.8 UJ	11 J	5.0 U	5.8 UJ
Styrene	UG/KG 4.7 U	4.8 UJ	7.4 UJ	0.21 J	5.8 UJ

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Bromomethane	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Carbon Disulfide	UG/KG 4.7 UJ	0.79 J	4.9 U	6.0 U	5.7 UJ
Carbon Tetrachloride	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Chlorobenzene	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Chloroethane	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Chloroform	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Chloromethane	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
cis-1,3-Dichloropropene	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Dibromochloromethane	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Ethylbenzene	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 19 UJ	19 U	20 U	24 U	23 UJ
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 19 UJ	19 U	1.0 J	24 UJ	23 UJ
Methylene Chloride	UG/KG 0.68 J	4.6 U	4.9 U	6.0 U	5.7 UJ
Styrene	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ

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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Bromomethane	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Carbon Disulfide	UG/KG 5.8 U	4.7 U	4.4 U	0.92 J	4.8 UJ
Carbon Tetrachloride	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Chlorobenzene	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Chloroethane	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Chloroform	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Chloromethane	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
cis-1,3-Dichloropropene	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Dibromochloromethane	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Ethylbenzene	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 23 U	19 U	18 U	19 UJ	19 UJ
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 23 U	19 UJ	18 UJ	19 UJ	19 UJ
Methylene Chloride	UG/KG 1.4 J	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Styrene	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A1-UST-SB3	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076-0141-0001-TB	076SB-0062M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-18703-25	240-17796-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	12/11/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Bromomethane	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Carbon Disulfide	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Carbon Tetrachloride	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Chlorobenzene	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Chloroethane	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Chloroform	UG/KG 5.5 U	5.1 U	0.58 J	1.0 U	4.4 U
Chloromethane	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
cis-1,3-Dichloropropene	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Dibromochloromethane	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Ethylbenzene	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 22 U	21 U	10 U	10 U	1.3 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 22 U	21 UJ	10 U	0.36 J	18 U
Methylene Chloride	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Styrene	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB1	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3
Field Sample ID:	076SB-0070M-0001-SO	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO
Lab Sample ID:	240-17810-3	240-17796-25	240-17810-4	240-17796-26	240-17810-5
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/16/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Bromomethane	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Carbon Disulfide	UG/KG 3.1 J	3.5 J	1.7 J	2.6 J	4.9 U
Carbon Tetrachloride	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Chlorobenzene	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Chloroethane	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Chloroform	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Chloromethane	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
cis-1,3-Dichloropropene	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Dibromochloromethane	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Ethylbenzene	UG/KG 5.2 U	2.4 J	2.9 U	4.2 U	4.9 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 7.3 J	13 J	5.3 J	2.4 J	19 U
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 21 U	23 U	12 U	17 U	19 U
Methylene Chloride	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Styrene	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5
Field Sample ID:	076-0068-0001-TB	076SB-0065M-0001-SO	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO
Lab Sample ID:	240-17796-21	240-17796-27	240-17810-6	240-17796-20	240-17796-28
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/16/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Bromomethane	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Carbon Disulfide	UG/KG 1.0 U	3.2 J	3.9 J	1.0 U	4.6 U
Carbon Tetrachloride	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Chlorobenzene	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Chloroethane	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Chloroform	UG/KG 1.0 U	5.3 U	6.3 U	0.61 J	4.6 U
Chloromethane	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
cis-1,3-Dichloropropene	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Dibromochloromethane	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Ethylbenzene	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 10 U	1.7 J	12 J	10 U	7.3 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 10 U	21 U	25 U	10 U	18 U
Methylene Chloride	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	0.91 J
Styrene	UG/KG 1.0 UJ	5.3 U	6.3 U	1.0 UJ	4.6 U

Notes:

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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3	76-DDS-DU2-SS	76-PCA-DU2-SS
Field Sample ID:	076SB-0074M-0001-SO	076SB-0075M-0001-TB	076SB-0078-0001-SO	076SS-0002M-0001-SO	076SS-0020M-0001-SO
Lab Sample ID:	240-17810-7	240-17810-8	240-18544-18	240-17317-1	240-17422-2
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/16/2012	11/16/2012	11/6/2012	11/7/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Bromomethane	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Carbon Disulfide	UG/KG 3.7 J	1.0 U		8.9 U	5.8 U
Carbon Tetrachloride	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Chlorobenzene	UG/KG 6.0 U	1.0 U		8.9 U	5.8 UJ
Chloroethane	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Chloroform	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Chloromethane	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
cis-1,3-Dichloropropene	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Dibromochloromethane	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Ethylbenzene	UG/KG 6.0 U	1.0 U	5.3 U	8.9 U	5.8 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 19 J	10 U		36 U	23 U
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 24 U	10 U		36 U	23 U
Methylene Chloride	UG/KG 6.0 U	0.36 J		8.9 U	5.8 U
Styrene	UG/KG 6.0 U	1.0 UJ		8.9 U	5.8 UJ

Notes:

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QC = Quality Control

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-PCA-DU2-SS	76-U3-UST-SB1	76-U3-UST-SB2	76-U3-UST-SB3	76-U4-DU1-SB1
Field Sample ID:	076SS-0021M-0001-SO	076SB-0137-0001-TB	076SB-0138-0001-TB	076SB-0139-0001-TB	076SB-0025M-0001-SO
Lab Sample ID:	240-17422-3	240-18703-2	240-18703-3	240-18703-4	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/7/2012	12/11/2012	12/11/2012	12/11/2012	11/15/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Bromomethane	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Carbon Disulfide	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	2.4 J
Carbon Tetrachloride	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Chlorobenzene	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Chloroethane	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Chloroform	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Chloromethane	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
cis-1,3-Dichloropropene	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Dibromochloromethane	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Ethylbenzene	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 6.4 J	0.57 J	0.69 J	0.64 J	1.4 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 24 U	0.32 J	10 U	0.39 J	17 U
Methylene Chloride	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Styrene	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Bromomethane	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Carbon Disulfide	UG/KG 4.3 U	5.1 U	2.9 J	3.5 J	2.8 J
Carbon Tetrachloride	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Chlorobenzene	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Chloroethane	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Chloroform	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Chloromethane	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
cis-1,3-Dichloropropene	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Dibromochloromethane	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Ethylbenzene	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Methyl Ethyl Ketone (2-Butanone)	UG/KG 17 U	21 U	19 U	9.6 J	3.9 J
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 17 U	21 U	19 U	24 U	19 UJ
Methylene Chloride	UG/KG 4.3 U	0.69 J	4.9 U	1.3 J	4.8 UJ
Styrene	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Bromomethane	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Carbon Disulfide	UG/KG 4.6 UJ	300 UJ	2.7 J	4.4 UJ	5.4 R
Carbon Tetrachloride	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Chlorobenzene	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Chloroethane	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Chloroform	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Chloromethane	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
cis-1,3-Dichloropropene	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Dibromochloromethane	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Ethylbenzene	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Methyl Ethyl Ketone (2-Butanone)	UG/KG 3.2 J	1200 UJ	2.3 J	18 UJ	21 R
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 18 UJ	1200 UJ	18 UJ	18 UJ	21 R
Methylene Chloride	UG/KG 4.6 UJ	98 J	4.5 UJ	4.4 UJ	11 J
Styrene	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R

Notes:

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-U5-DU1-SB5
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0044M-0001-TB
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-17768-16
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Bromomethane	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Carbon Disulfide	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Carbon Tetrachloride	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Chlorobenzene	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Chloroethane	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Chloroform	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Chloromethane	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
cis-1,3-Dichloropropene	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Dibromochloromethane	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Ethylbenzene	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 18 UJ	18 UJ	21 R	3.2 J	10 U
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 18 UJ	18 UJ	21 R	22 UJ	10 U
Methylene Chloride	UG/KG 4.5 UJ	4.6 UJ	1.1 J	5.5 UJ	0.84 J
Styrene	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U

Notes:

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UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3
Field Sample ID:	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO
Lab Sample ID:	240-18544-21	240-18544-22	240-18544-23	240-18544-24	240-18544-25
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate		Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Bromomethane	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Carbon Disulfide	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Carbon Tetrachloride	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Chlorobenzene	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Chloroethane	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Chloroform	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Chloromethane	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
cis-1,3-Dichloropropene	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Dibromochloromethane	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Ethylbenzene	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 22 U	22 U	19 U	23 U	19 U
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 22 UJ	22 U	19 U	23 U	19 U
Methylene Chloride	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Styrene	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5	76-A6-UST-SB13	76-U10-DU1-SB5
Field Sample ID:	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076-0142-0001-TB	076SB-0052M-0001-TB
Lab Sample ID:	240-18544-26	240-18544-27	240-18544-28	240-18703-26	240-17796-37
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/11/2012	11/15/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X
Bromoform	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Bromomethane	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Carbon Disulfide	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Carbon Tetrachloride	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Chlorobenzene	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Chloroethane	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Chloroform	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Chloromethane	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Dibromochloromethane	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Ethylbenzene	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Methyl Ethyl Ketone (2-Butanone)	UG/KG 21 U	18 U	16 U	0.60 J	10 U
Methyl Isobutyl Ketone (4-Methyl-2-pentanone)	UG/KG 21 U	18 U	16 U	0.35 J	10 U
Methylene Chloride	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Styrene	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-A3-UST	76-U4-UST	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SB-0116M-0001-TB	076SB-0112M-0001-SO	076SB-0113M-0001-SO
Lab Sample ID:	240-18544-29	240-18544-30	240-18544-35	240-18544-31	240-18544-32
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L		1.0 U		
Tetrachloroethylene (PCE)	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Toluene	UG/KG 1.2 J	0.95 J	1.0 U	1.0 J	1.5 J
Total 1,2-Dichloroethene	UG/KG 10 U	9.3 U	2.0 U	8.7 U	9.1 UJ
trans-1,3-Dichloropropene	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Trichloroethylene (TCE)	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Vinyl Chloride	UG/KG 5.0 U	4.7 U	1.0 U	4.3 U	4.5 UJ
Xylenes, Total	UG/KG 10 U	9.3 U	2.0 U	8.7 U	9.1 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U5-UST	76-U5-UST	76-U5-UST	76-102-BB-SB
Field Sample ID:	076SB-0117M-0001-TB	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SB-0118M-0001-TB	076SB-0090M-0001-SO
Lab Sample ID:	240-18544-36	240-18544-33	240-18544-34	240-18544-37	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:			Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 1.0 U			1.0 U	
Tetrachloroethylene (PCE)	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Toluene	UG/KG 1.0 U	0.52 J	1.5 J	1.0 U	1.5 J
Total 1,2-Dichloroethene	UG/KG 2.0 U	9.6 U	10 U	2.0 U	12 UJ
trans-1,3-Dichloropropene	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Trichloroethylene (TCE)	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Vinyl Chloride	UG/KG 1.0 U	4.8 U	5.2 U	1.0 U	6.2 UJ
Xylenes, Total	UG/KG 2.0 U	9.6 U	10 U	2.0 U	12 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L		5.2 U	2.4 U	4.9 U
Tetrachloroethylene (PCE)	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Toluene	UG/KG 2.0 J	6.8 U	5.2 U	2.4 U	4.9 U
Total 1,2-Dichloroethene	UG/KG 10 U	14 U	10 U	4.8 U	9.8 U
trans-1,3-Dichloropropene	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Trichloroethylene (TCE)	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Vinyl Chloride	UG/KG 5.1 U	6.8 U	5.2 U	2.4 U	4.9 U
Xylenes, Total	UG/KG 10 U	14 U	10 U	4.8 U	9.8 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 4.9 U		5.2 U	4.4 U	5.9 U
Tetrachloroethylene (PCE)	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Toluene	UG/KG 4.9 U	5.9 U	0.28 J	4.4 U	5.9 U
Total 1,2-Dichloroethene	UG/KG 9.7 U	12 U	10 U	8.8 U	12 U
trans-1,3-Dichloropropene	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Trichloroethylene (TCE)	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Vinyl Chloride	UG/KG 4.9 U	5.9 U	5.2 U	4.4 U	5.9 U
Xylenes, Total	UG/KG 9.7 U	12 U	10 U	8.8 U	12 U

Notes:

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U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L	4.8 UJ	7.4 UJ		5.8 UJ
Tetrachloroethylene (PCE)	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Toluene	UG/KG 0.64 J	4.8 UJ	0.49 J	0.41 J	5.8 UJ
Total 1,2-Dichloroethene	UG/KG 9.4 U	9.7 UJ	15 UJ	10 U	12 UJ
trans-1,3-Dichloropropene	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Trichloroethylene (TCE)	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Vinyl Chloride	UG/KG 4.7 U	4.8 UJ	7.4 UJ	5.0 U	5.8 UJ
Xylenes, Total	UG/KG 9.4 U	9.7 UJ	15 UJ	10 U	12 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 4.7 UJ				
Tetrachloroethylene (PCE)	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Toluene	UG/KG 4.7 UJ	4.6 U	0.84 J	1.1 J	1.0 J
Total 1,2-Dichloroethene	UG/KG 9.4 UJ	9.3 U	9.8 U	12 U	11 UJ
trans-1,3-Dichloropropene	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Trichloroethylene (TCE)	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Vinyl Chloride	UG/KG 4.7 UJ	4.6 U	4.9 U	6.0 U	5.7 UJ
Xylenes, Total	UG/KG 9.4 UJ	9.3 U	9.8 U	12 U	11 UJ

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L				
Tetrachloroethylene (PCE)	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Toluene	UG/KG 2.7 J	0.94 J	0.73 J	0.84 J	0.96 J
Total 1,2-Dichloroethene	UG/KG 12 U	9.3 U	8.9 U	9.7 UJ	9.7 UJ
trans-1,3-Dichloropropene	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Trichloroethylene (TCE)	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Vinyl Chloride	UG/KG 5.8 U	4.7 U	4.4 U	4.8 UJ	4.8 UJ
Xylenes, Total	UG/KG 12 U	9.3 U	8.9 U	9.7 UJ	9.7 UJ

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A1-UST-SB3	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076-0141-0001-TB	076SB-0062M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-18703-25	240-17796-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	12/11/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L		1.0 U	1.0 U	4.4 U
Tetrachloroethylene (PCE)	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Toluene	UG/KG 1.7 J	1.1 J	1.0 U	1.0 U	4.4 U
Total 1,2-Dichloroethene	UG/KG 11 U	10 U	2.0 U	2.0 U	8.8 U
trans-1,3-Dichloropropene	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Trichloroethylene (TCE)	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Vinyl Chloride	UG/KG 5.5 U	5.1 U	1.0 U	1.0 U	4.4 U
Xylenes, Total	UG/KG 11 U	10 U	2.0 U	2.0 U	8.8 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB1	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3
Field Sample ID:	076SB-0070M-0001-SO	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO
Lab Sample ID:	240-17810-3	240-17796-25	240-17810-4	240-17796-26	240-17810-5
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/16/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Tetrachloroethylene (PCE)	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Toluene	UG/KG 5.2 U	1.0 J	2.9 U	4.2 U	4.9 U
Total 1,2-Dichloroethene	UG/KG 10 U	12 U	5.9 U	8.3 U	9.7 U
trans-1,3-Dichloropropene	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Trichloroethylene (TCE)	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Vinyl Chloride	UG/KG 5.2 U	5.9 U	2.9 U	4.2 U	4.9 U
Xylenes, Total	UG/KG 10 U	14	5.9 U	8.3 U	9.7 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
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UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5
Field Sample ID:	076-0068-0001-TB	076SB-0065M-0001-SO	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO
Lab Sample ID:	240-17796-21	240-17796-27	240-17810-6	240-17796-20	240-17796-28
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/16/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Tetrachloroethylene (PCE)	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Toluene	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Total 1,2-Dichloroethene	UG/KG 2.0 U	11 U	13 U	2.0 U	9.1 U
trans-1,3-Dichloropropene	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Trichloroethylene (TCE)	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Vinyl Chloride	UG/KG 1.0 U	5.3 U	6.3 U	1.0 U	4.6 U
Xylenes, Total	UG/KG 2.0 U	11 U	13 U	2.0 U	9.1 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76					
Location ID:	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3	76-DDS-DU2-SS	76-PCA-DU2-SS
Field Sample ID:	076SB-0074M-0001-SO	076SB-0075M-0001-TB	076SB-0078-0001-SO	076SS-0002M-0001-SO	076SS-0020M-0001-SO
Lab Sample ID:	240-17810-7	240-17810-8	240-18544-18	240-17317-1	240-17422-2
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/16/2012	11/16/2012	11/6/2012	11/7/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 6.0 U	1.0 U	5.3 U		5.8 U
Tetrachloroethylene (PCE)	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Toluene	UG/KG 0.33 J	1.0 U	4.0 J	8.9 U	5.8 U
Total 1,2-Dichloroethene	UG/KG 12 U	2.0 U		18 U	12 U
trans-1,3-Dichloropropene	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Trichloroethylene (TCE)	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Vinyl Chloride	UG/KG 6.0 U	1.0 U		8.9 U	5.8 U
Xylenes, Total	UG/KG 12 U	2.0 U	11 U	18 U	12 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-PCA-DU2-SS	76-U3-UST-SB1	76-U3-UST-SB2	76-U3-UST-SB3	76-U4-DU1-SB1
Field Sample ID:	076SS-0021M-0001-SO	076SB-0137-0001-TB	076SB-0138-0001-TB	076SB-0139-0001-TB	076SB-0025M-0001-SO
Lab Sample ID:	240-17422-3	240-18703-2	240-18703-3	240-18703-4	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/7/2012	12/11/2012	12/11/2012	12/11/2012	11/15/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Tetrachloroethylene (PCE)	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Toluene	UG/KG 0.36 J	1.0 U	1.0 U	1.0 U	4.2 U
Total 1,2-Dichloroethene	UG/KG 12 U	2.0 U	2.0 U	2.0 U	8.3 U
trans-1,3-Dichloropropene	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Trichloroethylene (TCE)	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Vinyl Chloride	UG/KG 5.9 U	1.0 U	1.0 U	1.0 U	4.2 U
Xylenes, Total	UG/KG 12 U	2.0 U	2.0 U	2.0 U	8.3 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Tetrachloroethylene (PCE)	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Toluene	UG/KG 4.3 U	5.1 U	4.9 U	0.33 J	4.8 UJ
Total 1,2-Dichloroethene	UG/KG 8.7 U	10 U	9.7 U	12 U	9.5 UJ
trans-1,3-Dichloropropene	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Trichloroethylene (TCE)	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Vinyl Chloride	UG/KG 4.3 U	5.1 U	4.9 U	6.0 U	4.8 UJ
Xylenes, Total	UG/KG 8.7 U	10 U	9.7 U	12 U	9.5 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Tetrachloroethylene (PCE)	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Toluene	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	0.40 J
Total 1,2-Dichloroethene	UG/KG 9.1 UJ	610 UJ	9.1 UJ	8.8 UJ	11 R
trans-1,3-Dichloropropene	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Trichloroethylene (TCE)	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Vinyl Chloride	UG/KG 4.6 UJ	300 UJ	4.5 UJ	4.4 UJ	5.4 R
Xylenes, Total	UG/KG 9.1 UJ	610 UJ	9.1 UJ	8.8 UJ	11 R

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-U5-DU1-SB5
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0044M-0001-TB
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-17768-16
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Tetrachloroethylene (PCE)	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Toluene	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Total 1,2-Dichloroethene	UG/KG 9.0 UJ	9.2 UJ	11 R	11 UJ	2.0 U
trans-1,3-Dichloropropene	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Trichloroethylene (TCE)	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Vinyl Chloride	UG/KG 4.5 UJ	4.6 UJ	5.3 R	5.5 UJ	1.0 U
Xylenes, Total	UG/KG 9.0 UJ	9.2 UJ	11 R	11 UJ	2.0 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3
Field Sample ID:	076SB-0102M-0001-SO	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO
Lab Sample ID:	240-18544-21	240-18544-22	240-18544-23	240-18544-24	240-18544-25
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate		Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L				
Tetrachloroethylene (PCE)	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Toluene	UG/KG 1.7 J	1.5 J	1.4 J	1.5 J	0.97 J
Total 1,2-Dichloroethene	UG/KG 11 U	11 U	9.5 U	12 U	9.4 U
trans-1,3-Dichloropropene	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Trichloroethylene (TCE)	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Vinyl Chloride	UG/KG 5.6 U	5.4 U	4.7 U	5.8 U	4.7 U
Xylenes, Total	UG/KG 11 U	11 U	9.5 U	12 U	9.4 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB3	76-102-PCA-SB4	76-102-PCA-SB5	76-A6-UST-SB13	76-U10-DU1-SB5
Field Sample ID:	076SB-0107M-0001-SO	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076-0142-0001-TB	076SB-0052M-0001-TB
Lab Sample ID:	240-18544-26	240-18544-27	240-18544-28	240-18703-26	240-17796-37
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/11/2012	11/15/2012
Field QC:	Field Duplicate				
Analysis Information:	1X	1X	1X	1X	1X
tert-Butyl Methyl Ether	UG/L			1.0 U	1.0 U
Tetrachloroethylene (PCE)	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Toluene	UG/KG 1.0 J	1.3 J	1.0 J	1.0 U	1.0 U
Total 1,2-Dichloroethene	UG/KG 10 U	8.9 U	7.9 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Trichloroethylene (TCE)	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Vinyl Chloride	UG/KG 5.2 U	4.4 U	4.0 U	1.0 U	1.0 U
Xylenes, Total	UG/KG 10 U	8.9 U	7.9 U	2.0 U	2.0 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 U	50 U	51 U	0.95 U	0.97 U
1,2-Dichlorobenzene	UG/KG	50 U	50 U	51 U	0.95 U	0.97 U
1,3-Dichlorobenzene	UG/KG	50 U	50 U	51 U	0.95 U	0.97 U
1,4-Dichlorobenzene	UG/KG	50 U	50 U	51 U	0.95 U	0.97 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	150 U	4.8 U	4.9 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	150 U	4.8 U	4.9 U
2,4-Dichlorophenol	UG/KG	150 UJ	150 UJ	150 U	1.9 U	1.9 U
2,4-Dimethylphenol	UG/KG	150 U	150 U	150 U	1.9 U	1.9 U
2,4-Dinitrophenol	UG/KG	330 U	330 U	330 UJ	4.8 U	4.9 U
2,4-Dinitrotoluene	UG/KG	200 U	200 U	200 U	4.8 U	4.9 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	200 U	4.8 U	4.9 U
2-Chloronaphthalene	UG/KG	50 U	50 U	51 U	0.95 U	0.97 U
2-Chlorophenol	UG/KG	50 U	50 U	51 U	0.95 U	0.97 U
2-Methylnaphthalene	UG/KG	10	13	61	0.19 U	0.19 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:	076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:	240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:		Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:	20X	20X	1X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	990 U	1000 U	50 U	49 U	51 U
1,2-Dichlorobenzene	UG/KG	990 U	1000 U	50 U	49 U	51 U
1,3-Dichlorobenzene	UG/KG	990 U	1000 U	50 U	49 U	51 U
1,4-Dichlorobenzene	UG/KG	990 U	1000 U	50 U	49 U	51 U
2,4,5-Trichlorophenol	UG/KG	3000 U	3000 U	150 U	150 U	150 U
2,4,6-Trichlorophenol	UG/KG	3000 U	3000 U	150 U	150 U	150 U
2,4-Dichlorophenol	UG/KG	3000 UJ	3000 UJ	150 UJ	150 UJ	150 U
2,4-Dimethylphenol	UG/KG	3000 U	3000 U	150 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	6500 U	6600 U	330 U	330 U	330 U
2,4-Dinitrotoluene	UG/KG	3900 U	4000 U	200 U	200 U	200 U
2,6-Dinitrotoluene	UG/KG	3900 U	4000 U	200 U	200 U	200 U
2-Chloronaphthalene	UG/KG	990 U	1000 U	50 U	49 U	51 U
2-Chlorophenol	UG/KG	990 U	1000 U	50 U	49 U	51 U
2-Methylnaphthalene	UG/KG	130 U	130 U	8.3	12	20

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	5X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	51 U	50 U	250 U	0.95 U	50 U
1,2-Dichlorobenzene	UG/KG	51 U	50 U	250 U	0.95 U	50 U
1,3-Dichlorobenzene	UG/KG	51 U	50 U	250 U	0.95 U	50 U
1,4-Dichlorobenzene	UG/KG	51 U	76	250 U	0.95 U	50 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	750 U	4.8 U	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	750 U	4.8 U	150 U
2,4-Dichlorophenol	UG/KG	150 U	150 U	750 U	1.9 U	150 UJ
2,4-Dimethylphenol	UG/KG	150 U	150 U	750 U	1.9 U	150 U
2,4-Dinitrophenol	UG/KG	330 UJ	330 UJ	1700 U	4.8 U	330 U
2,4-Dinitrotoluene	UG/KG	200 U	200 U	1000 U	4.8 U	200 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	1000 U	4.8 U	200 U
2-Chloronaphthalene	UG/KG	51 U	50 U	250 U	0.95 U	50 U
2-Chlorophenol	UG/KG	51 U	50 U	250 U	0.95 U	50 U
2-Methylnaphthalene	UG/KG	30	35	33 U	0.19 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	2.5X	10X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 U	130 U	250 U	130 U	510 U
1,2-Dichlorobenzene	UG/KG	50 U	130 U	250 U	130 U	510 U
1,3-Dichlorobenzene	UG/KG	50 U	130 U	250 U	130 U	510 U
1,4-Dichlorobenzene	UG/KG	50 U	130 U	250 U	130 U	510 U
2,4,5-Trichlorophenol	UG/KG	150 U	380 U	760 U	380 U	1500 U
2,4,6-Trichlorophenol	UG/KG	150 U	380 U	760 U	380 U	1500 U
2,4-Dichlorophenol	UG/KG	150 UJ	380 U	760 U	380 U	1500 U
2,4-Dimethylphenol	UG/KG	150 U	380 U	760 U	380 U	1500 U
2,4-Dinitrophenol	UG/KG	330 U	830 UJ	1700 UJ	830 U	3300 U
2,4-Dinitrotoluene	UG/KG	200 UJ	500 U	1000 U	500 U	2000 U
2,6-Dinitrotoluene	UG/KG	200 U	500 U	1000 U	500 U	2000 U
2-Chloronaphthalene	UG/KG	50 U	130 U	250 U	130 U	510 U
2-Chlorophenol	UG/KG	50 U	130 U	250 U	130 U	510 U
2-Methylnaphthalene	UG/KG	6.6 U	140	34 U	17 U	68 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	2.5X	5X	4X	1X	2.5X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	120 U	250 U	200 U	50 U	120 U
1,2-Dichlorobenzene	UG/KG	120 U	250 U	200 U	50 U	120 U
1,3-Dichlorobenzene	UG/KG	120 U	250 U	200 U	50 U	120 U
1,4-Dichlorobenzene	UG/KG	120 U	250 U	200 U	50 U	120 U
2,4,5-Trichlorophenol	UG/KG	370 U	760 U	610 U	150 U	370 U
2,4,6-Trichlorophenol	UG/KG	370 U	760 U	610 U	150 U	370 U
2,4-Dichlorophenol	UG/KG	370 U	760 U	610 U	150 U	370 U
2,4-Dimethylphenol	UG/KG	370 U	760 U	610 U	150 U	370 U
2,4-Dinitrophenol	UG/KG	820 U	1700 UJ	1300 U	330 UJ	820 U
2,4-Dinitrotoluene	UG/KG	500 U	1000 U	810 U	200 U	500 U
2,6-Dinitrotoluene	UG/KG	500 U	1000 U	810 U	200 U	500 U
2-Chloronaphthalene	UG/KG	120 U	250 U	200 U	50 U	120 U
2-Chlorophenol	UG/KG	120 U	250 U	200 U	50 U	120 U
2-Methylnaphthalene	UG/KG	11 J	1000	19 J	19	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	10X	5X	5X	10X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	500 U	250 U	250 U	510 U	51 U
1,2-Dichlorobenzene	UG/KG	500 U	250 U	250 U	510 U	51 U
1,3-Dichlorobenzene	UG/KG	500 U	250 U	250 U	510 U	51 U
1,4-Dichlorobenzene	UG/KG	500 U	250 U	250 U	510 U	51 U
2,4,5-Trichlorophenol	UG/KG	1500 U	750 U	740 U	1500 U	150 U
2,4,6-Trichlorophenol	UG/KG	1500 U	750 U	740 U	1500 U	150 U
2,4-Dichlorophenol	UG/KG	1500 U	750 U	740 U	1500 U	150 U
2,4-Dimethylphenol	UG/KG	1500 U	750 U	740 U	1500 U	150 U
2,4-Dinitrophenol	UG/KG	3300 U	1600 U	1600 U	3300 U	330 U
2,4-Dinitrotoluene	UG/KG	2000 U	1000 U	990 U	2000 U	200 U
2,6-Dinitrotoluene	UG/KG	2000 U	1000 U	990 U	2000 U	200 U
2-Chloronaphthalene	UG/KG	500 U	250 U	250 U	510 U	51 U
2-Chlorophenol	UG/KG	500 U	250 U	250 U	510 U	51 U
2-Methylnaphthalene	UG/KG	220	31 J	33 U	250	9.4

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	12.5X	1X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	51 U	620 U	49 U	50 U	50 U
1,2-Dichlorobenzene	UG/KG	51 U	620 U	49 U	50 U	50 U
1,3-Dichlorobenzene	UG/KG	51 U	620 U	49 U	50 U	50 U
1,4-Dichlorobenzene	UG/KG	51 U	620 U	49 U	50 U	50 U
2,4,5-Trichlorophenol	UG/KG	150 U	1900 U	150 U	150 U	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	1900 U	150 U	150 U	150 U
2,4-Dichlorophenol	UG/KG	150 U	1900 U	150 UJ	150 UJ	150 UJ
2,4-Dimethylphenol	UG/KG	150 U	1900 U	150 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	330 U	4100 UJ	330 U	330 U	330 U
2,4-Dinitrotoluene	UG/KG	200 U	2500 U	200 U	200 U	200 U
2,6-Dinitrotoluene	UG/KG	200 U	2500 U	200 U	200 U	200 U
2-Chloronaphthalene	UG/KG	51 U	620 U	49 U	50 U	50 U
2-Chlorophenol	UG/KG	51 U	620 U	49 U	50 U	50 U
2-Methylnaphthalene	UG/KG	9.4	450	3.3 J	6.7 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 U	50 U	50 U	50 U	51 U
1,2-Dichlorobenzene	UG/KG	50 U	50 U	50 U	50 U	51 U
1,3-Dichlorobenzene	UG/KG	50 U	50 U	50 U	50 U	51 U
1,4-Dichlorobenzene	UG/KG	50 U	50 U	50 U	50 U	51 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	150 U	150 U	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	150 U	150 U	150 U
2,4-Dichlorophenol	UG/KG	150 UJ	150 UJ	150 UJ	150 UJ	150 UJ
2,4-Dimethylphenol	UG/KG	150 U	150 U	150 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	330 U	330 U	330 U	330 U	330 U
2,4-Dinitrotoluene	UG/KG	200 U	200 U	200 U	200 U	200 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	200 U	200 U	200 U
2-Chloronaphthalene	UG/KG	50 U	50 U	50 U	50 U	51 U
2-Chlorophenol	UG/KG	50 U	50 U	50 U	50 U	51 U
2-Methylnaphthalene	UG/KG	6.7 U	6.7 U	6.6 U	6.6 U	4.2 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	10X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 UJ	50 U	0.95 U	49 U	500 U
1,2-Dichlorobenzene	UG/KG	50 UJ	50 U	0.95 U	49 U	500 U
1,3-Dichlorobenzene	UG/KG	50 U	50 U	0.95 U	49 U	500 U
1,4-Dichlorobenzene	UG/KG	50 U	50 U	0.95 U	49 U	500 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	4.8 U	150 U	1500 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	4.8 U	150 U	1500 U
2,4-Dichlorophenol	UG/KG	150 UJ	150 UJ	1.9 U	150 U	1500 U
2,4-Dimethylphenol	UG/KG	150 U	150 U	1.9 U	150 U	1500 U
2,4-Dinitrophenol	UG/KG	330 U	330 U	4.8 U	330 UJ	3300 U
2,4-Dinitrotoluene	UG/KG	200 UJ	200 U	4.8 U	200 U	2000 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	4.8 U	200 U	2000 U
2-Chloronaphthalene	UG/KG	50 U	50 U	0.95 U	49 U	500 U
2-Chlorophenol	UG/KG	50 U	50 U	0.95 U	49 U	500 U
2-Methylnaphthalene	UG/KG	5.8 J	5.0 J	0.19 U	4.5 J	67 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:	240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	10X	2.5X	2.5X

Semivolatile Organic Compounds by Capillary GC/MS

	Units				
1,2,4-Trichlorobenzene	UG/KG	50 U	130 U	490 U	130 U
1,2-Dichlorobenzene	UG/KG	50 U	130 U	490 U	130 U
1,3-Dichlorobenzene	UG/KG	50 U	130 U	490 U	130 U
1,4-Dichlorobenzene	UG/KG	50 U	130 U	490 U	130 U
2,4,5-Trichlorophenol	UG/KG	150 U	380 U	1500 U	380 U
2,4,6-Trichlorophenol	UG/KG	150 U	380 U	1500 U	380 U
2,4-Dichlorophenol	UG/KG	150 U	380 U	1500 U	380 U
2,4-Dimethylphenol	UG/KG	150 U	380 U	1500 U	380 U
2,4-Dinitrophenol	UG/KG	330 UJ	840 U	3300 U	830 U
2,4-Dinitrotoluene	UG/KG	200 U	510 U	2000 U	500 U
2,6-Dinitrotoluene	UG/KG	200 U	510 U	2000 U	500 U
2-Chloronaphthalene	UG/KG	50 U	130 U	490 U	130 U
2-Chlorophenol	UG/KG	50 U	130 U	490 U	130 U
2-Methylnaphthalene	UG/KG	25	17 U	66 U	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	2.5X	1X	10X	10X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units				
1,2,4-Trichlorobenzene	UG/KG	130 U	0.97 U	500 U	500 U
1,2-Dichlorobenzene	UG/KG	130 U	0.97 U	500 U	500 U
1,3-Dichlorobenzene	UG/KG	130 U	0.97 U	500 U	500 U
1,4-Dichlorobenzene	UG/KG	130 U	0.97 U	500 U	500 U
2,4,5-Trichlorophenol	UG/KG	380 U	4.9 U	1500 U	1500 U
2,4,6-Trichlorophenol	UG/KG	380 U	4.9 U	1500 U	1500 U
2,4-Dichlorophenol	UG/KG	380 U	1.9 U	1500 U	1500 U
2,4-Dimethylphenol	UG/KG	380 U	1.9 U	1500 U	1500 U
2,4-Dinitrophenol	UG/KG	830 U	4.9 U	3300 U	3300 U
2,4-Dinitrotoluene	UG/KG	500 U	4.9 U	2000 U	2000 U
2,6-Dinitrotoluene	UG/KG	500 U	4.9 U	2000 U	2000 U
2-Chloronaphthalene	UG/KG	130 U	0.97 U	500 U	500 U
2-Chlorophenol	UG/KG	130 U	0.97 U	500 U	500 U
2-Methylnaphthalene	UG/KG	17 U	0.19 U	67 U	67 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	5X	1X	1X	2.5X	10X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	250 U	49 U	50 U	120 U	510 U
1,2-Dichlorobenzene	UG/KG	250 U	49 U	50 U	120 U	510 U
1,3-Dichlorobenzene	UG/KG	250 U	49 U	50 U	120 U	510 U
1,4-Dichlorobenzene	UG/KG	250 U	33 J	26 J	120 U	510 U
2,4,5-Trichlorophenol	UG/KG	740 U	150 U	150 U	370 U	1500 U
2,4,6-Trichlorophenol	UG/KG	740 U	150 U	150 U	370 U	1500 U
2,4-Dichlorophenol	UG/KG	740 U	150 U	150 U	370 U	1500 U
2,4-Dimethylphenol	UG/KG	740 U	150 U	150 U	370 U	1500 U
2,4-Dinitrophenol	UG/KG	1600 UJ	330 U	330 U	820 U	3300 U
2,4-Dinitrotoluene	UG/KG	990 U	200 U	200 U	500 U	2000 U
2,6-Dinitrotoluene	UG/KG	990 U	200 U	200 U	500 U	2000 U
2-Chloronaphthalene	UG/KG	250 U	49 U	50 U	120 U	510 U
2-Chlorophenol	UG/KG	250 U	49 U	50 U	120 U	510 U
2-Methylnaphthalene	UG/KG	210	18	15	17 U	68 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	5X	2.5X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 U	130 U	250 U	250 U	130 U
1,2-Dichlorobenzene	UG/KG	50 U	130 U	250 U	250 U	130 U
1,3-Dichlorobenzene	UG/KG	50 U	130 U	250 U	250 U	130 U
1,4-Dichlorobenzene	UG/KG	50 U	130 U	250 U	250 U	130 U
2,4,5-Trichlorophenol	UG/KG	150 U	380 U	760 U	760 U	380 U
2,4,6-Trichlorophenol	UG/KG	150 U	380 U	760 U	760 U	380 U
2,4-Dichlorophenol	UG/KG	150 U	380 U	760 U	760 U	380 U
2,4-Dimethylphenol	UG/KG	150 U	380 U	760 U	760 U	380 U
2,4-Dinitrophenol	UG/KG	330 UJ	830 U	1700 UJ	1700 UJ	830 U
2,4-Dinitrotoluene	UG/KG	200 U	500 U	1000 U	1000 U	500 U
2,6-Dinitrotoluene	UG/KG	200 U	500 U	1000 U	1000 U	500 U
2-Chloronaphthalene	UG/KG	50 U	130 U	250 U	250 U	130 U
2-Chlorophenol	UG/KG	50 U	130 U	250 U	250 U	130 U
2-Methylnaphthalene	UG/KG	9.2	17 U	34 U	27 J	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	2.5X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	51 U	50 U	130 U	50 U	50 U
1,2-Dichlorobenzene	UG/KG	51 U	50 U	130 U	50 U	50 U
1,3-Dichlorobenzene	UG/KG	51 U	50 U	130 U	50 U	50 U
1,4-Dichlorobenzene	UG/KG	51 U	50 U	130 U	50 U	50 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	380 U	150 U	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	380 U	150 U	150 U
2,4-Dichlorophenol	UG/KG	150 U	150 U	380 U	150 U	150 U
2,4-Dimethylphenol	UG/KG	150 U	150 U	380 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	330 UJ	330 UJ	840 U	330 UJ	330 U
2,4-Dinitrotoluene	UG/KG	200 U	200 U	510 U	200 U	200 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	510 U	200 U	200 U
2-Chloronaphthalene	UG/KG	51 U	50 U	130 U	50 U	50 U
2-Chlorophenol	UG/KG	51 U	50 U	130 U	50 U	50 U
2-Methylnaphthalene	UG/KG	8.0	6.4 J	17 U	24	23

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	5X	5X	5X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units				
1,2,4-Trichlorobenzene	UG/KG	51 U	250 U	250 U	250 U
1,2-Dichlorobenzene	UG/KG	51 U	250 U	250 U	250 U
1,3-Dichlorobenzene	UG/KG	51 U	250 U	250 U	250 U
1,4-Dichlorobenzene	UG/KG	51 U	250 U	250 U	250 U
2,4,5-Trichlorophenol	UG/KG	150 U	750 U	750 U	750 U
2,4,6-Trichlorophenol	UG/KG	150 U	750 U	750 U	750 U
2,4-Dichlorophenol	UG/KG	150 U	750 U	750 U	750 U
2,4-Dimethylphenol	UG/KG	150 U	750 U	750 U	750 U
2,4-Dinitrophenol	UG/KG	330 U	1700 U	1700 U	1600 J
2,4-Dinitrotoluene	UG/KG	200 U	1000 U	1000 U	1000 U
2,6-Dinitrotoluene	UG/KG	200 U	1000 U	1000 U	1000 U
2-Chloronaphthalene	UG/KG	51 U	250 U	250 U	250 U
2-Chlorophenol	UG/KG	51 U	250 U	250 U	250 U
2-Methylnaphthalene	UG/KG	54	43	22 J	33 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	12/6/2012
Field QC:					
Analysis Information:	5X	1X	1X	5X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	250 U	50 U	50 U	250 U	50 U
1,2-Dichlorobenzene	UG/KG	250 U	50 U	50 U	250 U	50 U
1,3-Dichlorobenzene	UG/KG	250 U	50 U	50 U	250 U	50 U
1,4-Dichlorobenzene	UG/KG	250 U	50 U	50 U	250 U	50 U
2,4,5-Trichlorophenol	UG/KG	750 U	150 U	150 U	750 U	150 U
2,4,6-Trichlorophenol	UG/KG	750 U	150 U	150 U	750 U	150 U
2,4-Dichlorophenol	UG/KG	750 U	150 U	150 U	750 U	150 UJ
2,4-Dimethylphenol	UG/KG	750 U	150 U	150 U	750 U	150 U
2,4-Dinitrophenol	UG/KG	1700 U	330 U	330 U	1600 U	330 U
2,4-Dinitrotoluene	UG/KG	1000 U	200 U	200 U	990 U	200 U
2,6-Dinitrotoluene	UG/KG	1000 U	200 U	200 U	990 U	200 U
2-Chloronaphthalene	UG/KG	250 U	50 U	50 U	250 U	50 U
2-Chlorophenol	UG/KG	250 U	50 U	50 U	250 U	50 U
2-Methylnaphthalene	UG/KG	20 J	7.8	4.2 J	33 U	4.9 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 U	50 U	50 U	50 UJ	50 U
1,2-Dichlorobenzene	UG/KG	50 U	50 U	50 U	50 UJ	50 U
1,3-Dichlorobenzene	UG/KG	50 U	50 U	50 U	50 UJ	50 U
1,4-Dichlorobenzene	UG/KG	50 U	50 U	50 U	50 UJ	50 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	150 U	150 UJ	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	150 U	150 UJ	150 U
2,4-Dichlorophenol	UG/KG	150 UJ	150 UJ	150 UJ	150 UJ	150 UJ
2,4-Dimethylphenol	UG/KG	150 U	150 U	150 U	150 UJ	150 U
2,4-Dinitrophenol	UG/KG	330 U	330 U	330 U	330 UJ	330 U
2,4-Dinitrotoluene	UG/KG	200 U	200 U	200 U	200 UJ	200 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	200 U	200 UJ	200 U
2-Chloronaphthalene	UG/KG	50 U	50 U	50 U	50 UJ	50 U
2-Chlorophenol	UG/KG	50 U	50 U	50 U	50 UJ	50 U
2-Methylnaphthalene	UG/KG	3.7 J	4.2 J	4.7 J	4.2 J	4.7 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	2.5X	10X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	50 U	50 U	130 U	500 U	50 U
1,2-Dichlorobenzene	UG/KG	50 U	50 U	130 U	500 U	50 U
1,3-Dichlorobenzene	UG/KG	50 U	50 U	130 U	500 U	50 U
1,4-Dichlorobenzene	UG/KG	50 U	50 U	130 U	500 U	50 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	380 U	1500 U	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	380 U	1500 U	150 U
2,4-Dichlorophenol	UG/KG	150 UJ	150 UJ	380 U	1500 U	150 U
2,4-Dimethylphenol	UG/KG	150 U	150 U	380 U	1500 U	150 U
2,4-Dinitrophenol	UG/KG	330 U	330 U	830 U	3300 U	330 U
2,4-Dinitrotoluene	UG/KG	200 U	200 U	500 U	2000 U	200 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	500 U	2000 U	200 U
2-Chloronaphthalene	UG/KG	50 U	50 U	130 U	500 U	50 U
2-Chlorophenol	UG/KG	50 U	50 U	130 U	500 U	50 U
2-Methylnaphthalene	UG/KG	4.8 J	5.0 J	17 U	67 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	10X	2.5X	1X	5X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units					
1,2,4-Trichlorobenzene	UG/KG	500 U	120 U	63 U	250 U	51 U
1,2-Dichlorobenzene	UG/KG	500 U	120 U	63 U	250 U	51 U
1,3-Dichlorobenzene	UG/KG	500 U	120 U	63 U	250 U	51 U
1,4-Dichlorobenzene	UG/KG	500 U	120 U	63 U	250 U	51 U
2,4,5-Trichlorophenol	UG/KG	1500 U	370 U	190 U	750 U	150 U
2,4,6-Trichlorophenol	UG/KG	1500 U	370 U	190 U	750 U	150 U
2,4-Dichlorophenol	UG/KG	1500 U	370 U	190 U	750 U	150 U
2,4-Dimethylphenol	UG/KG	1500 U	370 U	190 U	750 U	150 U
2,4-Dinitrophenol	UG/KG	3300 U	810 U	410 U	1700 UJ	330 UJ
2,4-Dinitrotoluene	UG/KG	2000 U	490 U	250 U	1000 U	200 U
2,6-Dinitrotoluene	UG/KG	2000 U	490 U	250 U	1000 U	200 U
2-Chloronaphthalene	UG/KG	500 U	120 U	63 U	250 U	51 U
2-Chlorophenol	UG/KG	500 U	120 U	63 U	250 U	51 U
2-Methylnaphthalene	UG/KG	67 U	16 U	8.6	33 U	4.7 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012
Field QC:			
Analysis Information:	1X	1X	1X

Semivolatile Organic Compounds by Capillary GC/MS

	Units			
1,2,4-Trichlorobenzene	UG/KG	51 U	50 U	51 U
1,2-Dichlorobenzene	UG/KG	51 U	50 U	51 U
1,3-Dichlorobenzene	UG/KG	51 U	50 U	51 U
1,4-Dichlorobenzene	UG/KG	51 U	50 U	51 U
2,4,5-Trichlorophenol	UG/KG	150 U	150 U	150 U
2,4,6-Trichlorophenol	UG/KG	150 U	150 U	150 U
2,4-Dichlorophenol	UG/KG	150 U	150 U	150 U
2,4-Dimethylphenol	UG/KG	150 U	150 U	150 U
2,4-Dinitrophenol	UG/KG	330 UJ	330 UJ	340 UJ
2,4-Dinitrotoluene	UG/KG	200 U	200 U	200 U
2,6-Dinitrotoluene	UG/KG	200 U	200 U	200 U
2-Chloronaphthalene	UG/KG	51 U	50 U	51 U
2-Chlorophenol	UG/KG	51 U	50 U	51 U
2-Methylnaphthalene	UG/KG	6.2 J	9.0	9.3

Notes:

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U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	200 U	0.95 U	0.97 U
2-Nitroaniline	UG/KG 200 U	200 U	200 U	1.9 U	1.9 U
2-Nitrophenol	UG/KG 50 U	50 U	51 U	1.9 U	1.9 U
3,3'-Dichlorobenzidine	UG/KG 99 R	100 R	100 UJ	4.8 R	4.9 UJ
3-Nitroaniline	UG/KG 200 U	200 U	200 U	1.9 U	1.9 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	150 UJ	4.8 U	4.9 U
4-Bromophenyl phenyl ether	UG/KG 50 U	50 U	51 U	1.9 U	1.9 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	150 U	1.9 U	1.9 U
4-Chloroaniline	UG/KG 150 U	150 U	150 U	1.9 U	1.9 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	50 U	51 U	1.9 U	1.9 U
4-Nitroaniline	UG/KG 200 U	200 U	200 U	1.9 U	1.9 U
4-Nitrophenol	UG/KG 330 U	330 U	330 U	4.8 U	4.9 U
Acenaphthene	UG/KG 6.6 U	6.6 U	14	0.19 U	0.19 U
Acenaphthylene	UG/KG 6.6 U	6.6 U	41	0.19 U	0.19 U
Anthracene	UG/KG 6.6 U	13	95	0.19 U	0.19 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:	076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:	240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:		Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:	20X	20X	1X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 3900 U	4000 U	200 U	200 U	200 U
2-Nitroaniline	UG/KG 3900 U	4000 U	200 U	200 U	200 U
2-Nitrophenol	UG/KG 990 U	1000 U	50 U	49 U	51 U
3,3'-Dichlorobenzidine	UG/KG 2000 R	2000 R	100 R	99 R	100 UJ
3-Nitroaniline	UG/KG 3900 U	4000 U	200 U	200 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 3000 U	3000 U	150 U	150 U	150 U
4-Bromophenyl phenyl ether	UG/KG 990 U	1000 U	50 U	49 U	51 UJ
4-Chloro-3-Methylphenol	UG/KG 3000 U	3000 U	150 U	150 U	150 UJ
4-Chloroaniline	UG/KG 3000 U	3000 U	150 U	150 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 990 U	1000 U	50 U	49 U	51 UJ
4-Nitroaniline	UG/KG 3900 U	4000 U	200 U	200 U	200 U
4-Nitrophenol	UG/KG 6500 U	6600 U	330 U	330 U	330 U
Acenaphthene	UG/KG 130 U	130 U	6.7 U	6.6 U	5.6 J
Acenaphthylene	UG/KG 130 U	130 U	6.7 U	6.6 U	6.5 J
Anthracene	UG/KG 130 U	130 U	4.5 J	9.1 J	11

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	5X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	1000 U	0.95 U	200 U
2-Nitroaniline	UG/KG 200 U	200 U	1000 U	1.9 U	200 U
2-Nitrophenol	UG/KG 51 U	50 U	250 U	1.9 U	50 U
3,3'-Dichlorobenzidine	UG/KG 100 R	100 UJ	500 UJ	4.8 UJ	100 R
3-Nitroaniline	UG/KG 200 R	200 U	1000 U	1.9 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	750 U	4.8 U	150 U
4-Bromophenyl phenyl ether	UG/KG 51 UJ	50 UJ	250 U	1.9 U	50 U
4-Chloro-3-Methylphenol	UG/KG 150 UJ	150 UJ	750 U	1.9 U	150 U
4-Chloroaniline	UG/KG 150 R	150 U	750 U	1.9 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 51 UJ	50 UJ	250 U	1.9 U	50 U
4-Nitroaniline	UG/KG 200 R	200 U	1000 U	1.9 U	200 U
4-Nitrophenol	UG/KG 330 UJ	330 U	1700 U	4.8 U	330 U
Acenaphthene	UG/KG 7.1	5.9 J	33 U	0.19 U	6.6 U
Acenaphthylene	UG/KG 13	7.7	33 U	0.19 U	6.6 U
Anthracene	UG/KG 16	11	40	0.19 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	2.5X	10X
2-Methylphenol (o-Cresol)	UG/KG 200 U	500 U	1000 U	500 U	2000 U
2-Nitroaniline	UG/KG 200 U	500 U	1000 U	500 U	2000 U
2-Nitrophenol	UG/KG 50 U	130 U	250 U	130 U	510 U
3,3'-Dichlorobenzidine	UG/KG 100 R	250 UJ	510 U	250 U	1000 UJ
3-Nitroaniline	UG/KG 200 U	500 U	1000 U	500 U	2000 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	380 UJ	760 U	380 U	1500 U
4-Bromophenyl phenyl ether	UG/KG 50 U	130 U	250 U	130 U	510 U
4-Chloro-3-Methylphenol	UG/KG 150 U	380 U	760 U	380 U	1500 U
4-Chloroaniline	UG/KG 150 U	380 U	760 U	380 U	1500 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	130 U	250 U	130 U	510 U
4-Nitroaniline	UG/KG 200 U	500 U	1000 U	500 U	2000 U
4-Nitrophenol	UG/KG 330 U	830 U	1700 U	830 U	3300 U
Acenaphthene	UG/KG 6.6 U	86	34 U	17 U	68 U
Acenaphthylene	UG/KG 6.6 U	28	18 J	17 U	68 U
Anthracene	UG/KG 6.6 U	280	17 J	17 U	68 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	2.5X	5X	4X	1X	2.5X
2-Methylphenol (o-Cresol)	UG/KG 500 U	1000 U	810 U	200 U	500 U
2-Nitroaniline	UG/KG 500 U	1000 U	810 U	200 U	500 U
2-Nitrophenol	UG/KG 120 U	250 U	200 U	50 U	120 U
3,3'-Dichlorobenzidine	UG/KG 250 UJ	510 UJ	400 U	100 U	250 U
3-Nitroaniline	UG/KG 500 U	1000 U	810 U	200 U	500 U
4,6-Dinitro-2-Methylphenol	UG/KG 370 U	760 UJ	610 UJ	150 U	370 U
4-Bromophenyl phenyl ether	UG/KG 120 U	250 U	200 U	50 U	120 U
4-Chloro-3-Methylphenol	UG/KG 370 U	760 U	610 U	150 U	370 U
4-Chloroaniline	UG/KG 370 U	760 U	610 U	150 U	370 U
4-Chlorophenyl Phenyl Ether	UG/KG 120 U	250 U	200 U	50 U	120 U
4-Nitroaniline	UG/KG 500 U	1000 U	810 U	200 U	500 U
4-Nitrophenol	UG/KG 820 U	1700 U	1300 U	330 U	820 U
Acenaphthene	UG/KG 17 U	220	27 U	6.7 U	17 U
Acenaphthylene	UG/KG 17 U	95	27 U	6.7 U	17 U
Anthracene	UG/KG 17 U	630	27 U	5.0 J	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	10X	5X	5X	10X	1X
2-Methylphenol (o-Cresol)	UG/KG 2000 U	1000 U	990 U	2000 U	200 U
2-Nitroaniline	UG/KG 2000 U	1000 U	990 U	2000 U	200 U
2-Nitrophenol	UG/KG 500 U	250 U	250 U	510 U	51 U
3,3'-Dichlorobenzidine	UG/KG 1000 UJ	500 UJ	500 UJ	1000 UJ	100 UJ
3-Nitroaniline	UG/KG 2000 U	1000 U	990 U	2000 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 1500 U	750 U	740 U	1500 U	150 U
4-Bromophenyl phenyl ether	UG/KG 500 U	250 U	250 U	510 U	51 U
4-Chloro-3-Methylphenol	UG/KG 1500 U	750 U	740 U	1500 U	150 U
4-Chloroaniline	UG/KG 1500 U	750 U	740 U	1500 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 500 U	250 U	250 U	510 U	51 U
4-Nitroaniline	UG/KG 2000 U	1000 U	990 U	2000 U	200 U
4-Nitrophenol	UG/KG 3300 U	1600 U	1600 U	3300 U	330 U
Acenaphthene	UG/KG 480	33 U	33 U	390	6.7 U
Acenaphthylene	UG/KG 67 U	33 U	33 U	43 J	6.7 U
Anthracene	UG/KG 1800	24 J	33 U	1500	8.7

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	12.5X	1X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	2500 U	200 U	200 U	200 U
2-Nitroaniline	UG/KG 200 U	2500 U	200 U	200 U	200 U
2-Nitrophenol	UG/KG 51 U	620 U	49 U	50 U	50 U
3,3'-Dichlorobenzidine	UG/KG 100 UJ	1200 UJ	99 R	100 R	99 R
3-Nitroaniline	UG/KG 200 U	2500 U	200 U	200 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	1900 UJ	150 U	150 U	150 U
4-Bromophenyl phenyl ether	UG/KG 51 U	620 U	49 U	50 U	50 U
4-Chloro-3-Methylphenol	UG/KG 150 U	1900 U	150 U	150 U	150 U
4-Chloroaniline	UG/KG 150 U	1900 U	150 U	150 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 51 U	620 U	49 U	50 U	50 U
4-Nitroaniline	UG/KG 200 U	2500 U	200 U	200 U	200 U
4-Nitrophenol	UG/KG 330 U	4100 U	330 U	330 U	330 U
Acenaphthene	UG/KG 7.6	660	6.6 U	6.7 U	6.6 U
Acenaphthylene	UG/KG 6.8 U	55 J	6.6 U	6.7 U	6.6 U
Anthracene	UG/KG 30	2600	6.6 U	6.7 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	200 U	200 U	200 U
2-Nitroaniline	UG/KG 200 U	200 U	200 U	200 U	200 U
2-Nitrophenol	UG/KG 50 U	50 U	50 U	50 U	51 U
3,3'-Dichlorobenzidine	UG/KG 100 R	100 R	99 R	100 R	100 R
3-Nitroaniline	UG/KG 200 U	200 U	200 U	200 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	150 U	150 U	150 U
4-Bromophenyl phenyl ether	UG/KG 50 U	50 U	50 U	50 U	51 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	150 U	150 U	150 U
4-Chloroaniline	UG/KG 150 U	150 U	150 U	150 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	50 U	50 U	50 U	51 U
4-Nitroaniline	UG/KG 200 U	200 U	200 U	200 U	200 U
4-Nitrophenol	UG/KG 330 U	330 U	330 U	330 U	330 U
Acenaphthene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Acenaphthylene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Anthracene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	10X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	0.95 U	200 U	2000 U
2-Nitroaniline	UG/KG 200 U	200 U	1.9 U	200 U	2000 U
2-Nitrophenol	UG/KG 50 U	50 U	1.9 U	49 U	500 U
3,3'-Dichlorobenzidine	UG/KG 100 R	100 R	4.8 U	99 U	1000 UJ
3-Nitroaniline	UG/KG 200 U	200 U	1.9 U	200 U	2000 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	4.8 U	150 U	1500 U
4-Bromophenyl phenyl ether	UG/KG 50 U	50 U	1.9 U	49 U	500 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	1.9 U	150 U	1500 U
4-Chloroaniline	UG/KG 150 U	150 U	1.9 U	150 U	1500 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	50 U	1.9 U	49 U	500 U
4-Nitroaniline	UG/KG 200 U	200 U	1.9 U	200 U	2000 U
4-Nitrophenol	UG/KG 330 U	330 U	4.8 UJ	330 U	3300 U
Acenaphthene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Acenaphthylene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Anthracene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:	240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	10X	2.5X	2.5X
2-Methylphenol (o-Cresol)	UG/KG 200 U	510 U	2000 U	500 U	500 U
2-Nitroaniline	UG/KG 200 U	510 U	2000 U	500 U	500 U
2-Nitrophenol	UG/KG 50 U	130 U	490 U	130 U	130 U
3,3'-Dichlorobenzidine	UG/KG 99 U	250 UJ	990 U	250 UJ	250 U
3-Nitroaniline	UG/KG 200 U	510 U	2000 U	500 U	500 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 UJ	380 U	1500 U	380 U	380 U
4-Bromophenyl phenyl ether	UG/KG 50 U	130 U	490 U	130 U	130 U
4-Chloro-3-Methylphenol	UG/KG 150 U	380 U	1500 U	380 U	380 U
4-Chloroaniline	UG/KG 150 U	380 U	1500 U	380 U	380 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	130 U	490 U	130 U	130 U
4-Nitroaniline	UG/KG 200 U	510 U	2000 U	500 U	500 U
4-Nitrophenol	UG/KG 330 U	840 U	3300 U	830 U	830 U
Acenaphthene	UG/KG 6.6 U	17 U	66 U	17 U	17 U
Acenaphthylene	UG/KG 6.6 U	17 U	66 U	17 U	17 U
Anthracene	UG/KG 6.6 U	17 U	66 U	17 U	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	2.5X	1X	10X	10X	1X
2-Methylphenol (o-Cresol)	UG/KG 500 U	0.97 U	2000 U	2000 U	
2-Nitroaniline	UG/KG 500 U	1.9 U	2000 U	2000 U	
2-Nitrophenol	UG/KG 130 U	1.9 U	500 U	500 U	
3,3'-Dichlorobenzidine	UG/KG 250 UJ	4.9 UJ	1000 U	1000 UJ	
3-Nitroaniline	UG/KG 500 U	1.9 U	2000 U	2000 U	
4,6-Dinitro-2-Methylphenol	UG/KG 380 U	4.9 U	1500 U	1500 U	
4-Bromophenyl phenyl ether	UG/KG 130 U	1.9 U	500 U	500 U	
4-Chloro-3-Methylphenol	UG/KG 380 U	1.9 U	1500 U	1500 U	
4-Chloroaniline	UG/KG 380 U	1.9 U	1500 U	1500 UJ	
4-Chlorophenyl Phenyl Ether	UG/KG 130 U	1.9 U	500 U	500 U	
4-Nitroaniline	UG/KG 500 U	1.9 U	2000 U	2000 U	
4-Nitrophenol	UG/KG 830 U	4.9 U	3300 U	3300 U	
Acenaphthene	UG/KG 17 U	0.19 U	67 U	67 U	7.4 UJ
Acenaphthylene	UG/KG 17 U	0.19 U	67 U	67 U	7.4 UJ
Anthracene	UG/KG 17 U	0.19 U	67 U	67 U	7.4 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	5X	1X	1X	2.5X	10X
2-Methylphenol (o-Cresol)	UG/KG 990 U	200 U	200 U	500 U	2000 U
2-Nitroaniline	UG/KG 990 U	200 U	200 U	500 U	2000 U
2-Nitrophenol	UG/KG 250 U	49 U	50 U	120 U	510 U
3,3'-Dichlorobenzidine	UG/KG 500 UJ	98 R	100 U	250 U	1000 U
3-Nitroaniline	UG/KG 990 U	200 R	200 U	500 U	2000 U
4,6-Dinitro-2-Methylphenol	UG/KG 740 UJ	150 UJ	150 UJ	370 U	1500 U
4-Bromophenyl phenyl ether	UG/KG 250 U	49 U	50 U	120 U	510 U
4-Chloro-3-Methylphenol	UG/KG 740 U	150 U	150 U	370 U	1500 U
4-Chloroaniline	UG/KG 740 U	150 R	150 U	370 U	1500 U
4-Chlorophenyl Phenyl Ether	UG/KG 250 U	49 U	50 U	120 U	510 U
4-Nitroaniline	UG/KG 990 U	200 UJ	200 U	500 U	2000 U
4-Nitrophenol	UG/KG 1600 U	330 U	330 U	820 U	3300 U
Acenaphthene	UG/KG 220	6.6 U	6.7 U	17 U	68 U
Acenaphthylene	UG/KG 28 J	6.6 U	6.7 U	17 U	68 U
Anthracene	UG/KG 790	6.6 U	6.7 U	17 U	68 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	5X	2.5X
2-Methylphenol (o-Cresol)	UG/KG 200 U	500 U	1000 U	1000 U	500 U
2-Nitroaniline	UG/KG 200 U	500 U	1000 U	1000 U	500 U
2-Nitrophenol	UG/KG 50 U	130 U	250 U	250 U	130 U
3,3'-Dichlorobenzidine	UG/KG 99 U	250 U	510 U	500 U	250 U
3-Nitroaniline	UG/KG 200 U	500 U	1000 U	1000 U	500 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	380 U	760 U	760 U	380 U
4-Bromophenyl phenyl ether	UG/KG 50 U	130 U	250 U	250 U	130 U
4-Chloro-3-Methylphenol	UG/KG 150 U	380 U	760 U	760 U	380 U
4-Chloroaniline	UG/KG 150 U	380 U	760 U	760 U	380 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	130 U	250 U	250 U	130 U
4-Nitroaniline	UG/KG 200 U	500 U	1000 U	1000 U	500 U
4-Nitrophenol	UG/KG 330 U	830 U	1700 U	1700 U	830 U
Acenaphthene	UG/KG 6.6 U	17 U	34 U	34 U	17 U
Acenaphthylene	UG/KG 6.6 U	17 U	34 U	34 U	17 U
Anthracene	UG/KG 5.0 J	17 U	34 U	34 U	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	2.5X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	510 U	200 U	200 U
2-Nitroaniline	UG/KG 200 U	200 U	510 U	200 U	200 U
2-Nitrophenol	UG/KG 51 U	50 U	130 U	50 U	50 U
3,3'-Dichlorobenzidine	UG/KG 100 U	100 U	250 U	100 U	100 UJ
3-Nitroaniline	UG/KG 200 U	200 U	510 U	200 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	380 U	150 U	150 U
4-Bromophenyl phenyl ether	UG/KG 51 U	50 U	130 U	50 U	50 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	380 U	150 U	150 U
4-Chloroaniline	UG/KG 150 U	150 U	380 U	150 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 51 U	50 U	130 U	50 U	50 U
4-Nitroaniline	UG/KG 200 U	200 U	510 U	200 U	200 U
4-Nitrophenol	UG/KG 330 U	330 U	840 U	330 U	330 U
Acenaphthene	UG/KG 5.8 J	6.7 U	17 U	22	6.7 U
Acenaphthylene	UG/KG 6.8 U	6.7 U	17 U	6.7 U	6.7 U
Anthracene	UG/KG 17	6.7 U	17 U	72	12

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	5X	5X	5X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	1000 U	1000 U	1000 J	200 U
2-Nitroaniline	UG/KG 200 U	1000 U	1000 U	1000 U	200 U
2-Nitrophenol	UG/KG 51 U	250 U	250 U	250 U	50 U
3,3'-Dichlorobenzidine	UG/KG 100 UJ	500 UJ	500 UJ	500 UJ	100 UJ
3-Nitroaniline	UG/KG 200 U	1000 U	1000 U	1000 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	750 U	750 U	750 UJ	150 U
4-Bromophenyl phenyl ether	UG/KG 51 U	250 U	250 U	250 U	50 U
4-Chloro-3-Methylphenol	UG/KG 150 U	750 U	750 U	750 U	150 U
4-Chloroaniline	UG/KG 150 U	750 U	750 U	750 J	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 51 U	250 U	250 U	250 U	50 U
4-Nitroaniline	UG/KG 200 U	1000 U	1000 U	1000 U	200 U
4-Nitrophenol	UG/KG 330 U	1700 U	1700 U	1600 J	330 U
Acenaphthene	UG/KG 6.8 U	33 U	34 U	33 U	6.7 U
Acenaphthylene	UG/KG 6.8 U	33 U	34 U	33 U	6.7 U
Anthracene	UG/KG 6.8 U	33 U	22 J	33 U	6.7 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	12/6/2012
Field QC:					
Analysis Information:	5X	1X	1X	5X	1X
2-Methylphenol (o-Cresol)	UG/KG 1000 U	200 U	200 U	990 U	200 U
2-Nitroaniline	UG/KG 1000 U	200 U	200 U	990 U	200 U
2-Nitrophenol	UG/KG 250 U	50 U	50 U	250 U	50 U
3,3'-Dichlorobenzidine	UG/KG 500 UJ	99 UJ	100 UJ	500 UJ	100 R
3-Nitroaniline	UG/KG 1000 U	200 U	200 U	990 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 750 U	150 U	150 U	750 U	150 U
4-Bromophenyl phenyl ether	UG/KG 250 U	50 U	50 U	250 U	50 U
4-Chloro-3-Methylphenol	UG/KG 750 U	150 U	150 U	750 U	150 U
4-Chloroaniline	UG/KG 750 U	150 U	150 U	750 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 250 U	50 U	50 U	250 U	50 U
4-Nitroaniline	UG/KG 1000 U	200 U	200 U	990 U	200 U
4-Nitrophenol	UG/KG 1700 U	330 U	330 U	1600 U	330 U
Acenaphthene	UG/KG 33 U	6.6 U	6.7 U	27 J	6.7 U
Acenaphthylene	UG/KG 33 U	6.6 U	6.7 U	33 U	6.7 U
Anthracene	UG/KG 44	6.6 U	6.7 U	99	6.7 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	200 U	200 UJ	200 U
2-Nitroaniline	UG/KG 200 U	200 U	200 U	200 UJ	200 U
2-Nitrophenol	UG/KG 50 U	50 U	50 U	50 UJ	50 U
3,3'-Dichlorobenzidine	UG/KG 100 R	100 R	99 R	99 R	100 R
3-Nitroaniline	UG/KG 200 U	200 U	200 U	200 UJ	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	150 U	150 UJ	150 U
4-Bromophenyl phenyl ether	UG/KG 50 U	50 U	50 U	50 UJ	50 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	150 U	150 UJ	150 U
4-Chloroaniline	UG/KG 150 U	150 U	150 U	150 UJ	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	50 U	50 U	50 UJ	50 U
4-Nitroaniline	UG/KG 200 U	200 U	200 U	200 UJ	200 U
4-Nitrophenol	UG/KG 330 U	330 U	330 U	330 UJ	330 U
Acenaphthene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Acenaphthylene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Anthracene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U

Notes:

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U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	2.5X	10X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	500 U	2000 U	200 U
2-Nitroaniline	UG/KG 200 U	200 U	500 U	2000 U	200 U
2-Nitrophenol	UG/KG 50 U	50 U	130 U	500 U	50 U
3,3'-Dichlorobenzidine	UG/KG 100 R	100 R	250 U	1000 U	100 U
3-Nitroaniline	UG/KG 200 U	200 U	500 U	2000 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	380 U	1500 U	150 U
4-Bromophenyl phenyl ether	UG/KG 50 U	50 U	130 U	500 U	50 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	380 U	1500 U	150 U
4-Chloroaniline	UG/KG 150 U	150 U	380 U	1500 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 50 U	50 U	130 U	500 U	50 U
4-Nitroaniline	UG/KG 200 U	200 U	500 U	2000 U	200 U
4-Nitrophenol	UG/KG 330 U	330 U	830 U	3300 U	330 U
Acenaphthene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Acenaphthylene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Anthracene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	10X	2.5X	1X	5X	1X
2-Methylphenol (o-Cresol)	UG/KG 2000 U	490 U	250 U	1000 U	200 U
2-Nitroaniline	UG/KG 2000 U	490 U	250 U	1000 U	200 U
2-Nitrophenol	UG/KG 500 U	120 U	63 U	250 U	51 U
3,3'-Dichlorobenzidine	UG/KG 1000 U	250 U	130 U	500 U	100 U
3-Nitroaniline	UG/KG 2000 U	490 U	250 U	1000 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 1500 U	370 U	190 U	750 U	150 U
4-Bromophenyl phenyl ether	UG/KG 500 U	120 U	63 U	250 U	51 U
4-Chloro-3-Methylphenol	UG/KG 1500 U	370 U	190 U	750 U	150 U
4-Chloroaniline	UG/KG 1500 U	370 U	190 U	750 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 500 U	120 U	63 U	250 U	51 U
4-Nitroaniline	UG/KG 2000 U	490 U	250 U	1000 U	200 U
4-Nitrophenol	UG/KG 3300 U	810 U	410 U	1700 U	330 U
Acenaphthene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Acenaphthylene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Anthracene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012
Field QC:			
Analysis Information:	1X	1X	1X
2-Methylphenol (o-Cresol)	UG/KG 200 U	200 U	200 U
2-Nitroaniline	UG/KG 200 U	200 U	200 U
2-Nitrophenol	UG/KG 51 U	50 U	51 U
3,3'-Dichlorobenzidine	UG/KG 100 U	100 U	100 U
3-Nitroaniline	UG/KG 200 U	200 U	200 U
4,6-Dinitro-2-Methylphenol	UG/KG 150 U	150 U	150 U
4-Bromophenyl phenyl ether	UG/KG 51 U	50 U	51 U
4-Chloro-3-Methylphenol	UG/KG 150 U	150 U	150 U
4-Chloroaniline	UG/KG 150 U	150 U	150 U
4-Chlorophenyl Phenyl Ether	UG/KG 51 U	50 U	51 U
4-Nitroaniline	UG/KG 200 U	200 U	200 U
4-Nitrophenol	UG/KG 330 U	330 U	340 U
Acenaphthene	UG/KG 6.7 U	6.7 U	6.8 U
Acenaphthylene	UG/KG 6.7 U	6.7 U	6.8 U
Anthracene	UG/KG 6.7 U	6.7 U	6.8 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Benzo(a)anthracene	UG/KG 21	31	270	0.19 U	0.19 U
Benzo(a)pyrene	UG/KG 20	23	260	0.19 UJ	0.19 U
Benzo(b)fluoranthene	UG/KG 30	32	370	0.19 U	0.19 U
Benzo(g,h,i)perylene	UG/KG 12	15	120	0.19 U	0.19 U
Benzo(k)fluoranthene	UG/KG 7.7	10	150	0.19 U	0.19 U
Benzoic acid	UG/KG 660 R	660 R	670 U	24 U	24 U
Benzyl alcohol	UG/KG 330 U	330 U	330 U	4.8 U	4.9 U
Benzyl butyl phthalate	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
bis(2-Chloroethoxy) Methane	UG/KG 99 U	100 U	100 U	0.95 U	0.97 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 99 U	100 U	100 U	0.95 U	0.97 U
bis(2-Chloroisopropyl) Ether	UG/KG 99 U	100 U	100 U	0.95 U	0.97 U
bis(2-Ethylhexyl) Phthalate	UG/KG 50 U	50 U	30 J	1.9 U	1.9 U
Carbazole	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Chrysene	UG/KG 20	28	290	0.19 U	0.19 U
Cresols, m & p	UG/KG 400 U	400 U	410 U	1.9 U	1.9 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:	076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:	240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:		Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:	20X	20X	1X	1X	1X
Benzo(a)anthracene	UG/KG 200	270	23	33	46
Benzo(a)pyrene	UG/KG 140	220	23	32	52
Benzo(b)fluoranthene	UG/KG 190	270	35	50	71
Benzo(g,h,i)perylene	UG/KG 120 J	140	17	26	31
Benzo(k)fluoranthene	UG/KG 110 J	110 J	8.6 J	19 J	28
Benzoic acid	UG/KG 13000 R	13000 R	660 R	650 R	670 U
Benzyl alcohol	UG/KG 6500 U	6600 U	330 U	330 U	330 U
Benzyl butyl phthalate	UG/KG 990 U	1000 U	50 U	49 U	51 U
bis(2-Chloroethoxy) Methane	UG/KG 2000 U	2000 U	100 U	99 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 2000 U	2000 U	100 U	99 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 2000 U	2000 U	100 U	99 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 990 U	1000 U	50 U	49 U	72
Carbazole	UG/KG 990 U	1000 U	50 U	49 U	51 U
Chrysene	UG/KG 160 J	280 J	28 J	39 J	55
Cresols, m & p	UG/KG 7900 U	8000 U	400 U	390 U	400 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	5X	1X	1X
Benzo(a)anthracene	UG/KG 71	51	84	0.19 U	6.6 U
Benzo(a)pyrene	UG/KG 69	68	74	0.19 U	6.6 U
Benzo(b)fluoranthene	UG/KG 110	100	96	0.19 U	6.6 U
Benzo(g,h,i)perylene	UG/KG 39 J	29	47	0.19 U	6.6 U
Benzo(k)fluoranthene	UG/KG 38	35	56	0.19 U	6.6 U
Benzoic acid	UG/KG 670 UJ	660 U	3300 U	24 U	660 R
Benzyl alcohol	UG/KG 330 U	330 U	1700 U	4.8 U	330 U
Benzyl butyl phthalate	UG/KG 51 U	50 U	250 U	0.95 U	50 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	500 U	0.95 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	500 U	0.95 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	500 U	0.95 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 89	50	250 U	1.9 U	50 U
Carbazole	UG/KG 51 U	50 U	250 U	0.95 U	50 U
Chrysene	UG/KG 73	79	98	0.19 U	6.6 U
Cresols, m & p	UG/KG 410 U	400 U	2000 U	1.9 U	400 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	2.5X	10X
Benzo(a)anthracene	UG/KG 6.6 U	540	92	17 U	68 U
Benzo(a)pyrene	UG/KG 6.6 U	510	120	17 U	99
Benzo(b)fluoranthene	UG/KG 6.6 U	790	87	17 U	68 U
Benzo(g,h,i)perylene	UG/KG 6.6 U	200 J	58	17 U	68 U
Benzo(k)fluoranthene	UG/KG 6.6 U	300	55	17 U	68 U
Benzoic acid	UG/KG 660 R	1700 U	3400 U	1700 U	6700 U
Benzyl alcohol	UG/KG 330 U	830 U	1700 U	830 U	3300 U
Benzyl butyl phthalate	UG/KG 50 U	130 U	250 U	130 U	510 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	250 U	510 U	250 U	1000 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	250 U	510 U	250 U	1000 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	250 U	510 U	250 U	1000 U
bis(2-Ethylhexyl) Phthalate	UG/KG 50 U	130 U	250 U	54 J	510 U
Carbazole	UG/KG 50 U	170	250 U	130 U	510 U
Chrysene	UG/KG 6.6 U	570	110	17 U	68 U
Cresols, m & p	UG/KG 400 U	1000 U	2000 U	1000 U	4000 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	2.5X	5X	4X	1X	2.5X
Benzo(a)anthracene	UG/KG 17 U	1700	27 U	16	17 U
Benzo(a)pyrene	UG/KG 17 U	1500	46	20	17 U
Benzo(b)fluoranthene	UG/KG 17 U	2300	28	18	17 U
Benzo(g,h,i)perylene	UG/KG 17 U	640 J	24 J	8.9	17 U
Benzo(k)fluoranthene	UG/KG 17 U	830	27 U	6.0 J	17 U
Benzoic acid	UG/KG 1600 U	3300 U	2700 U	670 U	1600 U
Benzyl alcohol	UG/KG 820 U	1700 U	1300 U	330 U	820 U
Benzyl butyl phthalate	UG/KG 120 U	250 U	200 U	50 U	120 U
bis(2-Chloroethoxy) Methane	UG/KG 250 U	510 U	400 U	100 U	250 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 250 U	510 U	400 U	100 U	250 U
bis(2-Chloroisopropyl) Ether	UG/KG 250 U	510 U	400 U	100 U	250 U
bis(2-Ethylhexyl) Phthalate	UG/KG 120 U	250 U	200 U	31 J	58 J
Carbazole	UG/KG 120 U	390	200 U	50 U	120 U
Chrysene	UG/KG 17 U	1700	27 U	15	17 U
Cresols, m & p	UG/KG 990 U	2000 U	1600 U	400 U	990 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	10X	5X	5X	10X	1X
Benzo(a)anthracene	UG/KG 2800	53	29 J	3400	23
Benzo(a)pyrene	UG/KG 2300	85	64	2900	27
Benzo(b)fluoranthene	UG/KG 3000	68	45	4300	29
Benzo(g,h,i)perylene	UG/KG 1400	41	27 J	1700	13
Benzo(k)fluoranthene	UG/KG 1200	27 J	18 J	1300	7.7
Benzoic acid	UG/KG 6700 U	3300 U	3300 U	6700 U	670 U
Benzyl alcohol	UG/KG 3300 U	1600 U	1600 U	3300 U	330 U
Benzyl butyl phthalate	UG/KG 500 U	250 U	250 U	510 U	51 U
bis(2-Chloroethoxy) Methane	UG/KG 1000 U	500 U	500 U	1000 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 1000 U	500 U	500 U	1000 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 1000 U	500 U	500 U	1000 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 500 U	250 U	250 U	510 U	51 U
Carbazole	UG/KG 990	250 U	250 U	850	51 U
Chrysene	UG/KG 2800	63	36	3300	21
Cresols, m & p	UG/KG 4000 U	2000 U	2000 U	4000 U	400 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	12.5X	1X	1X	1X
Benzo(a)anthracene	UG/KG 86	5800	6.6 U	6.7 U	6.6 U
Benzo(a)pyrene	UG/KG 81	5100	6.6 U	6.7 U	6.6 U
Benzo(b)fluoranthene	UG/KG 100	8000	6.6 U	6.7 U	6.6 U
Benzo(g,h,i)perylene	UG/KG 52	2000 J	6.6 U	6.7 U	6.6 U
Benzo(k)fluoranthene	UG/KG 35	2200	6.6 U	6.7 U	6.6 U
Benzoic acid	UG/KG 670 U	8200 U	650 R	660 R	650 R
Benzyl alcohol	UG/KG 330 U	4100 U	330 U	330 U	330 U
Benzyl butyl phthalate	UG/KG 51 U	620 U	49 U	50 U	50 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	1200 U	99 U	100 U	99 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	1200 U	99 U	100 U	99 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	1200 U	99 U	100 U	99 U
bis(2-Ethylhexyl) Phthalate	UG/KG 51 U	620 U	49 U	50 U	50 U
Carbazole	UG/KG 51 U	1700	49 U	50 U	50 U
Chrysene	UG/KG 94	6000	6.6 U	6.7 U	6.6 U
Cresols, m & p	UG/KG 410 U	5000 U	390 U	400 U	400 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Benzo(a)anthracene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Benzo(a)pyrene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Benzo(b)fluoranthene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Benzo(g,h,i)perylene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Benzo(k)fluoranthene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Benzoic acid	UG/KG 660 R	660 R	660 R	660 R	670 R
Benzyl alcohol	UG/KG 330 U	330 U	330 U	330 U	330 U
Benzyl butyl phthalate	UG/KG 50 U	50 U	50 U	50 U	51 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	99 U	100 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	99 U	100 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	99 U	100 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 50 U	50 U	50 U	50 U	51 U
Carbazole	UG/KG 50 U	50 U	50 U	50 U	51 U
Chrysene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Cresols, m & p	UG/KG 400 U	400 U	400 U	400 U	410 U

Notes:

J = Detected, Estimated
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U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	10X
Benzo(a)anthracene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Benzo(a)pyrene	UG/KG 6.7 U	6.7 U	0.19 U	9.8	67 U
Benzo(b)fluoranthene	UG/KG 6.7 U	6.7 U	0.19 U	5.4 J	67 U
Benzo(g,h,i)perylene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Benzo(k)fluoranthene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Benzoic acid	UG/KG 670 R	660 R	24 U	650 U	6600 U
Benzyl alcohol	UG/KG 330 U	330 U	4.8 U	330 U	3300 U
Benzyl butyl phthalate	UG/KG 50 U	50 U	0.95 U	49 U	500 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	0.95 U	99 U	1000 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	0.95 U	99 U	1000 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	0.95 U	99 U	1000 U
bis(2-Ethylhexyl) Phthalate	UG/KG 50 U	50 U	1.9 U	26 J	500 U
Carbazole	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Chrysene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Cresols, m & p	UG/KG 400 U	400 U	1.9 U	400 U	4000 U

Notes:

J = Detected, Estimated
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U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:	240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	10X	2.5X	2.5X
Benzo(a)anthracene	UG/KG 6.6 U	17 U	66 U	17 U	32
Benzo(a)pyrene	UG/KG 6.6 U	17 U	66 U	28	39
Benzo(b)fluoranthene	UG/KG 5.7 J	17 U	66 U	12 J	43
Benzo(g,h,i)perylene	UG/KG 6.6 U	17 U	66 U	17 U	21
Benzo(k)fluoranthene	UG/KG 6.6 U	17 U	66 U	17 U	9.4 J
Benzoic acid	UG/KG 660 U	1700 U	6500 U	1700 U	1700 U
Benzyl alcohol	UG/KG 330 U	840 U	3300 U	830 U	830 U
Benzyl butyl phthalate	UG/KG 50 U	130 U	490 U	130 U	130 U
bis(2-Chloroethoxy) Methane	UG/KG 99 U	250 U	990 U	250 U	250 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 99 U	250 U	990 U	250 U	250 U
bis(2-Chloroisopropyl) Ether	UG/KG 99 U	250 U	990 U	250 U	250 U
bis(2-Ethylhexyl) Phthalate	UG/KG 25 J	49 J	490 U	130 U	50 J
Carbazole	UG/KG 50 U	130 U	490 U	130 U	130 U
Chrysene	UG/KG 6.6 U	17 U	66 U	17 U	29
Cresols, m & p	UG/KG 400 U	1000 U	3900 U	1000 U	1000 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	2.5X	1X	10X	10X	1X
Benzo(a)anthracene	UG/KG 17 U	0.19 U	130	67 U	7.4 UJ
Benzo(a)pyrene	UG/KG 17 U	0.19 U	170	67 U	7.4 UJ
Benzo(b)fluoranthene	UG/KG 17 U	0.19 U	190	67 U	4.4 J
Benzo(g,h,i)perylene	UG/KG 17 U	0.19 U	68	67 U	9.7 J
Benzo(k)fluoranthene	UG/KG 17 U	0.19 U	45 J	67 U	4.7 J
Benzoic acid	UG/KG 1700 U	24 U	6600 U	6600 U	
Benzyl alcohol	UG/KG 830 U	4.9 U	3300 U	3300 U	
Benzyl butyl phthalate	UG/KG 130 U	0.97 U	500 U	500 U	
bis(2-Chloroethoxy) Methane	UG/KG 250 U	0.97 U	1000 U	1000 U	
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 250 U	0.97 U	1000 U	1000 U	
bis(2-Chloroisopropyl) Ether	UG/KG 250 U	0.97 U	1000 U	1000 U	
bis(2-Ethylhexyl) Phthalate	UG/KG 130 U	1.9 U	500 U	500 U	
Carbazole	UG/KG 130 U	0.97 U	500 U	500 U	
Chrysene	UG/KG 17 U	0.19 U	140	67 U	7.4 UJ
Cresols, m & p	UG/KG 1000 U	1.9 U	4000 U	4000 U	

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	5X	1X	1X	2.5X	10X
Benzo(a)anthracene	UG/KG 1500	6.6 U	8.6	17 U	68 U
Benzo(a)pyrene	UG/KG 1300	19	17	17 U	68 U
Benzo(b)fluoranthene	UG/KG 2000	19	18	17 U	68 U
Benzo(g,h,i)perylene	UG/KG 600 J	10	7.3	17 U	68 U
Benzo(k)fluoranthene	UG/KG 660	9.7	5.7 J	17 U	68 U
Benzoic acid	UG/KG 3300 U	650 U	660 U	1600 U	6700 U
Benzyl alcohol	UG/KG 1600 U	330 U	330 U	820 U	3300 U
Benzyl butyl phthalate	UG/KG 250 U	49 U	50 U	120 U	510 U
bis(2-Chloroethoxy) Methane	UG/KG 500 U	98 U	100 U	250 U	1000 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 500 U	98 U	100 U	250 U	1000 U
bis(2-Chloroisopropyl) Ether	UG/KG 500 U	98 U	100 U	250 U	1000 U
bis(2-Ethylhexyl) Phthalate	UG/KG 250 U	49 U	50 U	120 U	510 U
Carbazole	UG/KG 490	49 U	50 U	120 U	510 U
Chrysene	UG/KG 1500	6.6 UJ	15 J	17 U	68 U
Cresols, m & p	UG/KG 2000 U	390 U	400 U	1000 U	4100 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	5X	2.5X
Benzo(a)anthracene	UG/KG 7.0	17 U	34 U	37	17 U
Benzo(a)pyrene	UG/KG 12	17 U	34 U	74	17 U
Benzo(b)fluoranthene	UG/KG 7.1	17 U	34 U	59	17 U
Benzo(g,h,i)perylene	UG/KG 6.6 U	17 U	34 U	30 J	17 U
Benzo(k)fluoranthene	UG/KG 6.6 U	17 U	34 U	22 J	17 U
Benzoic acid	UG/KG 660 U	1700 U	3300 U	3300 U	1700 U
Benzyl alcohol	UG/KG 330 U	830 U	1700 U	1700 U	830 U
Benzyl butyl phthalate	UG/KG 50 U	130 U	250 U	250 U	130 U
bis(2-Chloroethoxy) Methane	UG/KG 99 U	250 U	510 U	500 U	250 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 99 U	250 U	510 U	500 U	250 U
bis(2-Chloroisopropyl) Ether	UG/KG 99 U	250 U	510 U	500 U	250 U
bis(2-Ethylhexyl) Phthalate	UG/KG 29 J	55 J	250 U	250 U	48 J
Carbazole	UG/KG 50 U	130 U	250 U	250 U	130 U
Chrysene	UG/KG 7.1	17 U	34 U	49	17 U
Cresols, m & p	UG/KG 400 U	1000 U	2000 U	2000 U	1000 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	2.5X	1X	1X
Benzo(a)anthracene	UG/KG 34	6.7 U	17 U	110	26
Benzo(a)pyrene	UG/KG 34	9.7	17 U	88	30
Benzo(b)fluoranthene	UG/KG 33	6.7 U	17 U	100	27
Benzo(g,h,i)perylene	UG/KG 16	6.7 U	17 U	48	13
Benzo(k)fluoranthene	UG/KG 15	6.7 U	17 U	37	12
Benzoic acid	UG/KG 670 U	660 U	1700 U	660 U	660 U
Benzyl alcohol	UG/KG 330 U	330 U	840 U	330 U	330 U
Benzyl butyl phthalate	UG/KG 51 U	50 U	130 U	50 U	50 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	250 U	100 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	250 U	100 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	250 U	100 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 30 J	26 J	130 U	38 J	50 U
Carbazole	UG/KG 51 U	50 U	130 U	28 J	50 U
Chrysene	UG/KG 33	6.7 U	17 U	100	27
Cresols, m & p	UG/KG 410 U	400 U	1000 U	400 U	400 U

Notes:

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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	5X	5X	5X	1X
Benzo(a)anthracene	UG/KG 11	33 U	72	33 U	6.7 U
Benzo(a)pyrene	UG/KG 16	55	100	33 U	12
Benzo(b)fluoranthene	UG/KG 12	21 J	130	33 U	6.5 J
Benzo(g,h,i)perylene	UG/KG 7.9	33 U	59	33 U	6.7 U
Benzo(k)fluoranthene	UG/KG 10	33 U	26 J	33 U	6.7 U
Benzoic acid	UG/KG 670 U	3300 U	3300 U	3300 R	660 U
Benzyl alcohol	UG/KG 330 U	1700 U	1700 U	1600 U	330 U
Benzyl butyl phthalate	UG/KG 51 U	250 U	250 U	250 U	50 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	500 U	500 U	500 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	500 U	500 U	500 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	500 U	500 U	500 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 51 U	250 U	250 U	250 U	52 U
Carbazole	UG/KG 51 U	250 U	250 U	250 U	50 U
Chrysene	UG/KG 13	33 U	88	33 U	6.7 U
Cresols, m & p	UG/KG 410 U	2000 U	2000 U	2000 U	400 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	12/6/2012
Field QC:					
Analysis Information:	5X	1X	1X	5X	1X
Benzo(a)anthracene	UG/KG 96	16	6.0 J	240	6.7 U
Benzo(a)pyrene	UG/KG 100	20	11	220	6.7 U
Benzo(b)fluoranthene	UG/KG 100	19	4.7 J	280	6.7 U
Benzo(g,h,i)perylene	UG/KG 50	10	6.7 U	110	6.7 U
Benzo(k)fluoranthene	UG/KG 34	7.5	6.7 U	84	6.7 U
Benzoic acid	UG/KG 3300 U	660 U	670 U	3300 U	670 R
Benzyl alcohol	UG/KG 1700 U	330 U	330 U	1600 U	330 U
Benzyl butyl phthalate	UG/KG 250 U	50 U	50 U	250 U	50 U
bis(2-Chloroethoxy) Methane	UG/KG 500 U	99 U	100 U	500 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 500 U	99 U	100 U	500 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 500 U	99 U	100 U	500 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 250 U	50 U	50 U	250 U	50 U
Carbazole	UG/KG 250 U	50 U	50 U	250 U	50 U
Chrysene	UG/KG 87	17	5.0 J	210	6.7 U
Cresols, m & p	UG/KG 2000 U	400 U	400 U	2000 U	400 U

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Benzo(a)anthracene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Benzo(a)pyrene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Benzo(b)fluoranthene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Benzo(g,h,i)perylene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Benzo(k)fluoranthene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Benzoic acid	UG/KG 660 R	660 R	650 R	650 R	660 R
Benzyl alcohol	UG/KG 330 U	330 U	330 U	330 UJ	330 U
Benzyl butyl phthalate	UG/KG 50 U	50 U	50 U	50 UJ	50 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	99 U	99 UJ	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	99 U	99 UJ	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	99 U	99 UJ	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Carbazole	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Chrysene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Cresols, m & p	UG/KG 400 U	400 U	400 U	400 UJ	400 U

Notes:

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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	2.5X	10X	1X
Benzo(a)anthracene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Benzo(a)pyrene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Benzo(b)fluoranthene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Benzo(g,h,i)perylene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Benzo(k)fluoranthene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Benzoic acid	UG/KG 660 R	660 R	1700 U	6600 U	660 U
Benzyl alcohol	UG/KG 330 U	330 U	830 U	3300 U	330 U
Benzyl butyl phthalate	UG/KG 50 U	50 U	130 U	500 U	50 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	250 U	1000 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	250 U	1000 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	250 U	1000 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 50 U	50 U	130 U	500 U	50 U
Carbazole	UG/KG 50 U	50 U	130 U	500 U	50 U
Chrysene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Cresols, m & p	UG/KG 400 U	400 U	1000 U	4000 U	400 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	10X	2.5X	1X	5X	1X
Benzo(a)anthracene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Benzo(a)pyrene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Benzo(b)fluoranthene	UG/KG 67 U	16 U	4.2 J	33 U	6.8 U
Benzo(g,h,i)perylene	UG/KG 67 U	16 U	12	33 U	6.8 U
Benzo(k)fluoranthene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Benzoic acid	UG/KG 6600 U	1600 U	830 U	3300 U	670 U
Benzyl alcohol	UG/KG 3300 U	810 U	410 U	1700 U	330 U
Benzyl butyl phthalate	UG/KG 500 U	120 U	63 U	250 U	51 U
bis(2-Chloroethoxy) Methane	UG/KG 1000 U	250 U	130 U	500 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 1000 U	250 U	130 U	500 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 1000 U	250 U	130 U	500 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 500 U	47 J	29 J	250 U	26 J
Carbazole	UG/KG 500 U	120 U	63 U	250 U	51 U
Chrysene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Cresols, m & p	UG/KG 4000 U	990 U	500 U	2000 U	400 U

Notes:

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U = Compound was Not Detected
ID = Identification
QC = Quality Control

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012
Field QC:			
Analysis Information:	1X	1X	1X
Benzo(a)anthracene	UG/KG 6.7 U	6.7 U	6.8 U
Benzo(a)pyrene	UG/KG 6.7 U	6.7 U	6.8 U
Benzo(b)fluoranthene	UG/KG 6.7 U	4.2 J	4.2 J
Benzo(g,h,i)perylene	UG/KG 6.7 U	5.1 J	6.8 U
Benzo(k)fluoranthene	UG/KG 6.7 U	6.7 U	6.8 U
Benzoic acid	UG/KG 670 U	670 U	670 U
Benzyl alcohol	UG/KG 330 U	330 U	340 U
Benzyl butyl phthalate	UG/KG 51 U	50 U	51 U
bis(2-Chloroethoxy) Methane	UG/KG 100 U	100 U	100 U
bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	UG/KG 100 U	100 U	100 U
bis(2-Chloroisopropyl) Ether	UG/KG 100 U	100 U	100 U
bis(2-Ethylhexyl) Phthalate	UG/KG 24 J	35 J	27 J
Carbazole	UG/KG 51 U	50 U	51 U
Chrysene	UG/KG 6.7 U	6.7 U	6.8 U
Cresols, m & p	UG/KG 400 U	400 U	410 U

Notes:

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Dibenz(a,h)anthracene	UG/KG 6.6 U	6.6 U	38	0.19 U	0.19 U
Dibenzofuran	UG/KG 3.4 J	8.5 J	31 J	0.95 U	0.97 U
Diethyl Phthalate	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Dimethyl Phthalate	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Di-n-Butyl Phthalate	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Di-n-Octylphthalate	UG/KG 50 UJ	50 UJ	51 U	0.95 U	0.97 U
Fluoranthene	UG/KG 22 J	64 J	720	0.19 U	0.19 U
Fluorene	UG/KG 6.6 U	7.4	42	0.19 U	0.19 U
Hexachlorobenzene	UG/KG 6.6 U	6.6 U	6.8 U	0.19 U	0.19 U
Hexachlorobutadiene	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	330 U	9.5 U	9.7 U
Hexachloroethane	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 12	14	130	0.19 U	0.19 U
Isophorone	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Naphthalene	UG/KG 8.7	12	61	0.19 U	0.19 U

Notes:

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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:	076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:	240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:		Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:	20X	20X	1X	1X	1X
Dibenz(a,h)anthracene	UG/KG 130 U	130 U	6.7 U	6.6 U	6.7 U
Dibenzofuran	UG/KG 990 U	1000 U	4.2 J	5.7 J	17 J
Diethyl Phthalate	UG/KG 990 U	1000 U	50 U	49 U	51 U
Dimethyl Phthalate	UG/KG 990 U	1000 U	50 U	49 U	51 U
Di-n-Butyl Phthalate	UG/KG 990 U	1000 U	50 U	49 U	51 U
Di-n-Octylphthalate	UG/KG 990 UJ	1000 UJ	50 UJ	49 UJ	51 U
Fluoranthene	UG/KG 410	660	53	79	88
Fluorene	UG/KG 130 U	130 U	6.7 U	4.5 J	7.8
Hexachlorobenzene	UG/KG 130 U	130 U	6.7 U	6.6 U	6.7 U
Hexachlorobutadiene	UG/KG 990 U	1000 U	50 U	49 U	51 U
Hexachlorocyclopentadiene	UG/KG 6500 U	6600 U	330 U	330 U	330 U
Hexachloroethane	UG/KG 990 U	1000 U	50 U	49 U	51 UJ
Indeno(1,2,3-c,d)Pyrene	UG/KG 83 J	120 J	14	20	28
Isophorone	UG/KG 990 U	1000 U	50 U	49 U	51 U
Naphthalene	UG/KG 130 U	130 U	8.3	11	14

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	5X	1X	1X
Dibenz(a,h)anthracene	UG/KG 6.8 U	6.7 U	33 U	0.19 U	6.6 U
Dibenzofuran	UG/KG 14 J	33 J	250 U	0.95 U	50 U
Diethyl Phthalate	UG/KG 23 J	50 U	250 U	0.95 U	50 U
Dimethyl Phthalate	UG/KG 51 U	50 U	250 U	0.95 U	50 U
Di-n-Butyl Phthalate	UG/KG 51 U	21 J	250 U	0.95 U	50 U
Di-n-Octylphthalate	UG/KG 51 U	50 U	250 U	0.95 U	50 UJ
Fluoranthene	UG/KG 120	120	200	0.19 U	6.6 U
Fluorene	UG/KG 12	6.7	33 U	0.19 U	6.6 U
Hexachlorobenzene	UG/KG 6.8 U	6.7 U	33 U	0.19 U	6.6 U
Hexachlorobutadiene	UG/KG 51 U	50 U	250 U	0.95 U	50 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	1700 U	9.5 U	330 U
Hexachloroethane	UG/KG 51 UJ	50 UJ	250 U	0.95 U	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 33 J	30	38	0.19 U	6.6 U
Isophorone	UG/KG 18 J	20 J	250 U	0.95 U	50 U
Naphthalene	UG/KG 22	48	33 U	0.19 U	3.3 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	2.5X	10X
Dibenz(a,h)anthracene	UG/KG 6.6 U	81	34 U	17 U	68 U
Dibenzofuran	UG/KG 50 U	130	250 U	130 U	510 U
Diethyl Phthalate	UG/KG 50 U	130 U	250 U	130 U	510 U
Dimethyl Phthalate	UG/KG 50 U	130 U	250 U	130 U	510 U
Di-n-Butyl Phthalate	UG/KG 50 U	130 U	250 U	130 U	510 U
Di-n-Octylphthalate	UG/KG 50 UJ	130 U	250 U	130 U	510 U
Fluoranthene	UG/KG 6.6 U	1400	190	17 U	80
Fluorene	UG/KG 6.6 U	130	34 U	17 U	68 U
Hexachlorobenzene	UG/KG 6.6 U	17 U	34 U	17 U	68 U
Hexachlorobutadiene	UG/KG 50 U	130 U	250 U	130 U	510 U
Hexachlorocyclopentadiene	UG/KG 330 U	830 U	1700 U	830 U	3300 U
Hexachloroethane	UG/KG 50 U	130 U	250 U	130 U	510 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.6 U	210	66	17 U	68 U
Isophorone	UG/KG 50 U	130 U	250 U	130 U	510 U
Naphthalene	UG/KG 6.6 U	160	24 J	17 U	68 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	2.5X	5X	4X	1X	2.5X
Dibenz(a,h)anthracene	UG/KG 17 U	210	27 U	6.7 U	17 U
Dibenzofuran	UG/KG 120 U	390	200 U	7.1 J	120 U
Diethyl Phthalate	UG/KG 120 U	250 U	200 U	50 U	120 U
Dimethyl Phthalate	UG/KG 120 U	250 U	200 U	50 U	120 U
Di-n-Butyl Phthalate	UG/KG 120 U	250 U	200 U	50 U	120 U
Di-n-Octylphthalate	UG/KG 120 U	250 U	200 U	50 U	120 U
Fluoranthene	UG/KG 13 J	4100	34	38	17 U
Fluorene	UG/KG 17 U	270	27 U	4.6 J	17 U
Hexachlorobenzene	UG/KG 17 U	34 U	27 U	6.7 U	17 U
Hexachlorobutadiene	UG/KG 120 U	250 U	200 U	50 U	120 U
Hexachlorocyclopentadiene	UG/KG 820 U	1700 U	1300 U	330 U	820 U
Hexachloroethane	UG/KG 120 U	250 U	200 U	50 U	120 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 17 U	650	27 U	12	17 U
Isophorone	UG/KG 120 U	250 U	200 U	14 J	120 U
Naphthalene	UG/KG 9.7 J	750	16 J	16	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	10X	5X	5X	10X	1X
Dibenz(a,h)anthracene	UG/KG 330	33 U	33 U	520	6.7 U
Dibenzofuran	UG/KG 760	250 U	250 U	460 J	6.3 J
Diethyl Phthalate	UG/KG 500 U	250 U	250 U	510 U	51 U
Dimethyl Phthalate	UG/KG 500 U	250 U	250 U	510 U	51 U
Di-n-Butyl Phthalate	UG/KG 500 U	250 U	250 U	510 U	51 U
Di-n-Octylphthalate	UG/KG 500 U	250 U	250 U	510 U	51 U
Fluoranthene	UG/KG 7900	150	68	8800	53
Fluorene	UG/KG 810	33 U	33 U	570	6.2 J
Hexachlorobenzene	UG/KG 67 U	33 U	33 U	68 U	6.7 U
Hexachlorobutadiene	UG/KG 500 U	250 U	250 U	510 U	51 U
Hexachlorocyclopentadiene	UG/KG 3300 U	1600 U	1600 U	3300 U	330 U
Hexachloroethane	UG/KG 500 U	250 U	250 U	510 U	51 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 1200	53	49	1600	16
Isophorone	UG/KG 500 U	250 U	250 U	510 U	51 U
Naphthalene	UG/KG 630	30 J	33 U	330	10

Notes:

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	12.5X	1X	1X	1X
Dibenz(a,h)anthracene	UG/KG 19	720	6.6 U	6.7 U	6.6 U
Dibenzofuran	UG/KG 12 J	1000	49 U	50 U	50 U
Diethyl Phthalate	UG/KG 51 U	620 U	49 U	50 U	50 U
Dimethyl Phthalate	UG/KG 51 U	620 U	49 U	50 U	50 U
Di-n-Butyl Phthalate	UG/KG 51 U	620 U	49 U	50 U	50 U
Di-n-Octylphthalate	UG/KG 51 U	620 U	49 UJ	50 UJ	50 UJ
Fluoranthene	UG/KG 220	16000	6.6 U	6.7 U	6.6 U
Fluorene	UG/KG 11	1000	6.6 U	6.7 U	6.6 U
Hexachlorobenzene	UG/KG 6.8 U	83 U	6.6 U	6.7 U	6.6 U
Hexachlorobutadiene	UG/KG 51 U	620 U	49 U	50 U	50 U
Hexachlorocyclopentadiene	UG/KG 330 U	4100 U	330 U	330 U	330 U
Hexachloroethane	UG/KG 51 U	620 U	49 U	50 U	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 50	1900	6.6 U	6.7 U	6.6 U
Isophorone	UG/KG 14 J	620 U	49 U	50 U	50 U
Naphthalene	UG/KG 12	700	6.6 U	6.7 U	6.6 U

Notes:

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MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Dibenz(a,h)anthracene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Dibenzofuran	UG/KG 50 U	50 U	50 U	50 U	51 U
Diethyl Phthalate	UG/KG 50 U	50 U	50 U	50 U	51 U
Dimethyl Phthalate	UG/KG 50 U	50 U	50 U	50 U	51 U
Di-n-Butyl Phthalate	UG/KG 50 U	50 U	50 U	50 U	51 U
Di-n-Octylphthalate	UG/KG 50 UJ	50 UJ	50 UJ	50 UJ	51 UJ
Fluoranthene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Fluorene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Hexachlorobenzene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Hexachlorobutadiene	UG/KG 50 U	50 U	50 U	50 U	51 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	330 U	330 U	330 U
Hexachloroethane	UG/KG 50 U	50 U	50 U	50 U	51 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U
Isophorone	UG/KG 50 U	50 U	50 U	50 U	51 U
Naphthalene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	5.1 J

Notes:

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QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	10X
Dibenz(a,h)anthracene	UG/KG 6.7 U	UG/KG 6.7 U	0.19 U	6.6 U	67 U
Dibenzofuran	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Diethyl Phthalate	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Dimethyl Phthalate	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Di-n-Butyl Phthalate	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Di-n-Octylphthalate	UG/KG 50 UJ	50 UJ	0.95 U	49 U	500 U
Fluoranthene	UG/KG 6.7 U	6.7 U	0.19 U	6.2 J	38 J
Fluorene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Hexachlorobenzene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Hexachlorobutadiene	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	9.5 U	330 U	3300 U
Hexachloroethane	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.7 U	6.7 U	0.19 U	6.6 U	67 U
Isophorone	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Naphthalene	UG/KG 5.8 J	5.6 J	0.19 U	4.6 J	67 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:	240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	10X	2.5X	2.5X
Dibenz(a,h)anthracene	UG/KG 6.6 U	17 U	66 U	17 U	17 U
Dibenzofuran	UG/KG 50 U	130 U	490 U	130 U	130 U
Diethyl Phthalate	UG/KG 50 U	130 U	490 U	130 U	130 U
Dimethyl Phthalate	UG/KG 50 U	130 U	490 U	130 U	130 U
Di-n-Butyl Phthalate	UG/KG 50 U	130 U	490 U	130 U	130 U
Di-n-Octylphthalate	UG/KG 50 U	130 U	490 U	130 U	130 U
Fluoranthene	UG/KG 7.6	17 U	66 U	20	59
Fluorene	UG/KG 6.6 U	17 U	66 U	17 U	17 U
Hexachlorobenzene	UG/KG 6.6 U	17 U	66 U	17 U	17 U
Hexachlorobutadiene	UG/KG 50 U	130 U	490 U	130 U	130 U
Hexachlorocyclopentadiene	UG/KG 330 U	840 U	3300 U	830 U	830 U
Hexachloroethane	UG/KG 50 U	130 U	490 U	130 U	130 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.6 U	17 U	66 U	17 U	26
Isophorone	UG/KG 50 U	130 U	490 U	130 U	130 U
Naphthalene	UG/KG 16	17 U	66 U	17 U	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	2.5X	1X	10X	10X	1X
Dibenz(a,h)anthracene	UG/KG 17 U	0.19 U	67 U	67 U	7.4 UJ
Dibenzofuran	UG/KG 130 U	0.97 U	500 U	500 U	
Diethyl Phthalate	UG/KG 130 U	0.97 U	500 U	500 U	
Dimethyl Phthalate	UG/KG 130 U	0.97 U	500 U	500 U	
Di-n-Butyl Phthalate	UG/KG 130 U	0.97 U	500 U	500 U	
Di-n-Octylphthalate	UG/KG 130 U	0.97 U	500 U	500 U	
Fluoranthene	UG/KG 17 U	0.19 U	260	67 U	3.7 J
Fluorene	UG/KG 17 U	0.19 U	67 U	67 U	7.4 UJ
Hexachlorobenzene	UG/KG 17 U	0.19 U	67 U	67 U	
Hexachlorobutadiene	UG/KG 130 U	0.97 U	500 U	500 U	
Hexachlorocyclopentadiene	UG/KG 830 U	9.7 U	3300 U	3300 U	
Hexachloroethane	UG/KG 130 U	0.97 U	500 U	500 U	
Indeno(1,2,3-c,d)Pyrene	UG/KG 17 U	0.19 U	100	67 U	7.4 UJ
Isophorone	UG/KG 130 U	0.97 U	500 U	500 U	
Naphthalene	UG/KG 17 U	0.19 U	67 U	67 U	7.4 UJ

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	5X	1X	1X	2.5X	10X
Dibenz(a,h)anthracene	UG/KG 200	6.6 U	6.7 U	17 U	68 U
Dibenzofuran	UG/KG 330	7.0 J	5.6 J	120 U	510 U
Diethyl Phthalate	UG/KG 250 U	49 U	50 U	120 U	510 U
Dimethyl Phthalate	UG/KG 250 U	49 U	50 U	120 U	510 U
Di-n-Butyl Phthalate	UG/KG 250 U	16 J	19 J	120 U	510 U
Di-n-Octylphthalate	UG/KG 250 U	49 U	50 U	120 U	510 U
Fluoranthene	UG/KG 4100	28	21	17 U	68 U
Fluorene	UG/KG 340	4.7 J	4.0 J	17 U	68 U
Hexachlorobenzene	UG/KG 33 U	6.6 U	6.7 U	17 U	68 U
Hexachlorobutadiene	UG/KG 250 U	49 U	50 U	120 U	510 U
Hexachlorocyclopentadiene	UG/KG 1600 U	330 U	330 U	820 U	3300 U
Hexachloroethane	UG/KG 250 U	49 U	50 U	120 U	510 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 610	13	12	17 U	68 U
Isophorone	UG/KG 250 U	20 J	19 J	120 U	510 U
Naphthalene	UG/KG 350	20	17	17 U	68 U

Notes:

J = Detected, Estimated
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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	5X	2.5X
Dibenz(a,h)anthracene	UG/KG 6.6 U	17 U	34 U	34 U	17 U
Dibenzofuran	UG/KG 8.7 J	130 U	250 U	250 U	130 U
Diethyl Phthalate	UG/KG 50 U	130 U	250 U	250 U	130 U
Dimethyl Phthalate	UG/KG 50 U	130 U	250 U	250 U	130 U
Di-n-Butyl Phthalate	UG/KG 50 U	130 U	250 U	250 U	130 U
Di-n-Octylphthalate	UG/KG 50 U	130 U	250 U	250 U	130 U
Fluoranthene	UG/KG 24	17 U	34 U	63	17 U
Fluorene	UG/KG 8.9	17 U	34 U	34 U	17 U
Hexachlorobenzene	UG/KG 6.6 U	17 U	34 U	34 U	17 U
Hexachlorobutadiene	UG/KG 50 U	130 U	250 U	250 U	130 U
Hexachlorocyclopentadiene	UG/KG 330 U	830 U	1700 U	1700 U	830 U
Hexachloroethane	UG/KG 50 U	130 U	250 U	250 U	130 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.6 U	17 U	34 U	50	17 U
Isophorone	UG/KG 50 U	130 U	250 U	250 U	130 U
Naphthalene	UG/KG 13	17 U	34 U	26 J	17 U

Notes:

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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	2.5X	1X	1X
Dibenz(a,h)anthracene	UG/KG 6.8 U	6.7 U	17 U	24	6.7 U
Dibenzofuran	UG/KG 7.2 J	50 U	130 U	36 J	8.6 J
Diethyl Phthalate	UG/KG 51 U	50 U	130 U	50 U	50 U
Dimethyl Phthalate	UG/KG 51 U	50 U	130 U	50 U	50 U
Di-n-Butyl Phthalate	UG/KG 51 U	50 U	130 U	50 U	50 U
Di-n-Octylphthalate	UG/KG 51 U	50 U	130 U	50 U	50 U
Fluoranthene	UG/KG 91	6.0 J	17 U	290	64
Fluorene	UG/KG 9.8	6.7 U	17 U	46	7.1
Hexachlorobenzene	UG/KG 6.8 U	6.7 U	17 U	6.7 U	6.7 U
Hexachlorobutadiene	UG/KG 51 U	50 U	130 U	50 U	50 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	840 U	330 U	330 U
Hexachloroethane	UG/KG 51 U	50 U	130 U	50 U	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 19	6.7 U	17 U	44	18
Isophorone	UG/KG 51 U	50 U	130 U	50 U	50 U
Naphthalene	UG/KG 10	6.3 J	17 U	38	20

Notes:

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MG/L = Milligrams per Liter
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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	5X	5X	5X	1X
Dibenz(a,h)anthracene	UG/KG 6.8 U	33 U	34 U	33 U	6.7 U
Dibenzofuran	UG/KG 11 J	250 U	250 U	250 U	50 U
Diethyl Phthalate	UG/KG 51 U	250 U	250 U	250 U	50 U
Dimethyl Phthalate	UG/KG 51 U	250 U	250 U	250 U	50 U
Di-n-Butyl Phthalate	UG/KG 51 U	250 U	250 U	250 U	50 U
Di-n-Octylphthalate	UG/KG 51 U	250 U	250 U	250 U	50 U
Fluoranthene	UG/KG 23	56	190	33 U	11
Fluorene	UG/KG 6.8 U	59	34 U	33 U	6.7 U
Hexachlorobenzene	UG/KG 6.8 U	33 U	34 U	33 U	6.7 U
Hexachlorobutadiene	UG/KG 51 U	250 U	250 U	250 U	50 U
Hexachlorocyclopentadiene	UG/KG 330 U	1700 U	1700 U	1600 U	330 U
Hexachloroethane	UG/KG 51 U	250 U	250 U	250 U	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 10	33 U	70	33 U	6.7 U
Isophorone	UG/KG 51 U	250 U	250 U	250 U	50 U
Naphthalene	UG/KG 48	42	20 J	33 U	6.7 U

Notes:

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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	12/6/2012
Field QC:					
Analysis Information:	5X	1X	1X	5X	1X
Dibenz(a,h)anthracene	UG/KG 33 U	6.6 U	6.7 U	82	6.7 U
Dibenzofuran	UG/KG 25 J	50 U	50 U	29 J	50 U
Diethyl Phthalate	UG/KG 250 U	50 U	50 U	250 U	50 U
Dimethyl Phthalate	UG/KG 250 U	50 U	50 U	250 U	50 U
Di-n-Butyl Phthalate	UG/KG 250 U	50 U	50 U	250 U	50 U
Di-n-Octylphthalate	UG/KG 250 U	50 U	50 U	250 U	50 UJ
Fluoranthene	UG/KG 220	30	9.4	620	6.7 U
Fluorene	UG/KG 29 J	6.6 U	6.7 U	34	6.7 U
Hexachlorobenzene	UG/KG 33 U	6.6 U	6.7 U	33 U	6.7 U
Hexachlorobutadiene	UG/KG 250 U	50 U	50 U	250 U	50 U
Hexachlorocyclopentadiene	UG/KG 1700 U	330 U	330 U	1600 U	330 U
Hexachloroethane	UG/KG 250 U	50 U	50 U	250 U	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 73	14	6.7 U	120	6.7 U
Isophorone	UG/KG 250 U	50 U	14 J	250 U	50 U
Naphthalene	UG/KG 34	8.2	6.7 U	23 J	4.8 J

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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Dibenz(a,h)anthracene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Dibenzofuran	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Diethyl Phthalate	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Dimethyl Phthalate	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Di-n-Butyl Phthalate	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Di-n-Octylphthalate	UG/KG 50 UJ	50 UJ	50 UJ	50 UJ	50 UJ
Fluoranthene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Fluorene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Hexachlorobenzene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Hexachlorobutadiene	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	330 U	330 UJ	330 U
Hexachloroethane	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U
Isophorone	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Naphthalene	UG/KG 4.7 J	6.7 U	6.3 J	4.5 J	6.7 U

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Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	2.5X	10X	1X
Dibenz(a,h)anthracene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Dibenzofuran	UG/KG 50 U	50 U	130 U	500 U	50 U
Diethyl Phthalate	UG/KG 50 U	50 U	130 U	500 U	50 U
Dimethyl Phthalate	UG/KG 50 U	50 U	130 U	500 U	50 U
Di-n-Butyl Phthalate	UG/KG 50 U	50 U	130 U	500 U	50 U
Di-n-Octylphthalate	UG/KG 50 UJ	50 UJ	130 U	500 U	50 U
Fluoranthene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Fluorene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Hexachlorobenzene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Hexachlorobutadiene	UG/KG 50 U	50 U	130 U	500 U	50 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	830 U	3300 U	330 U
Hexachloroethane	UG/KG 50 U	50 U	130 U	500 U	50 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U
Isophorone	UG/KG 50 U	50 U	130 U	500 U	50 U
Naphthalene	UG/KG 6.7 U	5.4 J	17 U	67 U	6.6 U

Notes:

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Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	10X	2.5X	1X	5X	1X
Dibenz(a,h)anthracene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Dibenzofuran	UG/KG 500 U	120 U	63 U	250 U	51 U
Diethyl Phthalate	UG/KG 500 U	120 U	63 U	250 U	51 U
Dimethyl Phthalate	UG/KG 500 U	120 U	63 U	250 U	51 U
Di-n-Butyl Phthalate	UG/KG 500 U	120 U	63 U	250 U	51 U
Di-n-Octylphthalate	UG/KG 500 U	120 U	63 U	250 U	51 U
Fluoranthene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Fluorene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Hexachlorobenzene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Hexachlorobutadiene	UG/KG 500 U	120 U	63 U	250 U	51 U
Hexachlorocyclopentadiene	UG/KG 3300 U	810 U	410 U	1700 U	330 U
Hexachloroethane	UG/KG 500 U	120 U	63 U	250 U	51 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Isophorone	UG/KG 500 U	120 U	63 U	250 U	51 U
Naphthalene	UG/KG 67 U	16 U	8.4 U	33 U	3.8 J

Notes:

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MG/L = Milligrams per Liter
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UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012
Field QC:			
Analysis Information:	1X	1X	1X
Dibenz(a,h)anthracene	UG/KG 6.7 U	6.7 U	6.8 U
Dibenzofuran	UG/KG 51 U	50 U	51 U
Diethyl Phthalate	UG/KG 51 U	50 U	51 U
Dimethyl Phthalate	UG/KG 51 U	50 U	51 U
Di-n-Butyl Phthalate	UG/KG 51 U	50 U	51 U
Di-n-Octylphthalate	UG/KG 51 U	50 U	51 U
Fluoranthene	UG/KG 6.7 U	6.7 U	4.0 J
Fluorene	UG/KG 6.7 U	6.7 U	6.8 U
Hexachlorobenzene	UG/KG 6.7 U	6.7 U	6.8 U
Hexachlorobutadiene	UG/KG 51 U	50 U	51 U
Hexachlorocyclopentadiene	UG/KG 330 U	330 U	340 U
Hexachloroethane	UG/KG 51 U	50 U	51 U
Indeno(1,2,3-c,d)Pyrene	UG/KG 6.7 U	6.7 U	6.8 U
Isophorone	UG/KG 51 U	50 U	51 U
Naphthalene	UG/KG 5.1 J	10	6.2 J

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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW
Field Sample ID:	076SB-0110M-0001-SO	076SB-0111M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW
Lab Sample ID:	240-18544-29	240-18544-30	240-17317-18	240-17422-13	240-17422-14
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/6/2012	11/8/2012	11/8/2012
Field QC:		Field Duplicate			Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Nitrobenzene	UG/KG 99 U	100 U	100 U	0.95 U	0.97 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
n-Nitrosodiphenylamine	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Pentachlorophenol	UG/KG 150 U	150 U	150 U	4.8 U	4.9 U
Phenanthrene	UG/KG 6.6 U	60	430	0.19 U	0.19 U
Phenol	UG/KG 50 U	50 U	51 U	0.95 U	0.97 U
Pyrene	UG/KG 20 J	50 J	530	0.19 R	0.19 U

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Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-UST	76-U4-UST	76-U5-UST	76-U5-UST	76-U20-SD2
Field Sample ID:	076SB-0112M-0001-SO	076SB-0113M-0001-SO	076SB-0114M-0001-SO	076SB-0115M-0001-SO	076SD-00010-0001-SD
Lab Sample ID:	240-18544-31	240-18544-32	240-18544-33	240-18544-34	240-17317-20
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	11/6/2012
Field QC:		Field Duplicate		Field Duplicate	Field Duplicate
Analysis Information:	20X	20X	1X	1X	1X
Nitrobenzene	UG/KG 2000 U	2000 U	100 U	99 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 990 U	1000 U	50 U	49 U	51 U
n-Nitrosodiphenylamine	UG/KG 990 U	1000 U	50 U	49 U	51 U
Pentachlorophenol	UG/KG 3000 U	3000 U	150 U	150 U	150 U
Phenanthrene	UG/KG 280 J	470 J	34 J	52 J	51
Phenol	UG/KG 990 U	1000 U	50 U	49 U	51 U
Pyrene	UG/KG 330	510	44	67	69

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SD2	76-U20-SD3	76-U20-SD4	76-U20-SW2	76-102-BB-SB
Field Sample ID:	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD	076SW-0015-0001-SW	076SB-0090M-0001-SO
Lab Sample ID:	240-17317-19	240-17317-21	240-17317-22	240-17422-15	240-18544-7
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/6/2012	11/6/2012	11/8/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	5X	1X	1X
Nitrobenzene	UG/KG 100 U	100 U	500 U	0.95 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 51 U	50 U	250 U	0.95 U	50 U
n-Nitrosodiphenylamine	UG/KG 51 U	50 U	250 U	0.95 U	50 U
Pentachlorophenol	UG/KG 150 UJ	84 J	750 U	4.8 U	150 U
Phenanthrene	UG/KG 68	87	160	0.19 U	6.6 U
Phenol	UG/KG 51 U	49 J	250 U	0.95 U	50 U
Pyrene	UG/KG 100	83	150	0.19 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB	76-A2-DU1-SS	76-A3-DU1-SB	76-A3-DU1-SB	76-A3-DU1-SB
Field Sample ID:	076SB-0091M-0001-SO	076SS-0005M-0001-SO	076SB-0060M-0001-SO	076SB-0061M-0001-SO	076SB-0068M-0001-SO
Lab Sample ID:	240-18544-8	240-17317-3	240-17796-22	240-17796-23	240-17810-1
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/15/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	2.5X	10X
Nitrobenzene	UG/KG 100 U	250 U	510 U	250 U	1000 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	130 U	250 U	130 U	510 U
n-Nitrosodiphenylamine	UG/KG 50 U	130 UJ	250 UJ	130 U	510 U
Pentachlorophenol	UG/KG 150 U	380 U	760 U	380 U	1500 U
Phenanthrene	UG/KG 6.6 U	1200	100	17 U	68 U
Phenol	UG/KG 50 U	130 U	250 U	130 U	510 U
Pyrene	UG/KG 6.6 U	940	140	17 U	57 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB	76-A3-DU1-SS	76-BB-DU1-SS	76-U4-DU1-SB	76-U4-DU1-SB
Field Sample ID:	076SB-0069M-0001-SO	076SS-0006M-0001-SO	076SS-0019M-0001-SO	076SB-0023M-0001-SO	076SB-0024M-0001-SO
Lab Sample ID:	240-17810-2	240-17317-4	240-17422-1	240-17796-1	240-17796-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/6/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	2.5X	5X	4X	1X	2.5X
Nitrobenzene	UG/KG 250 U	510 U	400 U	100 U	250 U
n-Nitrosodi-n-propylamine	UG/KG 120 U	250 U	200 U	50 U	120 U
n-Nitrosodiphenylamine	UG/KG 120 U	250 UJ	200 U	50 UJ	120 U
Pentachlorophenol	UG/KG 370 U	760 U	610 U	150 U	370 U
Phenanthrene	UG/KG 27	3000	31	33	17 U
Phenol	UG/KG 120 U	250 U	200 U	50 U	120 U
Pyrene	UG/KG 9.9 J	3000	25 J	27	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SS	76-U4-DU2-SB	76-U4-DU2-SB	76-U4-DU2-SS	76-U5-DU1-SB
Field Sample ID:	076SS-0003M-0001-SO	076SB-0030M-0001-SO	076SB-0031M-0001-SO	076SS-0004M-0001-SO	076SB-0037M-0001-SO
Lab Sample ID:	240-17317-10	240-17768-17	240-17768-18	240-17317-9	240-17768-9
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/14/2012	11/14/2012	11/6/2012	11/14/2012
Field QC:					
Analysis Information:	10X	5X	5X	10X	1X
Nitrobenzene	UG/KG 1000 U	500 U	500 U	1000 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 500 U	250 U	250 U	510 U	51 U
n-Nitrosodiphenylamine	UG/KG 500 U	250 U	250 U	510 U	51 U
Pentachlorophenol	UG/KG 1500 U	750 U	740 U	1500 U	150 U
Phenanthrene	UG/KG 8000	110	81	6800	45
Phenol	UG/KG 500 U	250 U	250 U	510 U	51 U
Pyrene	UG/KG 5700	110	61	6300	38

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB	76-U5-DU1-SS	76-102-BB-SB1	76-102-BB-SB1	76-102-BB-SB2
Field Sample ID:	076SB-0038M-0001-SO	076SS-0001M-0001-SO	076SB-0092M-0001-SO	076SB-0093M-0001-SO	076SB-0094M-0001-SO
Lab Sample ID:	240-17768-10	240-17317-2	240-18544-10	240-18544-11	240-18544-12
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	12.5X	1X	1X	1X
Nitrobenzene	UG/KG 100 U	1200 U	99 U	100 U	99 U
n-Nitrosodi-n-propylamine	UG/KG 51 UJ	620 U	49 U	50 U	50 U
n-Nitrosodiphenylamine	UG/KG 51 U	620 UJ	49 U	50 U	50 U
Pentachlorophenol	UG/KG 150 U	1900 U	150 U	150 U	150 U
Phenanthrene	UG/KG 160	13000	5.1 J	3.5 J	6.6 U
Phenol	UG/KG 51 U	620 U	49 U	50 U	50 U
Pyrene	UG/KG 170	11000	6.6 U	6.7 U	6.6 U

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-BB-SB2	76-102-BB-SB3	76-102-BB-SB3	76-102-BB-SB4	76-102-BB-SB5
Field Sample ID:	076SB-0095M-0001-SO	076SB-0096M-0001-SO	076SB-0097M-0001-SO	076SB-0098M-0001-SO	076SB-0099M-0001-SO
Lab Sample ID:	240-18544-13	240-18544-14	240-18544-15	240-18544-16	240-18544-17
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X
Nitrobenzene	UG/KG 100 U	100 U	99 U	100 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	50 U	50 U	50 U	51 U
n-Nitrosodiphenylamine	UG/KG 50 U	50 U	50 U	50 U	51 U
Pentachlorophenol	UG/KG 150 U	150 U	150 U	150 U	150 U
Phenanthrene	UG/KG 3.6 J	6.7 U	6.6 U	6.6 U	6.8 U
Phenol	UG/KG 50 U	50 U	50 U	50 U	51 U
Pyrene	UG/KG 6.7 U	6.7 U	6.6 U	6.6 U	6.8 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2	76-A3-DU1-SB1	76-A3-DU1-SB1
Field Sample ID:	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER	076SB-0062M-0001-SO	076SB-0070M-0001-SO
Lab Sample ID:	240-18544-19	240-18544-20	240-18703-24	240-17796-24	240-17810-3
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/11/2012	11/15/2012	11/16/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	10X
Nitrobenzene	UG/KG 100 U	100 U	0.95 U	99 U	1000 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	50 U	0.95 U	49 U	500 U
n-Nitrosodiphenylamine	UG/KG 50 U	50 U	0.95 U	49 UJ	500 U
Pentachlorophenol	UG/KG 150 U	150 U	4.8 U	150 U	1500 U
Phenanthrene	UG/KG 6.7 U	6.7 U	0.19 U	5.1 J	67 U
Phenol	UG/KG 50 U	50 U	0.95 U	49 U	500 U
Pyrene	UG/KG 6.7 U	6.7 U	0.19 U	4.7 J	33 J

Notes:

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UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB2	76-A3-DU1-SB2	76-A3-DU1-SB3	76-A3-DU1-SB3	76-A3-DU1-SB4
Field Sample ID:	076SB-0063M-0001-SO	076SB-0071M-0001-SO	076SB-0064M-0001-SO	076SB-0072M-0001-SO	076SB-0065M-0001-SO
Lab Sample ID:	240-17796-25	240-17810-4	240-17796-26	240-17810-5	240-17796-27
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/16/2012	11/15/2012	11/16/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	10X	2.5X	2.5X
Nitrobenzene	UG/KG 99 U	250 U	990 U	250 U	250 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	130 U	490 U	130 U	130 U
n-Nitrosodiphenylamine	UG/KG 50 UJ	130 U	490 U	130 U	130 U
Pentachlorophenol	UG/KG 150 U	380 U	1500 U	380 U	380 U
Phenanthrene	UG/KG 7.4	8.5 J	66 U	17 U	34
Phenol	UG/KG 50 U	130 U	490 U	130 U	130 U
Pyrene	UG/KG 5.8 J	17 U	66 U	15 J	43

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB4	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A3-DU1-SB5	76-A6-UST-SB3
Field Sample ID:	076SB-0073M-0001-SO	076-0067-0001-ER	076SB-0066M-0001-SO	076SB-0074M-0001-SO	076SB-0078-0001-SO
Lab Sample ID:	240-17810-6	240-17796-20	240-17796-28	240-17810-7	240-18544-18
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/16/2012	11/15/2012	11/15/2012	11/16/2012	11/16/2012
Field QC:					
Analysis Information:	2.5X	1X	10X	10X	1X
Nitrobenzene	UG/KG 250 U	0.97 U	1000 U	1000 U	
n-Nitrosodi-n-propylamine	UG/KG 130 U	0.97 U	500 U	500 U	
n-Nitrosodiphenylamine	UG/KG 130 U	0.97 UJ	500 U	500 U	
Pentachlorophenol	UG/KG 380 U	4.9 U	1500 U	1500 U	
Phenanthrene	UG/KG 17 U	0.19 U	140	67 U	7.4 UJ
Phenol	UG/KG 130 U	0.97 U	500 U	500 U	
Pyrene	UG/KG 17 U	0.19 U	190	67 U	4.8 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-DDS-DU2-SS	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076SS-0002M-0001-SO	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17317-1	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/6/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	5X	1X	1X	2.5X	10X
Nitrobenzene	UG/KG 500 U	98 U	100 U	250 U	1000 U
n-Nitrosodi-n-propylamine	UG/KG 250 U	49 U	50 U	120 U	510 U
n-Nitrosodiphenylamine	UG/KG 250 UJ	49 U	50 U	120 U	510 U
Pentachlorophenol	UG/KG 740 U	150 U	150 U	370 U	1500 U
Phenanthrene	UG/KG 3700	22	16	17 U	68 U
Phenol	UG/KG 250 U	49 U	50 U	120 U	510 U
Pyrene	UG/KG 2800	19	15	17 U	68 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-U4-DU1-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0025M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-17796-4
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	2.5X	5X	5X	2.5X
Nitrobenzene	UG/KG 99 U	250 U	510 U	500 U	250 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	130 U	250 U	250 U	130 U
n-Nitrosodiphenylamine	UG/KG 50 UJ	130 U	250 UJ	250 UJ	130 U
Pentachlorophenol	UG/KG 150 U	380 U	760 U	760 U	380 U
Phenanthrene	UG/KG 39	17 U	34 U	39	17 U
Phenol	UG/KG 50 U	130 U	250 U	250 U	130 U
Pyrene	UG/KG 14	17 U	34 U	48	17 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU1-SB2	76-U4-DU1-SB3	76-U4-DU1-SB4	76-U4-DU1-SB5	76-U4-DU2-SB1
Field Sample ID:	076SB-0026M-0001-SO	076SB-0027M-0001-SO	076SB-0028M-0001-SO	076SB-0029M-0001-SO	076SB-0032M-0001-SO
Lab Sample ID:	240-17796-5	240-17796-6	240-17796-7	240-17796-8	240-17768-19
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/14/2012
Field QC:					
Analysis Information:	1X	1X	2.5X	1X	1X
Nitrobenzene	UG/KG 100 U	100 U	250 U	100 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 51 U	50 U	130 U	50 U	50 U
n-Nitrosodiphenylamine	UG/KG 51 UJ	50 UJ	130 U	50 UJ	50 U
Pentachlorophenol	UG/KG 150 U	150 U	380 U	150 U	150 U
Phenanthrene	UG/KG 78	8.1	17 U	330	56
Phenol	UG/KG 51 U	50 U	130 U	50 U	50 U
Pyrene	UG/KG 65	4.1 J	17 U	200	48

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U4-DU2-SB2	76-U4-DU2-SB3	76-U4-DU2-SB4	76-U4-DU2-SB5	76-U5-DU1-SB1
Field Sample ID:	076SB-0033M-0001-SO	076SB-0034M-0001-SO	076SB-0035M-0001-SO	076SB-0036M-0001-SO	076SB-0039M-0001-SO
Lab Sample ID:	240-17768-20	240-17768-21	240-17768-22	240-17768-23	240-17768-11
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Field QC:					
Analysis Information:	1X	5X	5X	5X	1X
Nitrobenzene	UG/KG 100 U	500 U	500 U	500 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 51 U	250 U	250 UJ	250 U	50 UJ
n-Nitrosodiphenylamine	UG/KG 51 U	250 U	250 U	250 U	50 U
Pentachlorophenol	UG/KG 150 U	750 U	750 U	750 U	150 U
Phenanthrene	UG/KG 23	200	120	33 U	6.7 U
Phenol	UG/KG 51 U	250 U	250 U	250 U	50 U
Pyrene	UG/KG 18	57	130	33 U	8.8

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-DU1-SB2	76-U5-DU1-SB3	76-U5-DU1-SB4	76-U5-DU1-SB5	76-102-PCA-SB1
Field Sample ID:	076SB-0040M-0001-SO	076SB-0041M-0001-SO	076SB-0042M-0001-SO	076SB-0043M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17768-12	240-17768-13	240-17768-14	240-17768-15	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/14/2012	11/14/2012	11/14/2012	11/14/2012	12/6/2012
Field QC:					
Analysis Information:	5X	1X	1X	5X	1X
Nitrobenzene	UG/KG 500 U	99 U	100 U	500 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 250 UJ	50 UJ	50 UJ	250 U	50 U
n-Nitrosodiphenylamine	UG/KG 250 U	50 U	50 U	250 U	50 U
Pentachlorophenol	UG/KG 750 U	150 U	150 U	750 U	150 U
Phenanthrene	UG/KG 230	17	7.5	470	6.7 U
Phenol	UG/KG 250 U	50 U	50 U	250 U	50 U
Pyrene	UG/KG 180	24	7.2	450	6.7 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X
Nitrobenzene	UG/KG 100 U	100 U	99 U	99 UJ	100 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	50 U	50 U	50 UJ	50 U
n-Nitrosodiphenylamine	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Pentachlorophenol	UG/KG 150 U	150 U	150 U	150 UJ	150 U
Phenanthrene	UG/KG 3.7 J	4.1 J	6.6 U	6.6 UJ	6.7 U
Phenol	UG/KG 50 U	50 U	50 U	50 UJ	50 U
Pyrene	UG/KG 6.6 U	6.7 U	6.6 U	6.6 UJ	6.7 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
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ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	2.5X	10X	1X
Nitrobenzene	UG/KG 100 U	100 U	250 U	1000 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 50 U	50 U	130 U	500 U	50 U
n-Nitrosodiphenylamine	UG/KG 50 U	50 U	130 U	500 U	50 U
Pentachlorophenol	UG/KG 150 U	150 U	380 U	1500 U	150 U
Phenanthrene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.7 U
Phenol	UG/KG 50 U	50 U	130 U	500 U	50 U
Pyrene	UG/KG 6.7 U	6.7 U	17 U	67 U	6.6 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	10X	2.5X	1X	5X	1X
Nitrobenzene	UG/KG 1000 U	250 U	130 U	500 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 500 U	120 U	63 U	250 U	51 U
n-Nitrosodiphenylamine	UG/KG 500 U	120 U	63 UJ	250 UJ	51 UJ
Pentachlorophenol	UG/KG 1500 U	370 U	190 U	750 U	150 U
Phenanthrene	UG/KG 67 U	16 U	8.4 U	33 U	6.8 U
Phenol	UG/KG 500 U	120 U	63 U	250 U	51 U
Pyrene	UG/KG 67 U	16 U	6.7 J	33 U	6.8 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012
Field QC:			
Analysis Information:	1X	1X	1X
Nitrobenzene	UG/KG 100 U	100 U	100 U
n-Nitrosodi-n-propylamine	UG/KG 51 U	50 U	51 U
n-Nitrosodiphenylamine	UG/KG 51 UJ	50 UJ	51 UJ
Pentachlorophenol	UG/KG 150 U	150 U	150 U
Phenanthrene	UG/KG 6.7 U	6.7 U	5.8 J
Phenol	UG/KG 51 U	50 U	51 U
Pyrene	UG/KG 5.6 J	5.8 J	4.8 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW	076SB-0112M-0001-SO
Lab Sample ID:	240-18544-29	240-17317-18	240-17796-17	240-17796-18	240-18544-31
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/8/2012	11/8/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC		Units				
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.20 U	0.21 U	0.25 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.51 U	0.52 U	0.25 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.51 U	0.52 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.51 U	0.52 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.66 U	0.67 U	0.50 U
NITROGUANIDINE	MG/KG	0.24 U	0.25 U	20 U	20 U	0.24 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-UST	76-U20-SD2	76-U20-SD2	76-U20-SD3	76-U20-SD4
Field Sample ID:	076SB-0114M-0001-SO	076SD-00010-0001-SD	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD
Lab Sample ID:	240-18544-33	240-17317-20	240-17317-19	240-17317-21	240-17317-22
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/6/2012	11/6/2012	11/6/2012
Field QC:		Field Duplicate			
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC		Units				
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.50 U	0.48 U	0.14 J
NITROGUANIDINE	MG/KG	0.25 U	0.25 U	0.89	0.25 U	0.24 U

Notes:

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TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SW2	76-102-BB-SB4	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2
Field Sample ID:	076SW-0015-0001-SW	076SB-0098M-0001-SO	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER
Lab Sample ID:	240-17796-19	240-18544-16	240-18544-19	240-18544-20	240-18703-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/8/2012	12/6/2012	12/6/2012	12/6/2012	12/11/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC		Units				
1,3,5-Trinitrobenzene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
1,3-Dinitrobenzene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
2,4,6-Trinitrotoluene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
2,4-Dinitrotoluene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
2,6-Dinitrotoluene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.21 U	0.25 U	0.25 U	0.25 U	0.20 U
2-Nitrotoluene	MG/KG	0.52 U	0.25 U	0.25 U	0.25 U	0.50 U
3-Nitrotoluene	MG/KG	0.52 U	0.25 U	0.25 U	0.25 U	0.50 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
4-Nitrotoluene	MG/KG	0.52 U	0.25 U	0.25 U	0.25 U	0.50 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
Nitrobenzene	MG/KG	0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
Nitroglycerin	MG/KG	0.67 U	0.50 U	0.50 U	0.50 U	0.65 U
NITROGUANIDINE	MG/KG	20 U	0.25 U	0.25 U	0.25 U	20 U

Notes:

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MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-DU1-SB5	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:	076-0067-0001-ER	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:	240-17796-20	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:			Field Duplicate		
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC

	Units					
1,3,5-Trinitrobenzene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.21 U	0.25 U	0.24 U	0.25 U	0.25 U
2-Nitrotoluene	MG/KG	0.51 U	0.25 U	0.24 U	0.25 U	0.25 U
3-Nitrotoluene	MG/KG	0.51 U	0.25 U	0.24 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
4-Nitrotoluene	MG/KG	0.51 U	0.25 U	0.24 U	0.25 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
Nitrobenzene	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
Nitroglycerin	MG/KG	0.67 U	0.50 U	0.48 U	0.50 U	0.50 U
NITROGUANIDINE	MG/KG	20 U	0.25 U	0.25 U	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-102-PCA-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC

	Units					
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
NITROGUANIDINE	MG/KG	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E Laboratory Analytical Results with Final Qualifiers Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:	076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:	240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:	Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC

	Units					
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
NITROGUANIDINE	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.24 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:	076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:	240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					Field Duplicate
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC		Units				
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
NITROGUANIDINE	MG/KG	0.24 U	0.25 U	0.25 U	0.036 J	0.24 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:	076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:	240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X

Nitroaromatics and Nitramines by HPLC

	Units					
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.49 U
NITROGUANIDINE	MG/KG	0.25 U	0.24 U	0.25 U	0.25 U	0.24 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E

Laboratory Analytical Results with Final Qualifiers

Chemistry Results

Ravenna Army Ammunition Plant

RVAAP, QAPP Oct. 2012

Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:	076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:	240-17796-14	240-17796-15	240-17796-16
Lab Name:	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012
Field QC:			
Analysis Information:	1X	1X	1X

Nitroaromatics and Nitramines by HPLC

	Units			
1,3,5-Trinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
2-Amino-4,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
4-Amino-2,6-dinitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	MG/KG	0.25 U	0.25 U	0.25 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	MG/KG	0.25 U	0.25 U	0.25 U
Nitrobenzene	MG/KG	0.25 U	0.25 U	0.25 U
Nitroglycerin	MG/KG	0.50 U	0.50 U	0.50 U
NITROGUANIDINE	MG/KG	0.25 U	0.24 U	0.24 U

Notes:

J = Detected, Estimated

UJ = Compound was not detected and reporting limit is estimated

U = Compound was Not Detected

ID = Identification

QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH

MG/KG = Milligrams per Kilogram

MG/L = Milligrams per Liter

UG/KG = Micrograms per Kilogram

UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-A3-UST	76-U20-SD	76-U20-SW	76-U20-SW	76-U4-UST
Field Sample ID:	076SB-0110M-0001-SO	076SD-0008-0001-SD	076SW-0013-0001-SW	076SW-0014-0001-SW	076SB-0112M-0001-SO
Lab Sample ID:	240-18544-29	240-17317-18	240-17796-17	240-17796-18	240-18544-31
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/8/2012	11/8/2012	12/6/2012
Field QC:				Field Duplicate	
Analysis Information:	1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG 0.25 U	0.25 U	0.10 U	0.10 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG 0.50 U	0.50 U	0.66 U	0.67 U	0.50 U
Tetryl	MG/KG 0.25 U	0.034 J	0.10 U	0.10 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U5-UST	76-U20-SD2	76-U20-SD2	76-U20-SD3	76-U20-SD4
Field Sample ID:	076SB-0114M-0001-SO	076SD-00010-0001-SD	076SD-0009-0001-SD	076SD-0011-0001-SD	076SD-0012-0001-SD
Lab Sample ID:	240-18544-33	240-17317-20	240-17317-19	240-17317-21	240-17317-22
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	12/6/2012	11/6/2012	11/6/2012	11/6/2012	11/6/2012
Field QC:		Field Duplicate			
Analysis Information:	1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG 0.25 U	0.25 U	0.25 U	0.24 U	0.24 U
Pentaerythritol Tetranitrate	MG/KG 0.50 U	0.50 U	0.50 U	0.48 U	0.49 U
Tetryl	MG/KG 0.25 U	0.25 U	0.35 J	0.052 J	0.037 J

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U20-SW2	76-102-BB-SB4	76-102-PCA-SB	76-102-PCA-SB	76-A1-UST-SB2
Field Sample ID:	076SW-0015-0001-SW	076SB-0098M-0001-SO	076SB-0100M-0001-SO	076SB-0101M-0001-SO	076-0140-0001-ER
Lab Sample ID:	240-17796-19	240-18544-16	240-18544-19	240-18544-20	240-18703-24
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/8/2012	12/6/2012	12/6/2012	12/6/2012	12/11/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG 0.10 U	0.25 U	0.25 U	0.25 U	0.10 U
Pentaerythritol Tetranitrate	MG/KG 0.67 U	0.50 U	0.50 U	0.50 U	0.65 U
Tetryl	MG/KG 0.10 U	0.25 U	0.25 U	0.25 U	0.10 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E **Laboratory Analytical Results with Final Qualifiers** **Chemistry Results**

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-A3-DU1-SB5	76-PCA-DU2-SS	76-PCA-DU2-SS	76-U10-DU1-SB	76-U10-DU1-SB
Field Sample ID:		076-0067-0001-ER	076SS-0020M-0001-SO	076SS-0021M-0001-SO	076SB-0044M-0001-SO	076SB-0045M-0001-SO
Lab Sample ID:		240-17796-20	240-17422-2	240-17422-3	240-17796-29	240-17796-30
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/15/2012	11/7/2012	11/7/2012	11/15/2012	11/15/2012
Field QC:				Field Duplicate		
Analysis Information:		1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG	0.10 U	0.25 U	0.24 U	0.25 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG	0.67 U	0.50 U	0.48 U	0.50 U	0.50 U
Tetryl	MG/KG	0.10 U	0.041 J	0.030 J	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:	76-U10-DU1-SS	76-U20-DU1-SB	76-U20-DU1-SB	76-U20-DU1-SS	76-102-PCA-SB1
Field Sample ID:	076SS-0022M-0001-SO	076SB-0053M-0001-SO	076SB-0054M-0001-SO	076SS-0007M-0001-SO	076SB-0102M-0001-SO
Lab Sample ID:	240-17796-2	240-17796-9	240-17796-11	240-17796-10	240-18544-21
Lab Name:	TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:	11/15/2012	11/15/2012	11/15/2012	11/15/2012	12/6/2012
Field QC:					
Analysis Information:	1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG 0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG 0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetryl	MG/KG 0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-102-PCA-SB1	76-102-PCA-SB2	76-102-PCA-SB2	76-102-PCA-SB3	76-102-PCA-SB3
Field Sample ID:		076SB-0103M-0001-SO	076SB-0104M-0001-SO	076SB-0105M-0001-SO	076SB-0106M-0001-SO	076SB-0107M-0001-SO
Lab Sample ID:		240-18544-22	240-18544-23	240-18544-24	240-18544-25	240-18544-26
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		12/6/2012	12/6/2012	12/6/2012	12/6/2012	12/6/2012
Field QC:		Field Duplicate		Field Duplicate		Field Duplicate
Analysis Information:		1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetryl	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



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Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-102-PCA-SB4	76-102-PCA-SB5	76-U10-DU1-SB1	76-U10-DU1-SB1	76-U10-DU1-SB2
Field Sample ID:		076SB-0108M-0001-SO	076SB-0109M-0001-SO	076SB-0046M-0001-SO	076SB-0047M-0001-SO	076SB-0048M-0001-SO
Lab Sample ID:		240-18544-27	240-18544-28	240-17796-31	240-17796-32	240-17796-33
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		12/6/2012	12/6/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:						Field Duplicate
Analysis Information:		1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetryl	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U10-DU1-SB3	76-U10-DU1-SB4	76-U10-DU1-SB5	76-U20-DU1-SB1	76-U20-DU1-SB2
Field Sample ID:		076SB-0049M-0001-SO	076SB-0050M-0001-SO	076SB-0051M-0001-SO	076SB-0055M-0001-SO	076SB-0056M-0001-SO
Lab Sample ID:		240-17796-34	240-17796-35	240-17796-36	240-17796-12	240-17796-13
Lab Name:		TAM0	TAM0	TAM0	TAM0	TAM0
Sample Date:		11/15/2012	11/15/2012	11/15/2012	11/15/2012	11/15/2012
Field QC:						
Analysis Information:		1X	1X	1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG	0.50 U	0.50 U	0.50 U	0.50 U	0.49 U
Tetryl	MG/KG	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter



Appendix E
Laboratory Analytical Results with Final Qualifiers
Chemistry Results

Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012
Fall 2012 SI/RI Sampling Sampling Event

Site Name: Site 76

Location ID:		76-U20-DU1-SB3	76-U20-DU1-SB4	76-U20-DU1-SB5
Field Sample ID:		076SB-0057M-0001-SO	076SB-0058M-0001-SO	076SB-0059M-0001-SO
Lab Sample ID:		240-17796-14	240-17796-15	240-17796-16
Lab Name:		TAM0	TAM0	TAM0
Sample Date:		11/15/2012	11/15/2012	11/15/2012
Field QC:				
Analysis Information:		1X	1X	1X
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	MG/KG	0.25 U	0.25 U	0.25 U
Pentaerythritol Tetranitrate	MG/KG	0.50 U	0.50 U	0.50 U
Tetryl	MG/KG	0.25 U	0.25 U	0.25 U

Notes:

J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected
ID = Identification
QC = Quality Control

TAM0 = TestAmerica, Inc., North Canton, OH
MG/KG = Milligrams per Kilogram
MG/L = Milligrams per Liter
UG/KG = Micrograms per Kilogram
UG/L = Micrograms per Liter