Appendix S

Sample Location Survey Data

C-Block Quarry
Load Line 12
Building 1200
Landfill North of Winklepeck Burning Grounds
Pistol Range
NACA Test Area
Load Line 5
Load Line 7
Load Line 8
Load Line 10
Wet Storage
Buildings F-15/F-16
Anchor Test Area
Atlas Scrap Yard

SAMPLE LOCATION SURVEY DATA
RI-14
RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-06 C Block Quarry	CBLmw-001-DUP	2343659.08	559405.12	OH83NFT
RVAAP-06 C Block Quarry	CBLmw-001-GW	2343659.08	559405.12	OH83NFT
RVAAP-06 C Block Quarry	CBLmw-002-GW	2343843.22	559046.48	OH83NFT
RVAAP-06 C Block Quarry	CBLmw-003-GW	2343967.67	559697.13	OH83NFT
RVAAP-06 C Block Quarry	CBLmw-004-GW	2343687.21	559950	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-001M-SD	2343750.45	561031.64	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-002D-DUP	2343856.01	560955.42	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-002D-SD	2343856.01	560955.42	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-002M-SD	2343853.69	560954.94	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-003M-SD	2344054.27	560468.23	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-004M-DUP	2344325.65	560316.32	OH83NFT
RVAAP-06 C Block Quarry	CBLsd-004M-SD	2344325.65	560316.32	OH83NFT
RVAAP-06 C Block Quarry	CBLss-001M-SO	2343729.56	559676.78	OH83NFT
RVAAP-06 C Block Quarry	CBLss-002M-SO	2343783.07	559529.95	OH83NFT
RVAAP-06 C Block Quarry	CBLss-003M-DUP	2343862.66	559403.71	OH83NFT
RVAAP-06 C Block Quarry	CBLss-003M-SO	2343862.66	559403.71	OH83NFT
RVAAP-06 C Block Quarry	CBLss-004M-SO	2343787.19	559376.27	OH83NFT
RVAAP-06 C Block Quarry	CBLss-005D-SO	2343841.80	559347.48	OH83NFT
RVAAP-06 C Block Quarry	CBLss-005M-SO	2343831.10	559399.59	OH83NFT
RVAAP-06 C Block Quarry	CBLss-006M-SO	2343707.60	559571.12	OH83NFT
RVAAP-06 C Block Quarry	CBLsw-001-SW	2343750.45	561031.64	OH83NFT
RVAAP-06 C Block Quarry	CBLsw-002-DUP	2343853.69	560954.94	OH83NFT
RVAAP-06 C Block Quarry	CBLsw-002-SW	2343853.69	560954.94	OH83NFT
RVAAP-06 C Block Quarry	CBLsw-003-SW	2344054.27	560468.23	OH83NFT
RVAAP-06 C Block Quarry	CBLsw-004M-SW	2344325.65	560316.32	OH83NFT
RVAAP-06 C Block Quarry	CBLsw-004-SW	2344325.65	560316.32	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-12 Load Line 12	L12mw-088-GW	2368667.10	556393.61	OH83NFT
RVAAP-12 Load Line 12	L12mw-107-GW	2368595.04	556758.73	OH83NFT
RVAAP-12 Load Line 12	L12mw-113-GW	2368224.40	558345.62	OH83NFT
RVAAP-12 Load Line 12	L12mw-128-GW	2368292.51	557371.31	OH83NFT
RVAAP-12 Load Line 12	L12mw-153-GW	2368138.57	557823.69	OH83NFT
RVAAP-12 Load Line 12	L12mw-154-GW	2368184.17	557753.98	OH83NFT
RVAAP-12 Load Line 12	L12mw-183-GW	2369224.99	556067.67	OH83NFT
RVAAP-12 Load Line 12	L12mw-185-GW	2368830.45	556947.16	OH83NFT
RVAAP-12 Load Line 12	L12mw-186-GW	2367911.63	559065.62	OH83NFT
RVAAP-12 Load Line 12	L12mw-188-GW	2367909.04	558131.81	OH83NFT
RVAAP-12 Load Line 12	L12mw-189-GW	2367946.67	558569	OH83NFT
RVAAP-12 Load Line 12	L12mw-242-DUP	2368543.29	558022.51	OH83NFT
RVAAP-12 Load Line 12	L12mw-242-GW	2368543.29	558022.51	OH83NFT
RVAAP-12 Load Line 12	L12mw-243-GW	2368192.04	557374.32	OH83NFT
RVAAP-12 Load Line 12	L12mw-244-GW	2368753.42	557380.17	OH83NFT
RVAAP-12 Load Line 12	L12mw-245-GW	2368368.74	557042.55	OH83NFT
RVAAP-12 Load Line 12	L12mw-246-GW	2369434.17	556660.89	OH83NFT
RVAAP-12 Load Line 12	L12mw-182-DUP	2368853.04	555891.02	OH83NFT
RVAAP-12 Load Line 12	L12mw-182-GW	2368853.04	555891.02	OH83NFT
RVAAP-12 Load Line 12	L12mw-182-GW-DUP	2368853.04	555891.02	OH83NFT
RVAAP-12 Load Line 12	L12mw-184-GW	2368998.15	556399.95	OH83NFT
RVAAP-12 Load Line 12	L12mw-187-GW	2368524.71	557633.55	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-13 Building 1200	B12mw-010-GW	2371293.16	565828.9	OH83NFT
RVAAP-13 Building 1200	B12mw-011-DUP	2371415.07	565690.15	OH83NFT
RVAAP-13 Building 1200	B12mw-011-GW	2371415.07	565690.15	OH83NFT
RVAAP-13 Building 1200	B12mw-012-GW	2371429.64	565824.62	OH83NFT
RVAAP-13 Building 1200	B12sd-023M-DUP	2371977.19	565916.82	OH83NFT
RVAAP-13 Building 1200	B12sd-023M-SD	2371977.19	565916.82	OH83NFT
RVAAP-13 Building 1200	B12sd-024D-SD	2371746.21	565916.10	OH83NFT
RVAAP-13 Building 1200	B12sd-024M-SD	2371748.45	565916.23	OH83NFT
RVAAP-13 Building 1200	B12ss-013M-DUP	2371326.95	565682.19	OH83NFT
RVAAP-13 Building 1200	B12ss-013M-SO	2371326.95	565682.19	OH83NFT
RVAAP-13 Building 1200	B12ss-014M-SO	23713328.14	565719.92	OH83NFT
RVAAP-13 Building 1200	B12ss-015D-SO	2371354.65	565795.89	OH83NFT
RVAAP-13 Building 1200	B12ss-015M-SO	2371352.88	565803.04	OH83NFT
RVAAP-13 Building 1200	B12ss-016M-SO	2371383.53	565745.27	OH83NFT
RVAAP-13 Building 1200	B12ss-017M-SO	2371360.54	565756.47	OH83NFT
RVAAP-13 Building 1200	B12ss-018M-SO	2371354.65	565738.19	OH83NFT
RVAAP-13 Building 1200	B12ss-019M-SO	2371381.18	565775.33	OH83NFT
RVAAP-13 Building 1200	B12ss-020M-SO	2371427.75	565780.64	OH83NFT
RVAAP-13 Building 1200	B12ss-021M-SO	2371400.63	5665726.40	OH83NFT
RVAAP-13 Building 1200	B12ss-022M-SO	2372044.39	565760.60	OH83NFT
RVAAP-13 Building 1200	B12sw-025-DUP	2371748.45	565916.23	OH83NFT
RVAAP-13 Building 1200	B12sw-025-SW	2371748.45	565916.23	OH83NFT
RVAAP-13 Building 1200	B12sw-026-SW	2371977.19	565916.82	OH83NFT
RVAAP-13 Building 1200	BKGmw-010-GW	2371371.62	565540.14	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWmw-024-GW	2358401.21	564827.89	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWmw-025-GW	2358420.06	565069.92	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWmw-026-DUP	2358954.24	564656.16	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWmw-026-GW	2358954.24	564656.16	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWmw-027-GW	2358626.75	564519.41	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-053-SO	2358496.77	565032.33	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-054-SO	2358468.95	564996.75	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-055-SO	2358495.21	564929.29	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-056-DUP	2358503.97	564897.08	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-056-SO	2358503.97	564897.08	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-057-SO	2358543.07	564908.47	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-058-SO	2358562.85	564868.84	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-059-SO	2358590.02	564825.61	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-060-SO	2358603.95	564754.88	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-061-SO	2358577.78	564745.52	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-062-SO	2358623.20	564698.38	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-063-SO	2358654.31	564672.45	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-064-DUP	2358715.80	564578.27	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-064-SO	2358715.80	564578.27	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-065-SO	2358643.92	564624.66	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-066-SO	2358826.48	564579.35	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-067-SO	2358855.31	564565.60	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-068-SO	2358900.03	564624.18	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsb-069-SO	2358889.62	564701.04	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-043M-SD	2348643.48	565171.83	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-044D-SD	2358890.20	564921.62	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-044M-SD	2358746.68	565075.08	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-044-SD	2358746.68	565075.08	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-045M-DUP	2358871.39	564928.87	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-045M-SD	2358871.39	564928.87	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsd-046M-SD	2358940.19	564174.20	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-028M-DUP	2358318.81	565173.98	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-028M-SO	2358318.81	565173.98	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-029M-SO	2358370.42	565053.58	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-030M-SO	2358432.77	564918.12	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-031M-QA	2358594.02	564795.57	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-031M-SO	2358594.02	564795.57	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-032M-SO	2358615.53	564673.01	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-033M-SO	2358588.29	564551.18	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-034D-SO	2358804.68	564560.79	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-034M-SO	2358760.30	564548.31	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-035M-SO	2358556.76	564419.30	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-036M-SO	2358596.89	564313.23	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-037M-DUP	2358510.89	565150.33	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-037M-SO	2358510.89	565150.33	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-038M-SO	2358731.63	564883.72	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-039D-SO	2359020.76	564834.89	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-039M-SO	2359057.60	564867.77	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-040M-SO	2357929.98	563328.84	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-041M-SO	2357964.51	563286.57	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWss-042M-SO	2358116.71	564931.02	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-047-SW	2358398.36	565362.42	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-048-SW	2358643.48	565171.83	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-049-SW	2358746.68	565075.08	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-050-SW	2358871.39	564928.87	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-051-SW	2358940.19	564174.20	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-052-DUP	2358983.19	564679.46	OH83NFT
RVAAP-19 Landfill North of Winklepeck Burning Grounds	LNWsw-052-SW	2358983.19	564679.46	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-36 Pistol Range	PIR-001-WD	NA	NA	OH83NFT
RVAAP-36 Pistol Range	PIRsd-001D-DUP	2357396.96	56384.77	OH83NFT
RVAAP-36 Pistol Range	PIRsd-001D-SD	2357396.96	56384.77	OH83NFT
RVAAP-36 Pistol Range	PIRsd-001M-DUP	2357403.73	563848.01	OH83NFT
RVAAP-36 Pistol Range	PIRsd-001M-SD	2357403.73	563848.01	OH83NFT
RVAAP-36 Pistol Range	PIRsd-002M-SD	2357551.92	563839.64	OH83NFT
RVAAP-36 Pistol Range	PIRss-001M-SO	2357411.20	563735.97	OH83NFT
RVAAP-36 Pistol Range	PIRss-002M-SO	2357417.47	563887.45	OH83NFT
RVAAP-36 Pistol Range	PIRss-003D-SO	2357415.08	563921.95	OH83NFT
RVAAP-36 Pistol Range	PIRss-003M-SO	2357410.30	563925.09	OH83NFT
RVAAP-36 Pistol Range	PIRss-004M-SO	2357404.92	563967.22	OH83NFT
RVAAP-36 Pistol Range	PIRss-005M-DUP	2357398.65	563998.59	OH83NFT
RVAAP-36 Pistol Range	PIRss-005M-SO	2357398.65	563998.59	OH83NFT
RVAAP-36 Pistol Range	PIRss-006M-SO	2357393.27	564017.41	OH83NFT
RVAAP-36 Pistol Range	PIRsw-001-SW	2357452.68	563852.14	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-38 NACA Test Area	NTAmw-107-GW	2345432.73	551699.09	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-108-GW	2345782.17	551917.92	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-109-GW	2345996.99	551291.19	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-110-GW	2346436.82	551350.8	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-111-GW	2346640.16	551538.99	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-112-GW	2346889.01	551708.76	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-113-GW	2347081.15	551487.86	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-114-DUP	2347302.8	551590.76	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-114-GW	2347302.8	551590.76	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-115-GW	2347582.94	551793.39	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-116-DUP	2348196.78	551749.39	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-116-GW	2348196.78	551749.39	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-117-GW	2347994.79	551586.36	OH83NFT
RVAAP-38 NACA Test Area	NTAmw-118-GW	2347608.09	551333.89	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-39 Load Line 5	LL5mw-001-GW	2354627.07	554321.25	OH83NFT
RVAAP-39 Load Line 5	LL5mw-002-GW	2354573.52	554606	OH83NFT
RVAAP-39 Load Line 5	LL5mw-003-GW	2354962.47	554533.41	OH83NFT
RVAAP-39 Load Line 5	LL5mw-004-DUP	2355008.44	554071.73	OH83NFT
RVAAP-39 Load Line 5	LL5mw-004-GW	2355008.44	554071.73	OH83NFT
RVAAP-39 Load Line 5	LL5mw-005-GW	2354424.02	554154.73	OH83NFT
RVAAP-39 Load Line 5	LL5mw-006-GW	2354730	553981.82	OH83NFT
RVAAP-39 Load Line 5	LL5sd-002-DUP	2354606.15	554679.59	OH83NFT
RVAAP-39 Load Line 5	LL5sd-002-SD	2354606.15	554679.59	OH83NFT
RVAAP-39 Load Line 5	LL5sd-013-SD	2354394.20	554031.29	OH83NFT
RVAAP-39 Load Line 5	LL5ss-001M-SO	2354765.97	554401.15	OH83NFT
RVAAP-39 Load Line 5	LL5ss-002M-DUP	2354608.07	554401.15	OH83NFT
RVAAP-39 Load Line 5	LL5ss-002M-SO	2354608.07	554401.15	OH83NFT
RVAAP-39 Load Line 5	LL5ss-003M-SO	2354686.40	554321.58	OH83NFT
RVAAP-39 Load Line 5	LL5ss-004M-SO	2354569.53	554289.25	OH83NFT
RVAAP-39 Load Line 5	LL5ss-005D-SO	2354533.13	554220.74	OH83NFT
RVAAP-39 Load Line 5	LL5ss-005M-SO	2354513.59	554233.30	OH83NFT
RVAAP-39 Load Line 5	LL5ss-006M-SO	2354494.94	554128.87	OH83NFT
RVAAP-39 Load Line 5	LL5ss-007M-SO	2354409.15	554041.84	OH83NFT
RVAAP-39 Load Line 5	LL5ss-008M-SO	2354529.75	553977.19	OH83NFT
RVAAP-39 Load Line 5	LL5ss-009M-SO	2354619.26	554145.03	OH83NFT
RVAAP-39 Load Line 5	LL5ss-010M-DUP	2354666.51	554097.79	OH83NFT
RVAAP-39 Load Line 5	LL5ss-010M-SO	2354666.51	554097.79	OH83NFT
RVAAP-39 Load Line 5	LL5ss-011M-SO	2354761.00	554229.57	OH83NFT
RVAAP-39 Load Line 5	LL5ss-012D-SO	2354729.94	554032.55	OH83NFT
RVAAP-39 Load Line 5	LL5ss-012M-SO	2354754.78	554074.16	OH83NFT
RVAAP-39 Load Line 5	LL5ss-013M-SO	2354804.51	553953.57	OH83NFT
RVAAP-39 Load Line 5	LL5ss-014M-SO	2354853.00	554151.25	OH83NFT
RVAAP-39 Load Line 5	LL5ss-015M-SO	2354928.84	554069.19	OH83NFT
RVAAP-39 Load Line 5	LL5ss-016M-QA	2355024.57	554275.57	OH83NFT
RVAAP-39 Load Line 5	LL5ss-016M-SO	2355024.57	554275.57	OH83NFT
RVAAP-39 Load Line 5	LL5ss-017M-SO	2355080.52	554208.44	OH83NFT
RVAAP-39 Load Line 5	LL5ss-018D-SO	2354830.90	554742.50	OH83NFT
RVAAP-39 Load Line 5	LL5ss-018M-SO	2354830.90	554742.50	OH83NFT
RVAAP-39 Load Line 5	LL5ss-019M-SO	2354872.75	554531.16	OH83NFT
RVAAP-39 Load Line 5	LL5ss-020M-DUP	2355098.17	554314.57	OH83NFT
RVAAP-39 Load Line 5	LL5ss-020M-SO	2355098.17	554314.57	OH83NFT
RVAAP-39 Load Line 5	LL5ss-021M-DUP	2355310.73	554083.87	OH83NFT
RVAAP-39 Load Line 5	LL5ss-021M-SO	2355310.73	554083.87	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-39 Load Line 5	LL5ss-022M-SO	2354631.97	554574.52	OH83NFT
RVAAP-39 Load Line 5	LL5ss-023M-SO	2355135.92	554161.19	OH83NFT
RVAAP-39 Load Line 5	LL5ss-024M-SO	2354594.40	554368.96	OH83NFT
RVAAP-39 Load Line 5	LL5ss-025M-SO	2354499.36	554357.91	OH83NFT
RVAAP-39 Load Line 5	LL5ss-026M-QA	2354941.41	554083.83	OH83NFT
RVAAP-39 Load Line 5	LL5ss-026M-SO	2354941.41	554083.83	OH83NFT
RVAAP-39 Load Line 5	LL5ss-027M-SO	2354837.53	554050.68	OH83NFT
RVAAP-39 Load Line 5	LL5ss-028M-SO	2354673.97	553986.58	OH83NFT
RVAAP-39 Load Line 5	LL5ss-029M-SO	2354950.25	553716.93	OH83NFT
RVAAP-39 Load Line 5	LL5ss-030-DUP	2354618.65	554407.34	OH83NFT
RVAAP-39 Load Line 5	LL5ss-030-SO	2354618.65	554407.34	OH83NFT
RVAAP-39 Load Line 5	LL5sw-007-DUP	2354813.98	554051.14	OH83NFT
RVAAP-39 Load Line 5	LL5sw-007-SW	2354813.98	554051.14	OH83NFT
RVAAP-39 Load Line 5	LL5sw-008-SW	2354976.20	554210.91	OH83NFT
RVAAP-39 Load Line 5	LL5sw-009-SW	2354967.89	553908.79	OH83NFT
RVAAP-39 Load Line 5	LL5sw-010-SW	2355091.53	553665.52	OH83NFT
RVAAP-39 Load Line 5	LL5sw-011-DUP	2354440.22	554403.40	OH83NFT
RVAAP-39 Load Line 5	LL5sw-011-SW	2354440.22	554403.40	OH83NFT
RVAAP-39 Load Line 5	LL5sw-012-SW	2354506.15	554601.45	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-40 Load Line 7	LL7mw-001-GW	2352190.31	554927.56	OH83NFT
RVAAP-40 Load Line 7	LL7mw-002-GW	2351916.51	555124.46	OH83NFT
RVAAP-40 Load Line 7	LL7mw-003-DUP	2352349.51	555414.33	OH83NFT
RVAAP-40 Load Line 7	LL7mw-003-GW	2352349.51	555414.33	OH83NFT
RVAAP-40 Load Line 7	LL7mw-004-GW	2352036.23	555583.15	OH83NFT
RVAAP-40 Load Line 7	LL7mw-005-GW	2351740.29	555579.52	OH83NFT
RVAAP-40 Load Line 7	LL7mw-006-GW	2351881.62	555992.59	OH83NFT
RVAAP-40 Load Line 7	LL7sd-012M-DUP	2351996.85	555970.89	OH83NFT
RVAAP-40 Load Line 7	LL7sd-012M-SD	2351996.85	555970.89	OH83NFT
RVAAP-40 Load Line 7	LL7sd-029M-SD	2352020.38	554961.69	OH83NFT
RVAAP-40 Load Line 7	LL7ss-001M-SO	2352173.54	554739.84	OH83NFT
RVAAP-40 Load Line 7	LL7ss-002M-SO	2352375.33	555104.99	OH83NFT
RVAAP-40 Load Line 7	LL7ss-003M-DUP	2352391.35	555059.08	OH83NFT
RVAAP-40 Load Line 7	LL7ss-003M-SO	2352391.35	555059.08	OH83NFT
RVAAP-40 Load Line 7	LL7ss-004M-SO	2352092.40	555144.50	OH83NFT
RVAAP-40 Load Line 7	LL7ss-005D-SO	2352131.47	555229.009	OH83NFT
RVAAP-40 Load Line 7	LL7ss-005M-SO	2352125.49	555206.42	OH83NFT
RVAAP-40 Load Line 7	LL7ss-006M-SO	2351913.02	555094.32	OH83NFT
RVAAP-40 Load Line 7	LL7ss-007M-SO	2352169.27	555279.03	OH83NFT
RVAAP-40 Load Line 7	LL7ss-008M-SO	2352284.58	555322.80	OH83NFT
RVAAP-40 Load Line 7	LL7ss-009M-SO	2352179.95	555487.23	OH83NFT
RVAAP-40 Load Line 7	LL7ss-010M-SO	2351764.62	555425.30	OH83NFT
RVAAP-40 Load Line 7	LL7ss-011M-SO	2351800.56	555436.55	OH83NFT
RVAAP-40 Load Line 7	LL7ss-012M-SO	2351846.83	555454.13	OH83NFT
RVAAP-40 Load Line 7	LL7ss-013D-DUP	2351896.55	555498.13	OH83NFT
RVAAP-40 Load Line 7	LL7ss-013D-SO	2351896.55	555498.13	OH83NFT
RVAAP-40 Load Line 7	LL7ss-013M-DUP	2351913.02	555471.21	OH83NFT
RVAAP-40 Load Line 7	LL7ss-013M-SO	2351913.02	555471.21	OH83NFT
RVAAP-40 Load Line 7	LL7ss-014M-SO	2351895.94	555598.27	OH83NFT
RVAAP-40 Load Line 7	LL7ss-015M-SO	2352107.34	555726.39	OH83NFT
RVAAP-40 Load Line 7	LL7ss-016M-SO	2351812.66	555708.24	OH83NFT
RVAAP-40 Load Line 7	LL7ss-017M-SO	2351749.67	555874.80	OH83NFT
RVAAP-40 Load Line 7	LL7ss-018M-QA	2352015.52	555970.89	OH83NFT
RVAAP-40 Load Line 7	LL7ss-018M-SO	2352015.52	555970.89	OH83NFT
RVAAP-40 Load Line 7	LL7ss-019M-SO	2352063.77	556013.58	OH83NFT
RVAAP-40 Load Line 7	LL7ss-020M-SO	2352233.33	555980.68	OH83NFT
RVAAP-40 Load Line 7	LL7ss-021M-SO	2351666.88	556041.62	OH83NFT
RVAAP-40 Load Line 7	LL7ss-022M-SO	2351820.63	555617.39	OH83NFT
RVAAP-40 Load Line 7	LL7ss-023D-SO	2352086.72	555669.51	OH83NFT

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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-40 Load Line 7	LL7ss-023M-SO	2352048.94	555660.76	OH83NFT
RVAAP-40 Load Line 7	LL7ss-024M-DUP	252296.60	555750.37	OH83NFT
RVAAP-40 Load Line 7	LL7ss-024M-SO	252296.60	555750.37	OH83NFT
RVAAP-40 Load Line 7	LL7ss-025M-SO	2352411.15	555467.78	OH83NFT
RVAAP-40 Load Line 7	LL7ss-026M-SO	2352291.04	555386.10	OH83NFT
RVAAP-40 Load Line 7	LL7ss-027M-SO	2351937.10	555234.75	OH83NFT
RVAAP-40 Load Line 7	LL7ss-028M-SO	2351862.63	555070.60	OH83NFT
RVAAP-40 Load Line 7	LL7ss-030M-SO	2352182.93	555056.18	OH83NFT
RVAAP-40 Load Line 7	LL7ss-031M-SO	2352361.50	555205.93	OH83NFT
RVAAP-40 Load Line 7	LL7ss-032D-SO	2352385.28	555031.41	OH83NFT
RVAAP-40 Load Line 7	LL7ss-032M-SO	2352451.99	555065.79	OH83NFT
RVAAP-40 Load Line 7	LL7ss-033M-DUP	2351494.13	554394.92	OH83NFT
RVAAP-40 Load Line 7	LL7ss-033M-SO	2351494.13	554394.92	OH83NFT
RVAAP-40 Load Line 7	LL7ss-034M-SO	2351526.16	554497.42	OH83NFT
RVAAP-40 Load Line 7	LL7ss-035M-SO	2351565.67	554588.17	OH83NFT
RVAAP-40 Load Line 7	LL7ss-036M-QA	2351391.64	554423.75	OH83NFT
RVAAP-40 Load Line 7	LL7ss-036M-SO	2351391.64	554423.75	OH83NFT
RVAAP-40 Load Line 7	LL7ss-037M-SO	2351434.34	554531.59	OH83NFT
RVAAP-40 Load Line 7	LL7ss-038M-SO	2351468.51	554626.61	OH83NFT
RVAAP-40 Load Line 7	LL7ss-039M-SO	2351295.54	554452.58	OH83NFT
RVAAP-40 Load Line 7	LL7ss-040M-SO	2351333.98	554561.48	OH83NFT
RVAAP-40 Load Line 7	LL7ss-041-SO	2352271.91	555318.49	OH83NFT
RVAAP-40 Load Line 7	LL7ss-042M-SO	2351376.69	554657.57	OH83NFT
RVAAP-40 Load Line 7	LL7sw-001-SW	2352709.99	554283.18	OH83NFT
RVAAP-40 Load Line 7	LL7sw-002-SW	2352590.71	554296.50	OH83NFT
RVAAP-40 Load Line 7	LL7sw-003-DUP	2352268.34	554717.02	OH83NFT
RVAAP-40 Load Line 7	LL7sw-003-SW	2352268.34	554717.02	OH83NFT
RVAAP-40 Load Line 7	LL7sw-006-SW	2352166.50	554982.90	OH83NFT
RVAAP-40 Load Line 7	LL7sw-007-SW	2352062.51	555251.60	OH83NFT
RVAAP-40 Load Line 7	LL7sw-008-SW	2351984.96	555449.47	OH83NFT
RVAAP-40 Load Line 7	LL7sw-009-SW	2351898.38	555678.96	OH83NFT
RVAAP-40 Load Line 7	LL7sw-011-SW	2351854.75	555595.03	OH83NFT

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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-41 Load Line 8	LL8mw-001-DUP	2351664.36	552608.92	OH83NFT
RVAAP-41 Load Line 8	LL8mw-001-GW	2351664.36	552608.92	OH83NFT
RVAAP-41 Load Line 8	LL8mw-002-GW	2351009.3	552409.85	OH83NFT
RVAAP-41 Load Line 8	LL8mw-003-GW	2351360.48	552230.97	OH83NFT
RVAAP-41 Load Line 8	LL8mw-004-GW	2351263.66	551808.38	OH83NFT
RVAAP-41 Load Line 8	LL8mw-005-GW	2351750.66	551521.77	OH83NFT
RVAAP-41 Load Line 8	LL8mw-006-GW	2351483.72	551294.68	OH83NFT
RVAAP-41 Load Line 8	LL8sd-001D-SD	2351708.53	552629.02	OH83NFT
RVAAP-41 Load Line 8	LL8sd-001M-SD	2351642.86	552122.76	OH83NFT
RVAAP-41 Load Line 8	LL8sd-001-SD	2351708.53	552629.02	OH83NFT
RVAAP-41 Load Line 8	LL8sd-002M-DUP	2351467.23	551719.26	OH83NFT
RVAAP-41 Load Line 8	LL8sd-002M-SD	2351467.23	551719.26	OH83NFT
RVAAP-41 Load Line 8	LL8sd-003M-SD	2351529.48	551556.96	OH83NFT
RVAAP-41 Load Line 8	LL8sd-004D-SD	2351608.83	552239.75	OH83NFT
RVAAP-41 Load Line 8	LL8sd-004M-SD	2351308.27	551652.56	OH83NFT
RVAAP-41 Load Line 8	LL8sd-005M-SD	2351197.11	551777.06	OH83NFT
RVAAP-41 Load Line 8	LL8sd-005-SD	2351513.67	552201.90	OH83NFT
RVAAP-41 Load Line 8	LL8sd-006M-SD	2351276.04	551471.37	OH83NFT
RVAAP-41 Load Line 8	LL8sd-007-DUP	2351361.51	552064.97	OH83NFT
RVAAP-41 Load Line 8	LL8sd-007-SD	2351361.51	552064.97	OH83NFT
RVAAP-41 Load Line 8	LL8sd-009-SD	2351682.52	551773.65	OH83NFT
RVAAP-41 Load Line 8	LL8sd-010-SD	2351769.09	551548.21	OH83NFT
RVAAP-41 Load Line 8	LL8sd-011-SD	2352101.76	551582.71	OH83NFT
RVAAP-41 Load Line 8	LL8ss-001M-SO	2351656.32	552217.31	OH83NFT
RVAAP-41 Load Line 8	LL8ss-002M-SO	2351420.67	552292.90	OH83NFT
RVAAP-41 Load Line 8	LL8ss-003M-SO	2351349.53	552260.29	OH83NFT
RVAAP-41 Load Line 8	LL8ss-004M-SO	2351143.51	552238.06	OH83NFT
RVAAP-41 Load Line 8	LL8ss-005D-DUP	2351066.44	552234.53	OH83NFT
RVAAP-41 Load Line 8	LL8ss-005D-SO	2351066.44	552234.53	OH83NFT
RVAAP-41 Load Line 8	LL8ss-005M-DUP	2351069.40	552206.94	OH83NFT
RVAAP-41 Load Line 8	LL8ss-005M-SO	2351069.40	552206.94	OH83NFT
RVAAP-41 Load Line 8	LL8ss-006M-SO	2351325.81	552195.08	OH83NFT
RVAAP-41 Load Line 8	LL8ss-007M-SO	2351293.20	552120.97	OH83NFT
RVAAP-41 Load Line 8	LL8ss-008M-SO	2351153.89	552052.80	OH83NFT
RVAAP-41 Load Line 8	LL8ss-009M-SO	2351208.34	551921.35	OH83NFT
RVAAP-41 Load Line 8	LL8ss-010M-DUP	2351259.63	551941.87	OH83NFT
RVAAP-41 Load Line 8	LL8ss-010M-SO	2351259.63	551941.87	OH83NFT
RVAAP-41 Load Line 8	LL8ss-011M-SS	2351542.78	551911.09	OH83NFT
RVAAP-41 Load Line 8	LL8ss-012M-SS	2351592.02	551933.66	OH83NFT

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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-41 Load Line 8	LL8ss-013M-QA	2351645.95	551694.12	OH83NFT
RVAAP-41 Load Line 8	LL8ss-013M-SS	2351645.95	551694.12	OH83NFT
RVAAP-41 Load Line 8	LL8ss-014M-SO	2351352.49	551670.41	OH83NFT
RVAAP-41 Load Line 8	LL8ss-015D-SO	2351459.75	551420.84	OH83NFT
RVAAP-41 Load Line 8	LL8ss-015M-SO	2351444.38	551425.86	OH83NFT
RVAAP-41 Load Line 8	LL8ss-016M-SO	2351714.13	551531.09	OH83NFT
RVAAP-41 Load Line 8	LL8ss-017M-SO	2351219.35	552145.00	OH83NFT
RVAAP-41 Load Line 8	LL8ss-018M-SO	2351353.85	552011.60	OH83NFT
RVAAP-41 Load Line 8	LL8ss-019-SO	2351168.90	552021.80	OH83NFT
RVAAP-41 Load Line 8	LL8sw-002-SW	2351643.92	552429.35	OH83NFT
RVAAP-41 Load Line 8	LL8sw-003-DUP	2351551.81	552393.94	OH83NFT
RVAAP-41 Load Line 8	LL8sw-003-SW	2351551.81	552393.94	OH83NFT
RVAAP-41 Load Line 8	LL8sw-004-SW	2351608.83	552239.75	OH83NFT
RVAAP-41 Load Line 8	LL8sw-005-SW	2351513.67	552201.90	OH83NFT
RVAAP-41 Load Line 8	LL8sw-007-SW	2351361.51	552064.97	OH83NFT
RVAAP-41 Load Line 8	LL8sw-008-SW	2351596.10	551990.01	OH83NFT
RVAAP-41 Load Line 8	LL8sw-009-SW	2351682.52	551773.65	OH83NFT
RVAAP-41 Load Line 8	LL8sw-010-SW	2351769.09	551548.21	OH83NFT
RVAAP-41 Load Line 8	LL8sw-011-SW	2352101.76	551582.71	OH83NFT
RVAAP-41 Load Line 8	LL8sw-012-SW	2351642.86	552122.76	OH83NFT
RVAAP-41 Load Line 8	LL8sw-013-DUP	2351467.23	551719.26	OH83NFT
RVAAP-41 Load Line 8	LL8sw-013-SW	2351467.23	551719.26	OH83NFT
RVAAP-41 Load Line 8	LL8sw-014-SW	2351529.48	551556.96	OH83NFT
RVAAP-41 Load Line 8	LL8sw-015-SW	2351308.27	551652.56	OH83NFT
RVAAP-41 Load Line 8	LL8sw-016-SW	2351197.11	551777.06	OH83NFT
RVAAP-41 Load Line 8	LL8sw-017-SW	2351276.04	551471.37	OH83NFT
RVAAP-41 Load Line 8	LL8sw-018-SW	2351555.22	552424.54	OH83NFT
RVAAP-41 Load Line 8	LL8sw-019-SW	2351583.58	552348.19	OH83NFT

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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-43 Load Line 10	L10mw-001-GW	2355272.22	555818.25	OH83NFT
RVAAP-43 Load Line 10	L10mw-002-GW	2355712.51	555525.36	OH83NFT
RVAAP-43 Load Line 10	L10mw-003-GW	2355387.92	555496.71	OH83NFT
RVAAP-43 Load Line 10	L10mw-004-GW	2355440.2	555234.59	OH83NFT
RVAAP-43 Load Line 10	L10mw-005-DUP	2355941.55	555382.53	OH83NFT
RVAAP-43 Load Line 10	L10mw-005-GW	2355941.55	555382.53	OH83NFT
RVAAP-43 Load Line 10	L10mw-006-GW	2355656.8	554997.25	OH83NFT
RVAAP-43 Load Line 10	L10sd-004-SD	2355515.34	555558.76	OH83NFT
RVAAP-43 Load Line 10	L10sd-005-SD	2355414.30	555339.84	OH83NFT
RVAAP-43 Load Line 10	L10sd-006-SD	2355468.69	555392.80	OH83NFT
RVAAP-43 Load Line 10	L10sd-012-SD	2355283.56	555642.14	OH83NFT
RVAAP-43 Load Line 10	L10sd-022-SD	2355875.53	555352.49	OH83NFT
RVAAP-43 Load Line 10	L10sd-024-SD	2355909.55	555638.07	OH83NFT
RVAAP-43 Load Line 10	L10ss-001M-SO	2355129.33	555657.78	OH83NFT
RVAAP-43 Load Line 10	L10ss-002M-SO	2355261.25	555668.27	OH83NFT
RVAAP-43 Load Line 10	L10ss-003M-SO	2355312.54	555718.25	OH83NFT
RVAAP-43 Load Line 10	L10ss-004M-SO	2355481.32	555716.44	OH83NFT
RVAAP-43 Load Line 10	L10ss-005M-DUP	2355567.06	555793.16	OH83NFT
RVAAP-43 Load Line 10	L10ss-005M-SO	2355567.06	555793.16	OH83NFT
RVAAP-43 Load Line 10	L10ss-006M-SO	2355403.70	555528.72	OH83NFT
RVAAP-43 Load Line 10	L10ss-007M-SO	2355492.15	555548.57	OH83NFT
RVAAP-43 Load Line 10	L10ss-008M-SO	2355564.35	555637.02	OH83NFT
RVAAP-43 Load Line 10	L10ss-009M-SO	2355660.01	555720.05	OH83NFT
RVAAP-43 Load Line 10	L10ss-010D-SO	2355365.74	555306.47	OH83NFT
RVAAP-43 Load Line 10	L10ss-010M-SO	2355362.18	555350.02	OH83NFT
RVAAP-43 Load Line 10	L10ss-011M-SO	2355418.14	555405.97	OH83NFT
RVAAP-43 Load Line 10	L10ss-012M-SO	2355466.88	555452.91	OH83NFT
RVAAP-43 Load Line 10	L10ss-013M-QA	2355426.26	555281.43	OH83NFT
RVAAP-43 Load Line 10	L10ss-013M-SO	2355426.26	555281.43	OH83NFT
RVAAP-43 Load Line 10	L10ss-014M-SO	2355488.54	555331.97	OH83NFT
RVAAP-43 Load Line 10	L10ss-015M-SO	2355542.69	555386.12	OH83NFT
RVAAP-43 Load Line 10	L10ss-016M-SO	2355642.87	555550.38	OH83NFT
RVAAP-43 Load Line 10	L10ss-017M-DUP	2355741.24	555637.02	OH83NFT
RVAAP-43 Load Line 10	L10ss-017M-SO	2355741.24	555637.02	OH83NFT
RVAAP-43 Load Line 10	L10ss-018M-SO	2355650.09	555292.26	OH83NFT
RVAAP-43 Load Line 10	L10ss-019M-SO	2355686.19	555250.74	OH83NFT
RVAAP-43 Load Line 10	L10ss-020M-SO	2355776.44	555239.01	OH83NFT
RVAAP-43 Load Line 10	L10ss-021D-SO	2355896.30	555316.21	OH83NFT
RVAAP-43 Load Line 10	L10ss-021M-SO	2355880.23	555374.39	OH83NFT

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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-43 Load Line 10	L10ss-022M-SO	2355900.08	555505.25	OH83NFT
RVAAP-43 Load Line 10	L10ss-023M-SO	2355898.28	555665.90	OH83NFT
RVAAP-43 Load Line 10	L10ss-024M-SO	2355131.82	555566.21	OH83NFT
RVAAP-43 Load Line 10	L10ss-025M-SO	2355292.91	555598.70	OH83NFT
RVAAP-43 Load Line 10	L10ss-026M-SO	2355353.16	555708.32	OH83NFT
RVAAP-43 Load Line 10	L10ss-027D-SO	2355493.47	555786.31	OH83NFT
RVAAP-43 Load Line 10	L10ss-027M-DUP	2355482.44	555780.11	OH83NFT
RVAAP-43 Load Line 10	L10ss-027M-SO	2355482.44	555780.11	OH83NFT
RVAAP-43 Load Line 10	L10ss-028M-SO	2355689.57	555735.43	OH83NFT
RVAAP-43 Load Line 10	L10ss-029M-SO	2355595.48	555614.95	OH83NFT
RVAAP-43 Load Line 10	L10ss-030M-QA	2355389.26	555420.00	OH83NFT
RVAAP-43 Load Line 10	L10ss-030M-SO	2355389.26	555420.00	OH83NFT
RVAAP-43 Load Line 10	L10ss-031M-SO	2355367.60	555253.04	OH83NFT
RVAAP-43 Load Line 10	L10ss-032M-SO	2355451.98	555361.11	OH83NFT
RVAAP-43 Load Line 10	L10ss-033D-SO	2355497.84	555243.21	OH83NFT
RVAAP-43 Load Line 10	L10ss-033M-SO	2355542.69	555288.01	OH83NFT
RVAAP-43 Load Line 10	L10ss-034M-SO	2355631.36	555193.24	OH83NFT
RVAAP-43 Load Line 10	L10ss-035M-SO	2355987.63	555607.73	OH83NFT
RVAAP-43 Load Line 10	L10ss-036M-SO	2356012.45	555378.03	OH83NFT
RVAAP-43 Load Line 10	L10ss-037-DUP	2355120.07	555658.35	OH83NFT
RVAAP-43 Load Line 10	L10ss-037-SO	2355120.07	555658.35	OH83NFT
RVAAP-43 Load Line 10	L10ss-038-SO	2355394.89	555533.21	OH83NFT
RVAAP-43 Load Line 10	L10ss-039-SO	2355731.41	555624.02	OH83NFT
RVAAP-43 Load Line 10	L10ss-040M-SO	2355321.57	555075.24	OH83NFT
RVAAP-43 Load Line 10	L10sw-002-DUP	2355453.77	555619.34	OH83NFT
RVAAP-43 Load Line 10	L10sw-002-SW	2355453.77	555619.34	OH83NFT
RVAAP-43 Load Line 10	L10sw-004-SW	2355515.34	555558.76	OH83NFT
RVAAP-43 Load Line 10	L10sw-006-SW	2355468.69	555392.80	OH83NFT
RVAAP-43 Load Line 10	L10sw-007-SW	2355602.71	555471.13	OH83NFT
RVAAP-43 Load Line 10	L10sw-008-SW	2355751.54	555321.43	OH83NFT
RVAAP-43 Load Line 10	L10sw-009-SW	2355842.06	555229.69	OH83NFT
RVAAP-43 Load Line 10	L10sw-011-SW	2355196.81	555728.91	OH83NFT
RVAAP-43 Load Line 10	L10sw-012-SW	2355283.56	555642.14	OH83NFT
RVAAP-43 Load Line 10	L10sw-014-SW	2355462.99	555726.39	OH83NFT
RVAAP-43 Load Line 10	L10sw-015-SW	2355548.78	555801.66	OH83NFT
RVAAP-43 Load Line 10	L10sw-016-SW	2355665.57	555724.77	OH83NFT
RVAAP-43 Load Line 10	L10sw-017-SW	2355345.34	555361.13	OH83NFT
RVAAP-43 Load Line 10	L10sw-018-SW	2355397.89	555413.99	OH83NFT
RVAAP-43 Load Line 10	L10sw-019-DUP	2355450.78	555467.77	OH83NFT

SAMPLE LOCATION SURVEY DATA
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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-43 Load Line 10	L10sw-019-SW	2355450.78	555467.77	OH83NFT
RVAAP-43 Load Line 10	L10sw-020-SW	2355501.41	555303.78	OH83NFT
RVAAP-43 Load Line 10	L10sw-021-SW	2355555.00	555355.49	OH83NFT
RVAAP-43 Load Line 10	L10sw-022-SW	2355875.53	555352.49	OH83NFT
RVAAP-43 Load Line 10	L10sw-024-SW	2355909.55	555638.07	OH83NFT
RVAAP-43 Load Line 10	L10sw-025-SW	2355304.12	555477.38	OH83NFT

SAMPLE LOCATION SURVEY DATA
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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-45 Wet Storage Area	WSAss-001M-SO	2357002.48	559431.09	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-002M-SO	2357008.53	559256.30	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-003M-SO	2357007.67	559080.64	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-004D-SO	2357013.17	558926.23	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-004M-SO	2357007.67	558921.43	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-005M-DUP	2357449.84	559418.98	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-005M-SO	2357449.84	559418.98	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-006M-SO	2357457.63	558984.59	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-007M-SO	2357029.30	559512.43	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-008M-SO	2357002.48	559342.83	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-009M-SO	2357002.48	559298.70	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-010M-SO	2356954.88	559318.60	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-011D-SO	2356868.73	559386.87	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-011M-SO	2356877.01	559392.15	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-012M-SO	2356861.43	559235.53	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-013M-SO	2356843.26	559073.72	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-014M-DUP	2357005.07	559027.86	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-014M-SO	2357005.07	559027.86	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-015M-SO	2356999.88	558969.02	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-016M-QA	2356928.06	558977.67	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-016M-SO	2356928.06	558977.67	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-017M-SO	2356861.43	558932.67	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-020M-DUP	2357047.47	559131.69	OH83NFT
RVAAP-45 Wet Storage Area	WSAss-020M-SO	2357047.47	559131.69	OH83NFT

SAMPLE LOCATION SURVEY DATA
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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-46 Building F-15 and F-16	F15ss-001M-SO	2349293.22	563989.46	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-002M-SO	2349429.02	563940.15	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-003M-SO	2349517.65	563892.97	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-004M-SO	2349337.53	563812.92	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-005M-SO	2349420.44	563622.09	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-006D-SO	2349432.53	563916.06	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-006M-SO	2349429.73	563917.27	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-007M-SO	2349504.78	563812.21	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-008M-SO	2349352.54	563812.21	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-009M-DUP	2349341.11	563659.97	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-009M-SO	2349341.11	563659.97	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-010M-SO	2349464.04	563622.09	OH83NFT
RVAAP-46 Building F-15 and F-16	F15ss-011M-SO	2349509.07	563543.46	OH83NFT
RVAAP-46 Building F-15 and F-16	F16sd-001M-DUP	2349471.09	562351.33	OH83NFT
RVAAP-46 Building F-15 and F-16	F16sd-001M-SD	2349471.09	562351.33	OH83NFT
RVAAP-46 Building F-15 and F-16	F16sd-002M-SD	2349586.79	562091.30	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-001M-SO	2349385.21	562461.06	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-002M-SO	2349553.39	562376.37	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-003M-SO	2349486.60	562222.51	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-004M-SO	2349366.13	562613.74	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-005D-SO	234955.37	562575.98	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-005M-SO	2349457.97	562576.76	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-006M-SO	2349535.50	562481.34	OH83NFT
RVAAP-46 Building F-15 and F-16	F16ss-007M-SO	2349405.49	562468.22	OH83NFT
RVAAP-46 Building F-15 and F-16	F16sw-001-SW	2349471.09	562351.33	OH83NFT
RVAAP-46 Building F-15 and F-16	F16sw-002-DUP	2349586.79	562091.30	OH83NFT
RVAAP-46 Building F-15 and F-16	F16sw-002-SW	2349586.79	562091.30	OH83NFT

SAMPLE LOCATION SURVEY DATA
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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-48 Anchor Test Area	ATAsb-001M-SO	2361590.74	556012.61	OH83NFT
RVAAP-48 Anchor Test Area	ATAsb-002M-SO	2361590.74	556012.61	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-001M-DUP	2361590.46	556017.63	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-001M-SO	2361590.46	556017.63	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-002M-SO	2361611.81	556016.80	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-003D-SO	2361570.61	556012.78	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-003M-SO	2361568.70	556016.39	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-004M-SO	2361590.87	556049.65	OH83NFT
RVAAP-48 Anchor Test Area	ATAss-005M-SO	2361494.40	556037.33	OH83NFT

SAMPLE LOCATION SURVEY DATA
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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-50 Atlas Scrap Yard	ASYmw-001-GW	2366262.85	558406.04	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-002-GW	2366168.86	557889.86	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-003-DUP	2366653.49	558013.94	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-003-GW	2366653.49	558013.94	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-004-GW	2367164.04	557642.81	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-005-GW	2367446.16	557785.01	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-006-GW	2366748.73	557255.72	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-007-GW	2366836.49	556820.08	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-008-GW	2367473.07	557085.66	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-009-GW	2366633.94	557605.68	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYmw-010-GW	2366983.37	557272.61	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-001-DUP	2365949.58	557002.92	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-001-SD	2365949.58	557002.92	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-002-SD	2366153.78	557094.56	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-008-SD	2366380.42	557510.45	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-010-SD	2366515.84	557197.95	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-011-SD	2366572.90	557065.00	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-012-DUP	2366602.07	556998.18	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-012-SD	2366602.07	556998.18	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-017-SD	2366623.84	558010.37	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsd-024M-SD	2367657.35	557598.24	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-001M-SO	2366235.71	558334.98	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-002M-SO	2366575.93	558104.93	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-003M-SO	2366702.30	558211.86	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-004D-SO	236677.83	558258.07	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-004M-SO	2366818.95	558228.06	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-005D-SO	2366986.26	557964.32	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-005M-SO	2366964.76	557985.04	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-006M-SO	2366708.78	557657.78	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-007M-DUP	2366546.77	557530.19	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-007M-SO	2366546.77	557530.19	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-008M-SO	2366573.50	557442.71	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-009M-SO	2366721.74	557442.71	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-010M-SO	2367279.06	557618.89	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-011M-SO	2367385.98	557618.89	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-012D-QA	2367015.79	557136.51	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-012D-SO	2367015.79	557136.51	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-012M-QA	2367015.79	557136.51	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-012M-SO	2367015.79	557136.51	OH83NFT

SAMPLE LOCATION SURVEY DATA
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RAVENNA ARMY AMMUNITION PLANT RAVENNA, OHIO

SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-50 Atlas Scrap Yard	ASYss-013D-SO	2366546.77	556963.96	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-013M-SO	2366546.77	556963.96	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-014M-SO	2367533.33	556874.05	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-015D-SO	2366890.97	556952.00	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-015M-SO	2366886.99	556934.80	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-016M-SO	2366957.47	556968.82	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-017M-DUP	2367035.23	556973.68	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-017M-SO	2367035.23	556973.68	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-018M-SO	2367130.01	556973.68	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-019M-SO	2366634.25	556631.03	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-020M-SO	2366487.93	558500.50	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-021M-DUP	2367259.48	558510.49	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-021M-SO	2367259.48	558510.49	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-022M-QA	2367581.58	558163.41	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-022M-SO	2367581.58	558163.41	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-023M-SO	2367568.89	557697.82	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-025M-SO	2365656.46	557606.60	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-026M-SO	2367543.54	557497.43	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-027D-DUP	2367535.74	557200.57	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-027D-SO	2367535.74	557200.57	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-027M-DUP	2367535.74	557200.57	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-027M-SO	2367535.74	557200.57	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-028M-SO	2367524.15	556822.57	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-029M-SO	2366183.31	556954.91	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-030M-SO	2366520.39	556790.11	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-031M-SO	2367072.21	556700.23	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-032M-SO	2367416.78	556685.24	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-033M-SO	2367399.30	556780.13	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYss-034M-SO	2367334.38	556780.13	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-001-SW	2365949.58	557002.92	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-002-SW	2366153.78	557094.56	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-003-SW	2366088.86	557232.48	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-004-DUP	2366034.79	557360.01	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-004-SW	2366034.79	557360.01	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-005-SW	2366304.11	557612.61	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-006-SW	2366352.90	557500.17	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-007-SW	2366248.65	557738.29	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-008-SW	2366380.42	557510.45	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-009-SW	2366436.02	557380.58	OH83NFT

SAMPLE LOCATION SURVEY DATA
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SiteOrArea	Sample Location ID	East	North	CoordinateSystem
RVAAP-50 Atlas Scrap Yard	ASYsw-010-SW	2366515.84	557197.95	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-011-SW	2366572.90	557065.00	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-012-DUP	2366602.07	556998.18	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-012-SW	2366602.07	556998.18	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-014-SW	2366623.84	558010.37	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-016-SW	2366818.95	558501.84	OH83NFT
RVAAP-50 Atlas Scrap Yard	ASYsw-017-SW	2365747.13	556916.25	OH83NFT

Appendix T

Geophysical Survey Report

Atlas Scrap Yard

GEOPHYSICAL REPORT

GEOPHYSICAL INVESTIGATION
ATLAS SCRAP YARD,
RAVENNA ARMY
AMMUNITNION PLANT,
RAVENNA, OHIO

Submitted to:

US ARMY TACOM
BRAC Technical Support Office
Rock Island, Illinois 61299-7630

Submitted by:

MKM Engineers, Inc.
4153 Bluebonnet Drive
Stafford, Texas 77477

November 10, 2004

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed -- in whole or in part -- for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of -- or in connection with -- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in all sheets of this proposal.

Contents

Use or disclosure of data contained on this sheet is subject to the restriction on the cover page of this document.

1.0 Introduction

1.1 Project Objectives

This report covers the procedures and results of an electromagnetic (EM) geophysical survey conducted in the Atlas Scrap Yard at Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. The work was performed by MKM Engineers, Inc. (MKM) during August 2004.

The objective of the geophysical survey was to perform a non-intrusive investigation to locate subsurface metallic targets that could be underground storage tanks (USTs). Following the geophysical survey, a secondary objective was to provide a coordinate list for all possible USTs to support future verification by excavation activities planned at the site.

1.2 Site Description

The survey area includes two sites that were previously occupied by filling stations. Photographs of the survey sites are located in Appendix A.

Site 1 is comprised of approximately 1.4 acres of open terrain. Cultural features present at the site include metal posts, an electrical box, and a pile of rocks and concrete. Additionally, numerous small metal items were scattered across the surface of the site at the time of the geophysical survey. Electromagnetic measurements are influenced by electrical power lines and surface metal. Because of this, it may not be possible to detect subsurface metallic items, such as USTs, that are buried in the vicinity of these items.

Site 2 is located north of Site 1. It comprises roughly one-half acre of partially wooded terrain. The surface is covered with similar metallic items as found in Site 1. Concrete slabs are present at the site.

An archival drawing of the filling stations is located in Appendix B. The drawing depicts the layout of the filling stations and their proximity to the roads. According to the drawing, three different types of storage tanks were located at the filling stations:

- Under Gas Tank, 1,000 gallons, approximately 10 feet by 7 feet in size;
- Under Kerosene and Fuel Oil Tank, combined total of 3,000 gallons, approximately 10 feet by 10 feet in size;
- Raised Supply Storage Gas Tank, 10,000 gallons, approximately 15 feet by 9 feet in size.

Use or disclosure of data contained on this sheet is subject to the restriction on the cover page of this document.

2.0 Survey Logistics

2.1 Equipment

2.1.1 Geonics EM61 MK2

The Geonics EM61 MK2 is a time-domain electromagnetic (EM) metal detector which detects both ferrous and non-ferrous metal objects (Figure 2-1). It consists of a single set of one-half by one-meter coils. The transmitter generates a pulsed primary magnetic field in the earth which induces eddy currents in nearby metallic objects. The eddy current decay produces a secondary magnetic field which is measured by the receiver coils. The responses are recorded and displayed by an integrated data logger.

The EM61 MK2 is designed so that a low level and/or constant signal is received when no metal is present. When metal is present, an increased signal is received. This signal is generally highest when the coils are located directly over the metal object. Gridded and contoured EM61 data will produce a "bulls-eye" type anomaly for isolated metal objects.

Figure 2-1: EM61 MK2 and Operator

2.1.2 Geonics EM31 MK2

The Geonics EM31 MK2 is an electromagnetic terrain conductivity meter (Figure 2-2). The EM31 maps geological variations, groundwater contaminants, or any subsurface feature associated with changes in ground conductivity. The instrument consists of a four meter boom with an internal transmitter coil on one end and a receiver coil on the other. The effective depth of exploration is about six meters.

Ground conductivity and in-phase measurements can be read directly from the data logger screen. Small changes in ground conductivity can be measured while the equipment operator traverses the survey area. The in-phase component is especially useful for detecting buried metal hazardous waste.

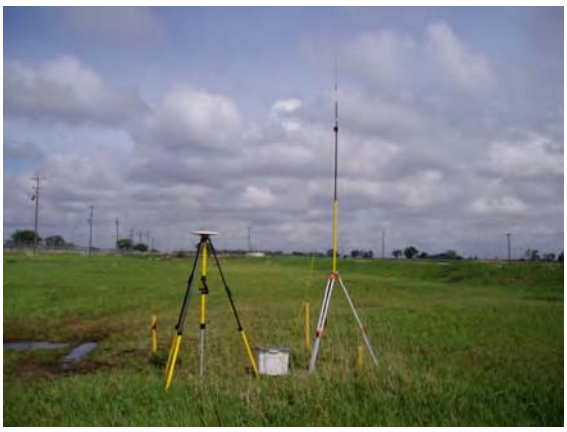
Use or disclosure of data contained on this sheet is subject to the restriction on the cover page of this document.

Figure 2-2: EM31 MK2 and Operator

2.1.3 Global Positioning System (GPS)

The Trimble GPS Total Station 5700® with 5800 RTK Rover was used to provide survey control at the Atlas Scrap Yard (Figure 2-3). The GPS base station was located within one to two miles, line of site, from the survey area. The base station receiver was set up over a known control point and spatial positional corrections were transmitted in real time to the GPS rover receiver via a radio modem. This system can provide positional accuracy of about 3 cm for stacked, stationary readings.

Figure 2-3: Trimble 5700 Base Station



2.2 Data Collection

A grid system measuring 100 feet by 100 feet was laid out at each survey site. The positions of the grid corners were collected with the Trimble 5700/5800 GPS System. One survey control point, labeled "NAVD88", was utilized during the survey. Site 1 was divided into six grids and Site 2 was divided into two grids. At Site 1, all twelve grid corners were measured with GPS. Because of dense tree cover at Site 2, only two grid points were measured with GPS (A201 and A202). Positions for the remaining stakes were obtained with a tape measure. A list containing the State Plane coordinates for each measured grid point is located in Appendix C.

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Electromagnetic data were collected with the EM61 along N-S survey lines spaced five feet apart. Positional data for the survey were provided by an integrated wheel counter set to record distance traveled as a function of wheel rotation. With this system, a data point was collected every 0.6 feet along survey lines. During data processing, local grid coordinates were warped into State Plane coordinates using the grid corner positions acquired during the GPS survey. Positional accuracy for this system is estimated at about three feet along survey lines and five feet perpendicular to survey lines in areas of open terrain. A lesser degree of positional accuracy is expected for data collected in areas with thick brush and trees.

EM31 data were collected at two grids within Site 1 and one grid within Site 2. Survey grids were selected for EM31 data collection based on the expected location of USTs as well as the results of the EM61 survey. Data were collected with the EM31 along N-S lines spaced 5 feet apart with a data point collected every five feet. Supplementary EM31 data were collected along E-W survey lines. All E-W lines were spaced ten feet apart and a data point was collected every ten feet. Local grid coordinates were warped into State Plane coordinates during data processing. Positional accuracy for this system is estimated at about five to ten feet in areas of open terrain. A lesser degree of positional accuracy is expected for data collected in areas with thick brush and trees.

2.3 Data Processing

Data were downloaded from the data loggers to a field laptop at the end of each day. The DAT61 and DAT31 software applications were used to set the survey geometry for each data file in local grid coordinates. Data were exported from DAT61 and DAT31 in xyz format and imported into Geosoft's Oasis montaj© mapping software for analysis. All data files were checked for correctness and completeness. Local coordinates were warped into Ohio State Plane coordinates utilizing the grid corner positions acquired during the GPS survey. A drift correction was applied to the EM61 data to remove the effects of DC bias and sensor drift. Since the EM31 provides a measurement of ground conductivity, no drift correction was applied to the EM31 data files.

All EM data were gridded and displayed as color maps for interpretation by the processor. Electromagnetic anomalies interpreted as buried metal were picked from the EM61 data. To accomplish this, a peak-picking algorithm with a threshold of 10mV was used. With this method, the peak positions of anomalies exhibiting readings of 10mV or higher were digitized. Anomalies exhibiting characteristics consistent with that of a UST were selected for further investigation. Because artifacts resulting from the gridding process can be misleading, data profiles were carefully examined during interpretation.

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3.0 Results

3.1 General

Figures 3-1 through 3-6 show color maps of the electromagnetic data collected at two sites within the Atlas Scrap Yard. A total of 20 anomalies were selected for further investigation. It is expected that the EM response from a UST will result in an anomaly that is slightly larger in diameter than the UST itself. The size of the anomaly is dependent on the depth of the item. For example, a UST located at greater depth will produce an EM anomaly that is larger in diameter but smaller in magnitude than a similar size UST at a more shallow depth. Based on an archival drawing of the service station (Appendix B), the minimum tank size is expected to be about 10-feet by 7-feet. Because of this, all EM anomalies with a minimum diameter of about 12-feet by 10-feet were selected for further investigation. These anomalies are outlined on the figures. It is possible that some of these anomalies may correspond to surface metal items and can, therefore, be eliminated from further investigation.

Several smaller anomalies are also present in the data. Many of these anomalies are expected to correspond to surface or near-surface metal items. Even though these anomalies do not meet the size criteria of a possible UST, there is a possibility that they may be masking buried items, such as USTs, that are located at greater depth. A tabulated list of these anomalies can be found in Appendix D.

3.2 Site 1

Figure 3-1 shows a color map of the EM61 data collected at Site 1. The figure depicts Channel 1 of the EM61 data in Ohio State Plane coordinates. The color scale has been selected in order to minimize the appearance of small anomalies that are not expected to correspond to possible USTs. A total of 371 anomalies were selected from the EM61 data. Eleven of the anomalies fit the size criteria for possible USTs and have been selected for further investigation. Table 1 provides details concerning these eleven anomalies. A list containing coordinates for the remaining anomalies can be found in Appendix D.

Table 1: Site 1 EM61 Anomalies Selected for Further Investigation

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Approx. Size (feet)
1	2366986.75	557083.98	659.0	22 x 12
2	2367004.17	557097.45	790.9	20 x 18
3	2367046.20	557097.91	563.0	15 x 17
4	2367119.58	557103.02	138.0	22 x 12
5	2367061.99	557156.90	278.4	12 x 10
6	2367091.95	557163.40	293.3	25 x 10
7	2367107.04	557150.63	193.2	12 x 11
8	2367120.04	557169.21	1141.1	12 x 12
9	2367097.98	557216.35	2220.5	17 x 15
10	2367098.68	557313.65	800.0	30 x 15
11	2367006.49	557363.81	1417.9	17 x 15

*NAD83 Ohio North Zone, State Plane Coordinates

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The majority of anomalies selected for further investigation are located in the southern half of the site. It is possible that some of these anomalies are caused my multiple, closely spaced metal objects. The locations of anomalies 1 and 2 correspond to mapped surface features, but the size of the anomalies suggests that buried metal may also be present at these locations. Several of the anomalies (6, 7, 8, and 10) are located in areas where individual anomaly boundaries are difficult to define due to the presence of overlapping anomalies.

Figures 3-2 and 3-3 show color maps of the EM31 data collected over the two southern grids. Based on the location of the road and the results of the EM61 survey, it is believed that this portion of Site 1 represents the area that is most likely to contain USTs. On the maps, yellow and green colors represent background readings. Blue and pink colors indicate anomalously low or high readings associated with changes in subsurface conductivity. The anomalous high area along the western edge of the site corresponds to the location of the road. The locations of anomalies picked from the EM61 data are superimposed on the figures. No additional anomalies were selected from the EM31 data.

3.3 Site 2

A color map of the EM61 data collected at Site 2 is displayed in Figure 3-4. There are two gaps in the data coverage due to the presence of surface obstacles. A total of 109 anomalies were selected from the EM61 data. Nine of the anomalies fit the size criteria for possible USTs and have been selected for further investigation. These anomalies are outlined on the figure and listed in Table 2. In addition, the outline of one anomaly picked from the EM31 is superimposed on the figure. A list containing coordinates for the remaining anomalies picked from the EM61 data can be found in Appendix D.

Table 2: Site 2 EM61 Anomalies Selected for Further Investigation

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Approx. Size (feet)
372	2366923.80	557960.63	165.6	22 x 8
373	2366928.51	557940.88	139.5	22 x 12
374	2366959.13	557938.89	349.5	16 x 12
375	2366948.08	557955.38	281.0	30 x 10
376	2366964.39	557985.46	533.9	15 x 12
377	2366945.36	557998.32	480.0	17 x 15
378	2366967.29	558008.65	131.3	12 x 10
379	2367006.07	557966.98	88.8	10 x 8
380	2367097.21	557981.83	163.1	13 x 12

*NAD83 Ohio North Zone, State Plane Coordinates

All but one of anomalies selected for further investigation are located in the western half of the site. It is possible that some of these anomalies are caused my multiple, closely spaced buried objects. Anomaly 379 is slightly smaller than the size criteria defined for possible USTs. However, this anomaly was selected for further investigation due to the limited EM61 data coverage near the anomaly and the fact that the EM31 data shows an anomaly in this area.

Figures 3-5 and 3-6 show color maps of the EM31 data collected at Site 2. One anomaly was selected from the EM31 data. Although the anomaly appears too large to be associated with a UST, the exact size cannot be determined because it appears to extend beyond the boundaries of the EM31 data collection. The EM61 data does not show an analogous anomaly at this location. It is possible

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that the anomaly is the result of influence from a non-metallic buried feature that cannot be detected with the EM61, like a building foundation or non-metallic pipe. Another possibility is that the anomaly is caused by the influence of buried metal that is located beyond the depth detection capabilities of the EM61.

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4.0 Conclusions

A geophysical survey was performed at two sites within the Atlas Scrap Yard to locate subsurface metallic targets that could be underground storage tanks. The Geonics EM61 MK2 metal detector was used to map approximately 2 acres of terrain. Based on the results of the EM61 survey, approximately three-fourths of an acre was mapped with the Geonics EM31 terrain conductivity meter. Color maps of the EM data are shown in Figures 3-1 through 3-6. A total of 480 anomalies were picked from the EM61 data (Appendix D). Twenty anomalies fitting the size criteria for a possible UST were selected for further investigation (Tables 1 and 2). One additional anomaly was picked from the EM31 data collected at Site 2. Although this anomaly does not fit the expected size of a buried UST, it may correspond to remnants of structures associated with the filling station.

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Photograph 1: Atlas Scrap Yard, Site 1.

Photograph 2: Metal Lids at Site 1.

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Photograph 3: Pipe and electrical wire at Site 1.

Photograph 4: Pile of concrete and rocks at Site 1.

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Photograph 5: Atlas Scrap Yard, Site 2.

Photograph 6: Another View of Atlas Scrap Yard, Site 2.

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Photograph 7: Concrete pads at Site 2.

Photograph 8: Another view of concrete pads at Site 2.

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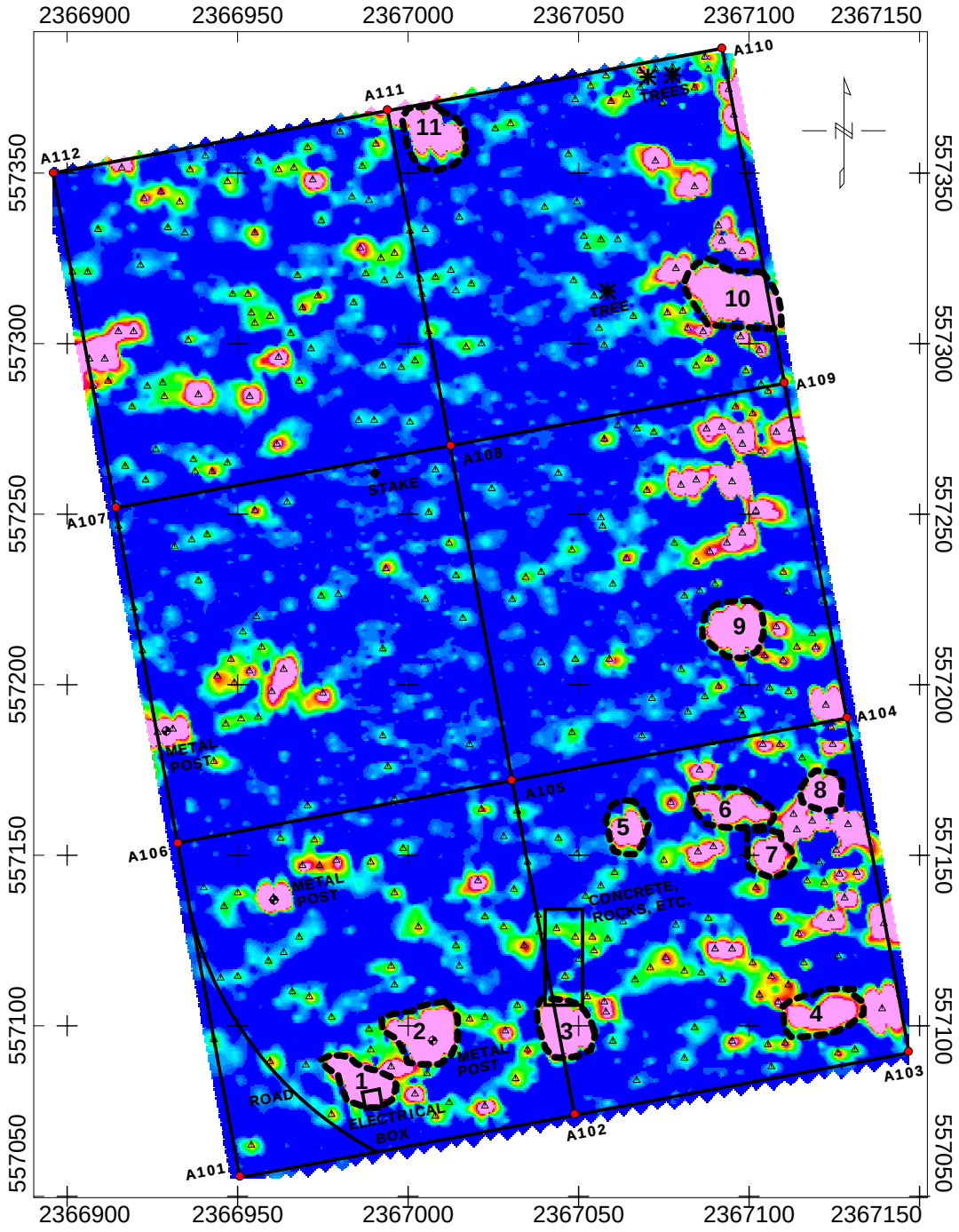
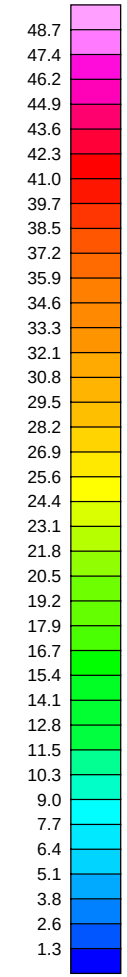




Legend

- EM61 Anomalies ≥ 10 mV
- EM61 Anomalies Selected for Further Investigation

Scale 1:600

25 0 25 50 75

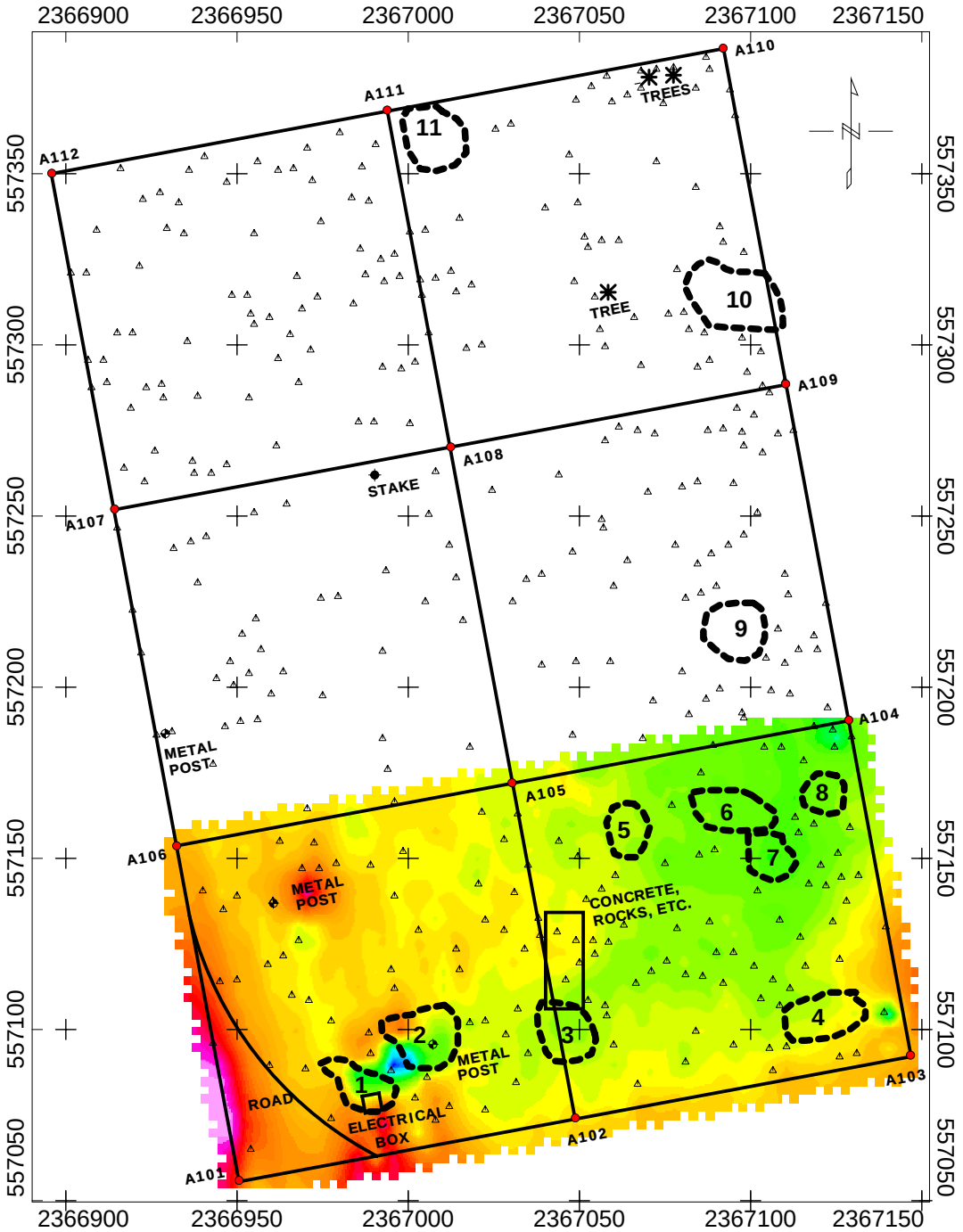
US survey foot

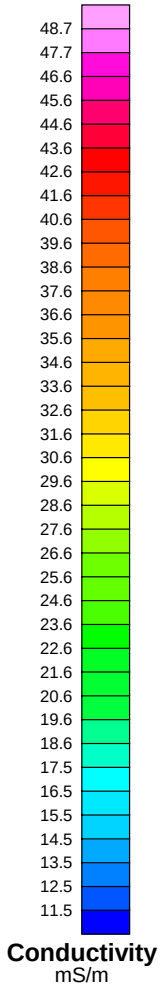
NAD83(CSRS98) / Ohio CS83 North zone

Figure 3-1
Ravenna Army Ammunition Plant
Atlas Scrap Yard
Site 1

EM61 Results
Channel 1
10/19/2004

MKM Engineers, Inc.
4153 Bluebonnet Drive
Stafford, Texas 77077





Legend

- EM61 Anomalies ≥ 10 mV
- EM61 Anomalies Selected for Further Investigation

Scale 1:600

25 0 25 50 75

US survey foot

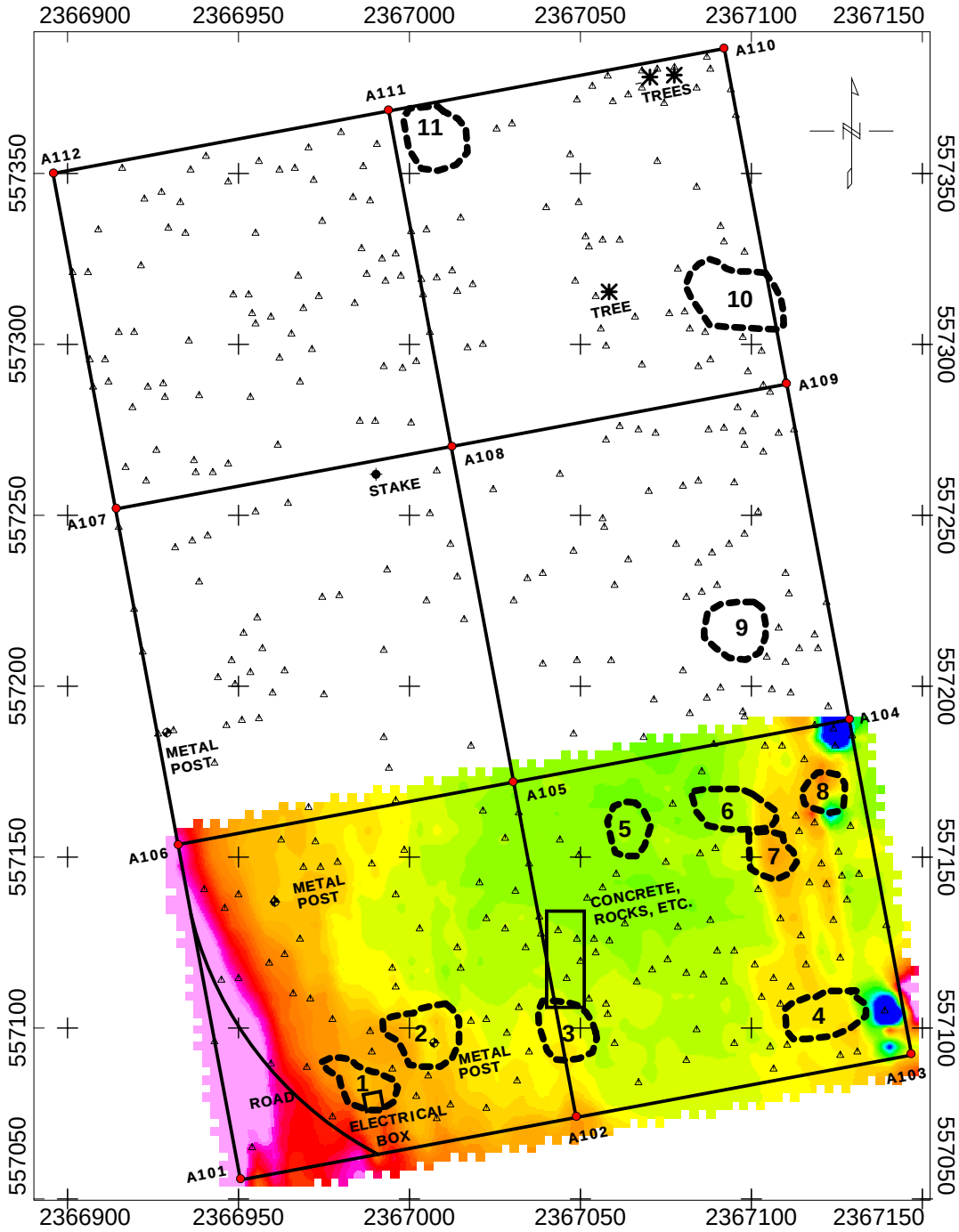
NAD83(CSRS98) / Ohio CS83 North zone

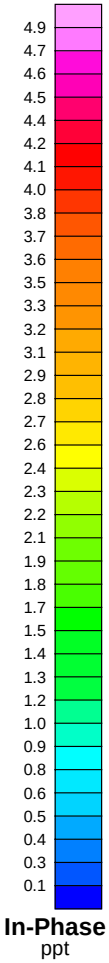
Figure 3-2
Ravenna Army Ammunition Plant
Atlas Scrap Yard
Site 1

EM31 Results
Conductivity

10/19/2004

MKM Engineers, Inc.
4153 Bluebonnet Drive
Stafford, Texas 77077





Legend

- EM61 Anomalies ≥ 10 mV
- EM61 Anomalies Selected for Further Investigation

Scale 1:600

25 0 25 50 75

US survey foot

NAD83(CSRS98) / Ohio CS83 North zone

Figure 3-3
Ravenna Army Ammunition Plant
Atlas Scrap Yard
Site 1

EM31 Results
In-Phase

10/19/2004

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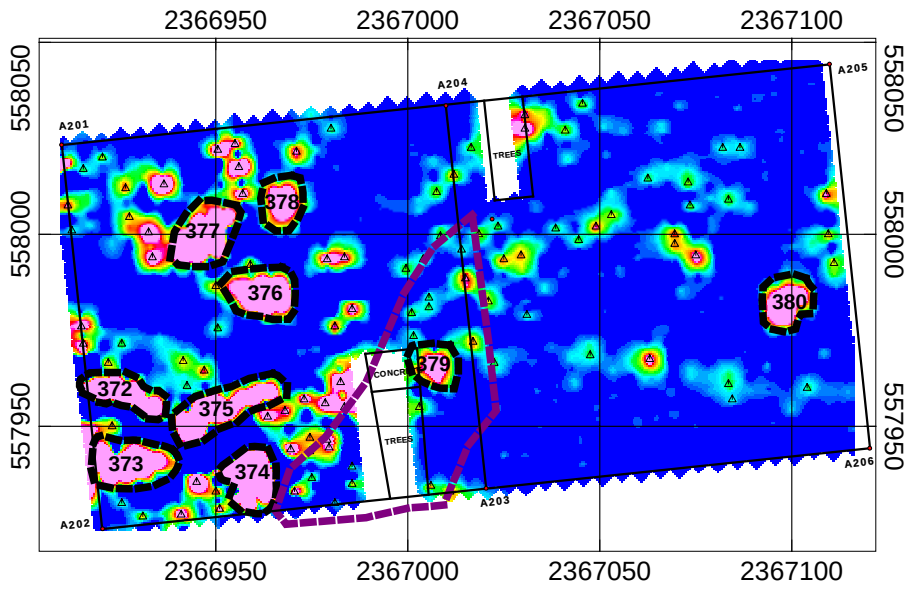
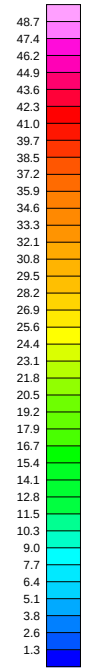
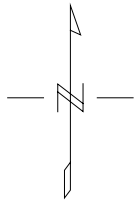
Stafford, Texas 77077

MKM







Legend

- EM61 Anomalies ≥ 10 mV
- EM61 Anomalies Selected for Further Investigation
- EM31 Anomaly

Scale 1:600

25 0 25 50 75

US survey foot

NAD83(CSRS98) / Ohio CS83 North zone

Figure 3-4

Ravenna Army Ammunition Plant
Atlas Scrap Yard
Site 2

EM61 Results
Channel 1

10/19/2004

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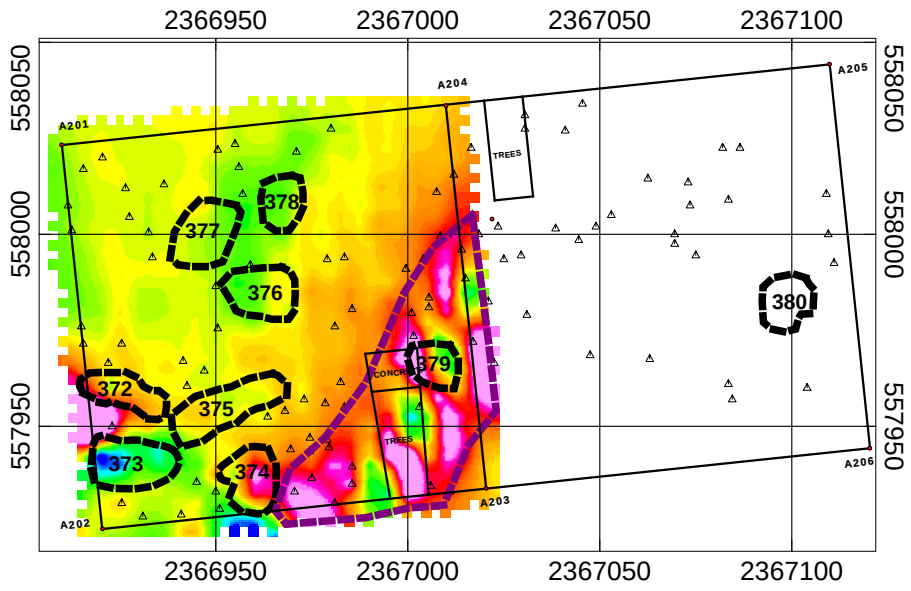
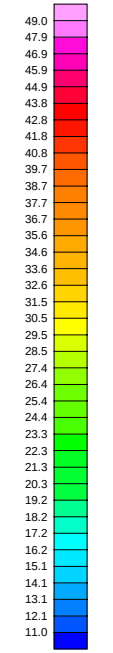
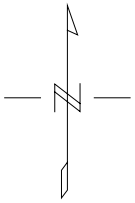
MKM







Legend

- EM61 Anomalies ≥ 10 mV
- EM61 Anomalies Selected for Further Investigation
- EM31 Anomaly

Scale 1:600

25 0 25 50 75

US survey foot

NAD83(CSRS98) / Ohio CS83 North zone

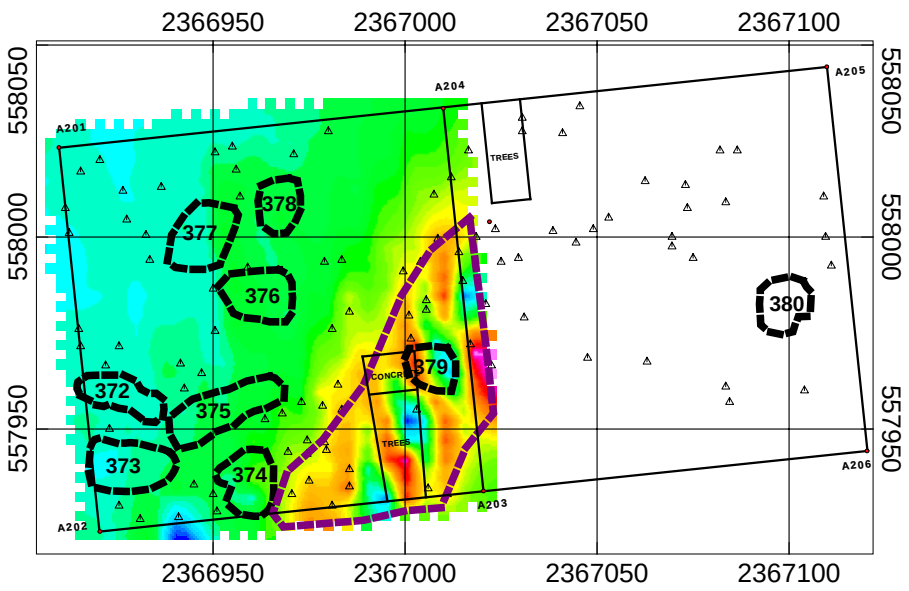
Figure 3-5
Ravenna Army Ammunition Plant
Atlas Scrap Yard
Site 2

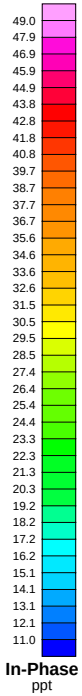
EM31 Results
Conductivity

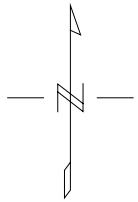
10/19/2004

MKM Engineers, Inc.
4153 Bluebonnet Drive,
Stafford, Texas 77077

MKM







Legend

- EM61 Anomalies ≥ 10 mV
- EM61 Anomalies Selected for Further Investigation
- EM31 Anomaly

Scale 1:600

25 0 25 50 75

US survey foot

NAD83(CSRS98) / Ohio CS83 North zone

Figure 3-6
Ravenna Army Ammunition Plant
Atlas Scrap Yard
Site 2

EM31 Results
In-Phase

10/19/2004

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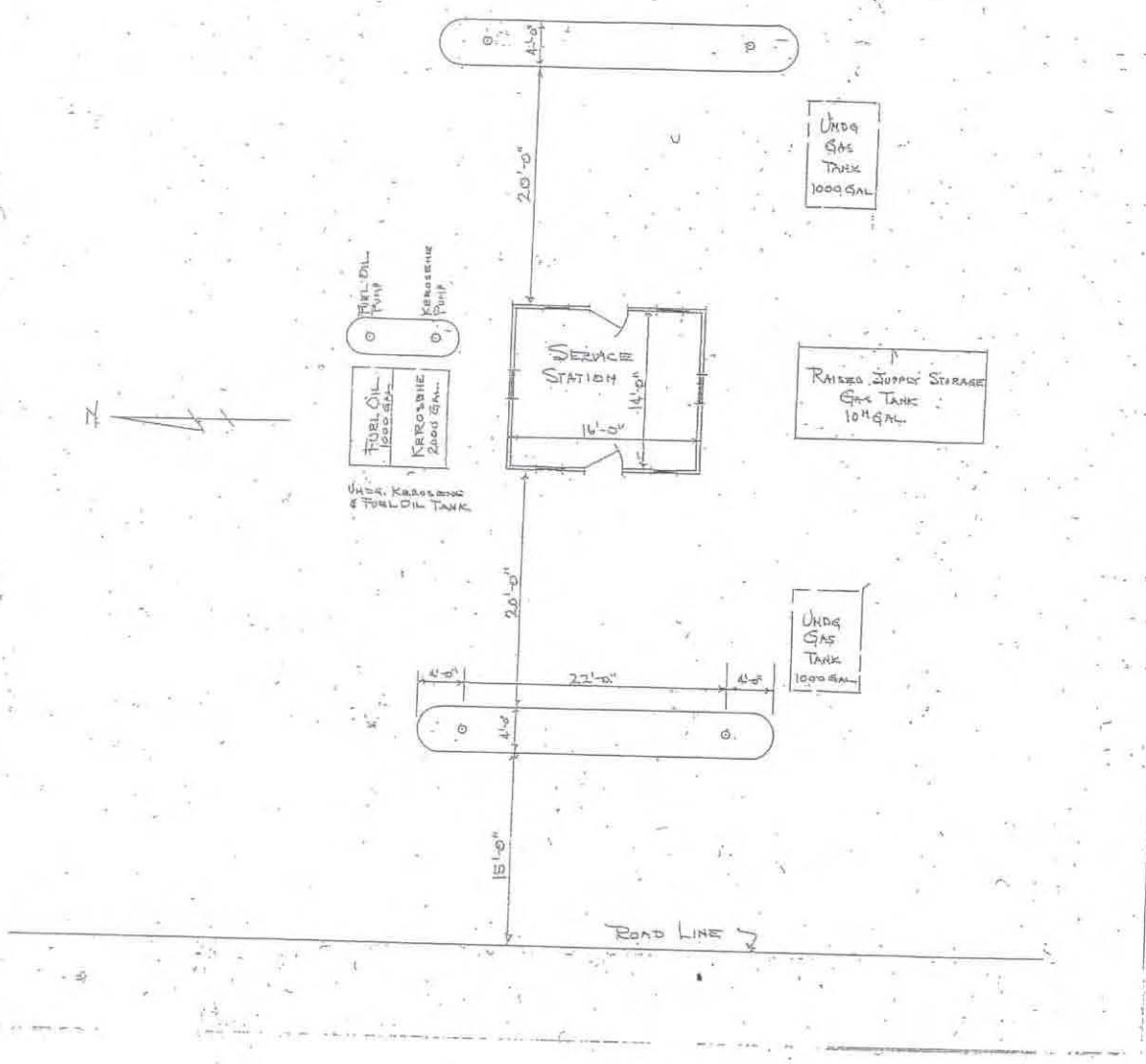
4153 Bluebonnet Drive,
Stafford, Texas 77077

MKM



Scale 1/16" = 1'0"

Figure 7A: Underground Storage Tanks Associated with Service Stations at the Atlas Scrap Yard

Appendix C
Atlas Scrap Yard
Grid Coordinates

Point ID	*Easting (survey feet)	*Northing (survey feet)	*Elevation (survey feet)	Description
NAVD88	2367417.83	555004.36	983.84	GPS Base Station
A101	2366950.59	557055.52	980.37	Site 1
A102	2367048.62	557073.70	980.07	Site 1
A103	2367146.38	557091.85	979.57	Site 1
A104	2367128.73	557189.83	979.45	Site 1
A105	2367030.49	557171.92	979.33	Site 1
A106	2366932.65	557153.79	980.72	Site 1
A107	2366914.35	557251.97	980.28	Site 1
A108	2367012.35	557270.27	979.42	Site 1
A109	2367110.35	557287.88	979.61	Site 1
A110	2367092.43	557386.48	979.50	Site 1
A111	2366993.71	557368.18	979.78	Site 1
A112	2366897.04	557350.22	981.31	Site 1
A201	2366909.90	558023.25	980.88	Site 2
A202	2366921.13	557923.34	988.87	Site 2

*NAD83 Ohio North Zone, State Plane Coordinates

Appendix D
Atlas Scrap Yard
EM61 Anomalies ≥ 10mV

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
1	2366986.75	557083.98	659.0	Site 1
2	2367004.17	557097.45	790.9	Site 1
3	2367046.20	557097.91	563.0	Site 1
4	2367119.58	557103.02	138.0	Site 1
5	2367061.99	557156.90	278.4	Site 1
6	2367091.95	557163.40	293.3	Site 1
7	2367107.04	557150.63	193.2	Site 1
8	2367120.04	557169.21	1141.1	Site 1
9	2367097.98	557216.35	2220.5	Site 1
10	2367098.68	557313.65	800.0	Site 1
11	2367006.49	557363.81	1417.9	Site 1
12	2366954.00	557065.00	36.3	Site 1
13	2367008.00	557073.50	37.5	Site 1
14	2366977.50	557074.00	33.7	Site 1
15	2367022.50	557076.50	153.4	Site 1
16	2367012.00	557077.50	15.3	Site 1
17	2367002.00	557080.00	151.3	Site 1
18	2367067.00	557084.00	11.3	Site 1
19	2367031.50	557084.50	34.8	Site 1
20	2367005.50	557086.00	22.9	Site 1
21	2366995.00	557088.00	153.2	Site 1
22	2367106.50	557088.00	15.2	Site 1
23	2366970.00	557088.50	10.7	Site 1
24	2366959.50	557089.50	40.0	Site 1
25	2367081.00	557090.50	15.4	Site 1
26	2367126.00	557092.00	56.0	Site 1
27	2366989.00	557093.00	27.0	Site 1
28	2367035.00	557093.00	45.0	Site 1
29	2367131.00	557093.00	24.1	Site 1
30	2367105.50	557094.50	44.2	Site 1
31	2367110.50	557095.00	55.0	Site 1
32	2367060.00	557095.50	13.1	Site 1
33	2367095.00	557095.50	75.1	Site 1
34	2366943.00	557096.00	15.5	Site 1
35	2367028.50	557098.50	95.8	Site 1
36	2366988.50	557099.00	15.8	Site 1
37	2367084.00	557099.50	15.3	Site 1
38	2367018.00	557102.00	34.3	Site 1
39	2366977.50	557102.50	23.3	Site 1
40	2367022.50	557102.50	19.6	Site 1
41	2367058.00	557104.00	92.6	Site 1
42	2367139.00	557105.00	4230.0	Site 1
43	2367032.00	557106.00	23.0	Site 1
44	2367057.50	557107.00	89.1	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
45	2367108.50	557107.00	61.6	Site 1
46	2366971.00	557108.50	33.1	Site 1
47	2367052.50	557108.50	28.2	Site 1
48	2367103.00	557109.00	39.0	Site 1
49	2366966.00	557110.00	17.8	Site 1
50	2366996.00	557112.00	12.2	Site 1
51	2367111.50	557112.00	42.7	Site 1
52	2367066.50	557113.50	18.0	Site 1
53	2367092.00	557113.50	19.9	Site 1
54	2366945.00	557114.00	11.8	Site 1
55	2366950.00	557114.50	16.1	Site 1
56	2367046.00	557114.50	31.4	Site 1
57	2367106.50	557114.50	54.8	Site 1
58	2367086.00	557115.50	13.9	Site 1
59	2367081.00	557116.00	25.8	Site 1
60	2367071.00	557117.00	32.0	Site 1
61	2366995.00	557117.50	35.5	Site 1
62	2367015.00	557117.50	12.0	Site 1
63	2367101.00	557118.50	38.1	Site 1
64	2367116.00	557118.50	33.4	Site 1
65	2366959.00	557119.00	14.6	Site 1
66	2367050.00	557119.50	14.6	Site 1
67	2367075.50	557120.00	51.9	Site 1
68	2367126.00	557120.50	13.1	Site 1
69	2366963.50	557121.50	10.2	Site 1
70	2367054.50	557122.00	30.7	Site 1
71	2367090.00	557122.50	163.5	Site 1
72	2367095.00	557122.50	133.9	Site 1
73	2367014.00	557123.50	17.0	Site 1
74	2367034.00	557123.50	50.7	Site 1
75	2367058.50	557125.50	14.5	Site 1
76	2366968.00	557126.00	12.6	Site 1
77	2367049.00	557126.00	25.2	Site 1
78	2367054.00	557126.00	37.1	Site 1
79	2367114.50	557127.00	70.3	Site 1
80	2367038.50	557127.50	17.3	Site 1
81	2367043.50	557128.50	34.5	Site 1
82	2367003.00	557129.00	35.7	Site 1
83	2367028.00	557129.00	26.5	Site 1
84	2367078.50	557129.50	10.0	Site 1
85	2367139.50	557130.00	389.5	Site 1
86	2367063.00	557130.50	13.0	Site 1
87	2367088.00	557131.50	20.6	Site 1
88	2367124.00	557131.50	278.4	Site 1
89	2367022.50	557132.00	20.7	Site 1
90	2367108.50	557132.00	62.7	Site 1
91	2367038.00	557132.50	20.7	Site 1
92	2366946.00	557135.00	16.9	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
93	2366960.50	557137.50	2464.0	Site 1
94	2367128.00	557137.50	283.0	Site 1
95	2367052.00	557138.00	14.9	Site 1
96	2366950.00	557139.00	30.6	Site 1
97	2366996.00	557139.00	37.2	Site 1
98	2367031.00	557140.00	20.4	Site 1
99	2366940.00	557140.50	10.2	Site 1
100	2367102.00	557140.50	50.4	Site 1
101	2367056.50	557141.00	13.8	Site 1
102	2367122.00	557142.00	29.9	Site 1
103	2367020.50	557142.50	122.2	Site 1
104	2367117.00	557142.50	26.8	Site 1
105	2367126.50	557144.50	130.6	Site 1
106	2367060.50	557145.00	20.2	Site 1
107	2367131.50	557145.00	97.0	Site 1
108	2366969.00	557147.00	94.9	Site 1
109	2366974.00	557147.00	48.0	Site 1
110	2366989.00	557148.00	33.9	Site 1
111	2367035.00	557148.00	12.1	Site 1
112	2367120.50	557148.00	11.9	Site 1
113	2366979.00	557148.50	70.9	Site 1
114	2367075.00	557148.50	29.4	Site 1
115	2367049.50	557150.50	10.0	Site 1
116	2367085.00	557151.00	202.7	Site 1
117	2367125.50	557151.50	82.7	Site 1
118	2366998.50	557152.00	23.3	Site 1
119	2367089.50	557152.50	165.7	Site 1
120	2366972.50	557154.50	38.3	Site 1
121	2366962.50	557155.00	29.0	Site 1
122	2367044.00	557155.00	16.2	Site 1
123	2367028.00	557155.50	10.2	Site 1
124	2367114.00	557157.50	523.9	Site 1
125	2367129.00	557159.00	691.0	Site 1
126	2367118.50	557160.00	248.8	Site 1
127	2367113.00	557162.00	123.0	Site 1
128	2367032.00	557163.00	26.2	Site 1
129	2367021.50	557163.50	55.0	Site 1
130	2366970.50	557164.50	10.9	Site 1
131	2367077.00	557165.50	63.9	Site 1
132	2366996.00	557166.50	15.3	Site 1
133	2367085.50	557175.00	240.2	Site 1
134	2366994.00	557176.00	23.4	Site 1
135	2366943.00	557177.50	42.5	Site 1
136	2367115.50	557178.50	16.3	Site 1
137	2367018.00	557182.50	11.6	Site 1
138	2367104.00	557182.50	107.4	Site 1
139	2367109.00	557182.50	69.1	Site 1
140	2367124.50	557182.50	251.2	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
141	2367089.00	557183.00	25.8	Site 1
142	2366992.50	557185.00	11.5	Site 1
143	2367068.50	557185.00	13.2	Site 1
144	2367129.50	557185.50	14.9	Site 1
145	2366926.50	557186.00	661.0	Site 1
146	2367048.00	557186.00	18.0	Site 1
147	2366931.00	557187.00	492.8	Site 1
148	2367124.00	557187.50	73.2	Site 1
149	2366946.50	557188.50	21.6	Site 1
150	2367118.50	557188.50	41.3	Site 1
151	2366951.00	557190.00	29.7	Site 1
152	2366956.00	557190.50	18.9	Site 1
153	2367098.00	557191.00	13.3	Site 1
154	2367082.00	557192.00	12.8	Site 1
155	2367097.50	557192.50	14.7	Site 1
156	2367122.50	557194.00	1643.7	Site 1
157	2367071.50	557196.00	11.5	Site 1
158	2367087.00	557196.50	11.9	Site 1
159	2366975.00	557197.50	89.0	Site 1
160	2366960.00	557198.00	64.3	Site 1
161	2367111.50	557198.00	32.4	Site 1
162	2367106.00	557199.00	19.2	Site 1
163	2367091.00	557199.50	52.9	Site 1
164	2366949.00	557200.50	32.9	Site 1
165	2366944.00	557202.50	49.3	Site 1
166	2366953.50	557204.00	75.4	Site 1
167	2366963.50	557204.50	157.5	Site 1
168	2367080.00	557204.50	19.5	Site 1
169	2367039.00	557206.50	11.7	Site 1
170	2367110.00	557207.00	62.7	Site 1
171	2366948.00	557207.50	34.5	Site 1
172	2367049.00	557207.50	20.8	Site 1
173	2367059.00	557207.50	74.4	Site 1
174	2367104.50	557208.50	53.4	Site 1
175	2366922.00	557210.00	14.3	Site 1
176	2366992.50	557210.50	16.5	Site 1
177	2366957.00	557211.00	30.5	Site 1
178	2367114.00	557211.00	39.6	Site 1
179	2367119.50	557211.00	61.6	Site 1
180	2367118.50	557215.00	17.8	Site 1
181	2366951.50	557215.50	13.7	Site 1
182	2367108.00	557217.00	103.3	Site 1
183	2367016.00	557219.50	12.0	Site 1
184	2366955.50	557220.00	11.2	Site 1
185	2366919.50	557222.50	16.2	Site 1
186	2367122.00	557224.50	12.1	Site 1
187	2367005.00	557225.00	16.1	Site 1
188	2367030.50	557225.00	17.8	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
189	2366974.50	557226.00	17.0	Site 1
190	2367081.00	557226.00	18.2	Site 1
191	2366979.50	557226.50	11.8	Site 1
192	2367111.00	557227.00	11.3	Site 1
193	2367085.50	557227.50	10.5	Site 1
194	2367060.00	557229.50	12.0	Site 1
195	2367090.00	557229.50	23.4	Site 1
196	2366938.50	557230.50	17.4	Site 1
197	2367034.50	557231.50	31.6	Site 1
198	2367014.00	557232.00	13.2	Site 1
199	2367039.00	557233.00	13.9	Site 1
200	2367110.00	557233.00	40.5	Site 1
201	2366993.50	557234.00	61.3	Site 1
202	2367084.50	557236.00	33.5	Site 1
203	2367064.00	557237.00	52.8	Site 1
204	2367088.50	557239.00	72.1	Site 1
205	2367048.00	557239.50	27.7	Site 1
206	2366931.50	557240.50	16.2	Site 1
207	2367012.00	557241.50	26.9	Site 1
208	2367078.00	557241.50	17.7	Site 1
209	2367093.50	557241.50	125.8	Site 1
210	2366936.50	557242.50	10.4	Site 1
211	2366941.00	557244.00	17.2	Site 1
212	2367098.00	557244.50	264.9	Site 1
213	2366915.00	557246.50	12.2	Site 1
214	2367057.00	557246.50	12.6	Site 1
215	2367056.50	557249.00	11.7	Site 1
216	2367006.00	557250.50	18.0	Site 1
217	2366955.00	557251.00	55.3	Site 1
218	2367102.00	557251.00	199.8	Site 1
219	2366964.50	557253.50	14.2	Site 1
220	2367070.00	557257.00	37.0	Site 1
221	2367024.50	557257.50	11.6	Site 1
222	2367080.00	557258.50	355.9	Site 1
223	2367095.00	557259.50	1992.0	Site 1
224	2366923.00	557260.00	13.7	Site 1
225	2367084.50	557260.00	219.9	Site 1
226	2367044.00	557262.00	13.1	Site 1
227	2366937.50	557262.50	29.5	Site 1
228	2366942.50	557262.50	51.4	Site 1
229	2367008.00	557263.00	10.2	Site 1
230	2366917.00	557264.00	16.6	Site 1
231	2366947.00	557265.00	15.1	Site 1
232	2366937.00	557266.00	13.8	Site 1
233	2367103.50	557268.50	98.5	Site 1
234	2366926.00	557269.00	13.6	Site 1
235	2366961.50	557270.50	77.8	Site 1
236	2367098.00	557270.50	151.3	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
237	2367057.50	557272.00	45.1	Site 1
238	2367072.00	557274.00	22.6	Site 1
239	2367108.00	557274.00	123.6	Site 1
240	2367097.50	557274.50	214.7	Site 1
241	2367067.00	557275.00	21.9	Site 1
242	2367087.50	557275.00	106.4	Site 1
243	2367112.50	557275.00	214.4	Site 1
244	2367092.00	557275.50	134.6	Site 1
245	2367061.50	557276.00	11.2	Site 1
246	2367000.50	557277.00	13.2	Site 1
247	2366985.50	557277.50	12.8	Site 1
248	2366990.00	557277.50	10.7	Site 1
249	2367101.00	557279.50	40.7	Site 1
250	2366919.00	557281.50	18.6	Site 1
251	2367096.00	557281.50	50.6	Site 1
252	2366928.50	557284.50	25.3	Site 1
253	2366953.50	557284.50	127.2	Site 1
254	2366938.50	557285.00	245.3	Site 1
255	2367105.50	557286.00	79.2	Site 1
256	2366907.50	557287.50	65.5	Site 1
257	2366923.50	557287.50	10.5	Site 1
258	2367103.50	557288.00	11.9	Site 1
259	2366928.00	557288.50	15.6	Site 1
260	2366912.00	557289.00	44.6	Site 1
261	2366968.00	557289.00	23.5	Site 1
262	2367110.00	557289.50	47.8	Site 1
263	2367099.00	557292.00	35.9	Site 1
264	2366998.00	557293.00	12.9	Site 1
265	2366992.50	557293.50	11.1	Site 1
266	2367084.50	557293.50	22.4	Site 1
267	2367068.00	557294.00	13.8	Site 1
268	2367002.00	557295.00	19.9	Site 1
269	2366906.50	557295.50	103.6	Site 1
270	2366911.00	557295.50	195.7	Site 1
271	2367088.00	557295.50	51.4	Site 1
272	2366962.00	557296.00	114.0	Site 1
273	2367103.00	557298.00	90.7	Site 1
274	2366971.50	557298.50	12.9	Site 1
275	2367017.00	557299.00	26.8	Site 1
276	2367057.50	557299.50	11.8	Site 1
277	2367021.50	557300.00	12.4	Site 1
278	2366935.50	557301.00	30.7	Site 1
279	2367097.50	557302.00	171.0	Site 1
280	2366965.50	557303.00	16.6	Site 1
281	2366915.00	557303.50	71.9	Site 1
282	2366919.50	557303.50	71.4	Site 1
283	2367006.00	557303.50	30.1	Site 1
284	2367086.50	557303.50	103.6	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
285	2367056.00	557304.50	11.9	Site 1
286	2367082.00	557304.50	56.0	Site 1
287	2366955.00	557306.00	26.2	Site 1
288	2366959.50	557308.00	30.5	Site 1
289	2367066.00	557308.00	14.2	Site 1
290	2366954.00	557309.00	23.6	Site 1
291	2367076.00	557309.00	33.7	Site 1
292	2367080.50	557309.50	31.8	Site 1
293	2366969.00	557310.50	46.8	Site 1
294	2366984.00	557312.00	14.1	Site 1
295	2366973.50	557314.00	51.5	Site 1
296	2367054.50	557314.00	14.7	Site 1
297	2366948.50	557314.50	13.7	Site 1
298	2366953.00	557314.50	41.9	Site 1
299	2367004.00	557314.50	14.7	Site 1
300	2367014.00	557315.50	10.8	Site 1
301	2367018.50	557317.50	19.3	Site 1
302	2366993.00	557318.50	13.6	Site 1
303	2367048.50	557318.50	12.5	Site 1
304	2367003.50	557319.00	10.3	Site 1
305	2367008.00	557319.50	21.4	Site 1
306	2366967.50	557320.00	19.8	Site 1
307	2366997.50	557320.00	12.8	Site 1
308	2366987.50	557320.50	20.5	Site 1
309	2366901.50	557321.00	18.1	Site 1
310	2366906.00	557321.00	15.7	Site 1
311	2367012.50	557321.50	13.3	Site 1
312	2367078.50	557322.00	426.7	Site 1
313	2366921.50	557323.00	10.4	Site 1
314	2366992.00	557325.00	22.7	Site 1
315	2366996.00	557326.50	28.1	Site 1
316	2367098.00	557327.00	211.3	Site 1
317	2366986.00	557328.00	61.5	Site 1
318	2367052.50	557328.50	15.6	Site 1
319	2367092.00	557330.00	377.5	Site 1
320	2367056.50	557330.50	17.6	Site 1
321	2367061.50	557330.50	12.3	Site 1
322	2367051.50	557331.50	15.5	Site 1
323	2366934.50	557332.50	11.3	Site 1
324	2366955.00	557332.50	45.7	Site 1
325	2367000.50	557333.00	14.4	Site 1
326	2366909.00	557333.50	20.5	Site 1
327	2367005.00	557333.50	10.3	Site 1
328	2366929.50	557334.00	13.5	Site 1
329	2367091.00	557334.50	177.5	Site 1
330	2366974.50	557336.00	15.8	Site 1
331	2367015.00	557337.00	11.8	Site 1
332	2367040.00	557340.00	11.9	Site 1

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
333	2366933.00	557341.50	28.1	Site 1
334	2367049.50	557341.50	11.5	Site 1
335	2366988.50	557342.00	11.8	Site 1
336	2366922.50	557342.50	66.4	Site 1
337	2366983.50	557343.00	12.9	Site 1
338	2366927.50	557344.50	47.9	Site 1
339	2367084.00	557346.00	302.0	Site 1
340	2366947.00	557347.50	28.2	Site 1
341	2366972.00	557348.00	150.7	Site 1
342	2366936.00	557351.00	35.1	Site 1
343	2366962.00	557351.00	28.4	Site 1
344	2366916.00	557351.50	171.2	Site 1
345	2366966.50	557351.50	26.4	Site 1
346	2366986.50	557352.00	18.5	Site 1
347	2366956.00	557353.50	16.3	Site 1
348	2367072.50	557353.50	247.8	Site 1
349	2366940.50	557355.00	10.1	Site 1
350	2367047.00	557355.50	16.1	Site 1
351	2366970.50	557357.50	24.1	Site 1
352	2366990.50	557358.50	40.3	Site 1
353	2366980.00	557362.00	15.7	Site 1
354	2367025.50	557363.00	14.6	Site 1
355	2367030.00	557364.50	31.6	Site 1
356	2367095.50	557367.00	427.6	Site 1
357	2366999.00	557368.00	909.6	Site 1
358	2367074.50	557370.50	31.1	Site 1
359	2367059.50	557371.00	38.2	Site 1
360	2367049.00	557371.50	11.4	Site 1
361	2367064.00	557373.00	24.9	Site 1
362	2367094.00	557374.50	364.2	Site 1
363	2367068.00	557375.00	13.9	Site 1
364	2367084.00	557375.00	47.9	Site 1
365	2367053.50	557375.50	26.7	Site 1
366	2367058.00	557378.50	24.5	Site 1
367	2367068.00	557380.00	81.7	Site 1
368	2367072.50	557380.50	16.9	Site 1
369	2367088.00	557380.50	26.3	Site 1
370	2367077.50	557381.00	25.1	Site 1
371	2367087.00	557384.00	126.7	Site 1
372	2366923.80	557960.63	165.6	Site 2
373	2366928.51	557940.88	139.5	Site 2
374	2366959.13	557938.89	349.5	Site 2
375	2366948.08	557955.38	281.0	Site 2
376	2366964.39	557985.46	533.9	Site 2
377	2366945.36	557998.32	480.0	Site 2
378	2366967.29	558008.65	131.3	Site 2
379	2367006.07	557966.98	88.8	Site 2
380	2367097.21	557981.83	163.1	Site 2

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
381	2366931.00	557926.50	32.0	Site 2
382	2366941.00	557927.00	105.9	Site 2
383	2366951.00	557928.50	75.7	Site 2
384	2366925.50	557930.00	13.4	Site 2
385	2366981.00	557930.00	10.2	Site 2
386	2366950.00	557933.00	40.6	Site 2
387	2366970.50	557933.00	77.0	Site 2
388	2367011.00	557933.00	38.3	Site 2
389	2367006.00	557934.50	47.9	Site 2
390	2366985.50	557935.00	31.9	Site 2
391	2366945.00	557935.50	227.4	Site 2
392	2366975.00	557936.50	14.1	Site 2
393	2366985.50	557939.50	11.5	Site 2
394	2366974.50	557943.50	40.1	Site 2
395	2366969.50	557944.00	105.8	Site 2
396	2366979.50	557944.50	81.5	Site 2
397	2366979.00	557946.50	74.3	Site 2
398	2366974.50	557947.00	37.2	Site 2
399	2366923.00	557950.00	37.2	Site 2
400	2366963.50	557952.50	173.0	Site 2
401	2366968.00	557954.00	55.1	Site 2
402	2366983.50	557955.00	213.4	Site 2
403	2367003.00	557955.00	22.0	Site 2
404	2366978.50	557956.00	77.6	Site 2
405	2366973.00	557957.00	79.6	Site 2
406	2367084.50	557957.00	10.1	Site 2
407	2367104.00	557960.00	12.8	Site 2
408	2366942.50	557960.50	11.7	Site 2
409	2367083.50	557961.00	13.2	Site 2
410	2366982.50	557961.50	140.4	Site 2
411	2366947.00	557964.50	47.5	Site 2
412	2366922.00	557966.50	29.8	Site 2
413	2367022.50	557966.50	12.1	Site 2
414	2366941.50	557967.00	27.0	Site 2
415	2367063.00	557967.50	68.9	Site 2
416	2367047.50	557968.50	15.0	Site 2
417	2366915.50	557971.50	95.8	Site 2
418	2366925.50	557971.50	14.5	Site 2
419	2367017.00	557972.00	35.5	Site 2
420	2367001.50	557973.50	15.5	Site 2
421	2366950.50	557975.50	17.9	Site 2
422	2366915.00	557976.00	114.0	Site 2
423	2366981.00	557976.00	55.7	Site 2
424	2367031.00	557979.00	13.0	Site 2
425	2367001.00	557979.50	21.5	Site 2
426	2366985.50	557980.50	97.0	Site 2
427	2367005.50	557981.00	13.3	Site 2
428	2367021.00	557982.50	25.5	Site 2

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
429	2367005.50	557983.50	15.3	Site 2
430	2366950.00	557986.50	32.3	Site 2
431	2367015.00	557988.50	52.7	Site 2
432	2366999.50	557991.00	18.0	Site 2
433	2366959.00	557992.00	35.2	Site 2
434	2367111.00	557992.50	24.4	Site 2
435	2366979.00	557993.50	107.8	Site 2
436	2367004.00	557993.50	13.8	Site 2
437	2367025.00	557993.50	34.9	Site 2
438	2366933.50	557994.00	78.5	Site 2
439	2366983.50	557994.00	59.8	Site 2
440	2367029.50	557994.50	42.9	Site 2
441	2367075.00	557994.50	73.1	Site 2
442	2367014.00	557996.00	10.1	Site 2
443	2367069.50	557997.50	36.2	Site 2
444	2367044.50	557998.50	16.7	Site 2
445	2367008.50	557999.50	16.7	Site 2
446	2367018.50	558000.00	24.7	Site 2
447	2367069.50	558000.00	47.5	Site 2
448	2367109.50	558000.00	31.2	Site 2
449	2366932.50	558000.50	97.2	Site 2
450	2366912.50	558001.00	11.4	Site 2
451	2367038.50	558001.50	15.0	Site 2
452	2367023.50	558002.00	18.0	Site 2
453	2367049.00	558002.00	54.1	Site 2
454	2366927.50	558004.50	30.8	Site 2
455	2367053.00	558005.00	23.9	Site 2
456	2366911.50	558007.50	58.9	Site 2
457	2367073.50	558007.50	24.4	Site 2
458	2367083.50	558009.00	16.5	Site 2
459	2366957.00	558010.50	124.9	Site 2
460	2367109.00	558010.50	50.1	Site 2
461	2367007.50	558011.00	22.3	Site 2
462	2366926.50	558012.00	40.0	Site 2
463	2366936.50	558013.00	176.4	Site 2
464	2367073.00	558013.50	19.3	Site 2
465	2367062.50	558014.50	13.9	Site 2
466	2367012.00	558015.50	35.6	Site 2
467	2366915.50	558017.00	15.2	Site 2
468	2366956.00	558017.50	197.9	Site 2
469	2366920.50	558020.00	28.5	Site 2
470	2366971.00	558021.50	53.2	Site 2
471	2366950.50	558022.00	170.8	Site 2
472	2367016.50	558022.50	17.7	Site 2
473	2367082.00	558022.50	12.5	Site 2
474	2367086.50	558022.50	10.9	Site 2
475	2366955.00	558023.50	56.6	Site 2
476	2367041.00	558027.00	23.3	Site 2

Anomaly ID	*Easting (survey feet)	*Northing (survey feet)	Amplitude (mV)	Location
477	2366980.00	558027.50	12.9	Site 2
478	2367030.50	558027.50	94.2	Site 2
479	2367030.50	558031.00	67.1	Site 2
480	2367045.50	558034.00	25.1	Site 2

- Anomalies Selected for Further Investigation

Appendix U

IDW

General

McCUTCHEON Enterprises, Inc.
Complete Waste Management

McCutcheon Enterprises, Inc.
250 Park Road
Apollo, PA 15613
(724)568-3623 Fax (724)568-2571
www.completewastemgmt.com

NH034

Non Hazardous Waste Manifest

1. Generator's US EPA ID No. OHS210029733 Manifest Document No. 24122 2. Page 1 of 1

3. Generator's Name and Mailing Address
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266-8297

4. Generator's Phone (330) 358-7311

Non Hazardous Manifest Doc # MC 24122

B. State Generator's ID

5. Transporter 1 Company Name: McCutcheon Enterprises Inc. 6. US EPA ID Number: PAD013826842

C. State Trans. ID

7. Transporter 2 Company Name 8. US EPA ID Number

D. Transporter's Phone (724) 568-3623

E. State Trans. ID

9. Designated Facility Name and Site Address
McCutcheon Enterprises Biosolids Treatment Facility
250 Park Rd
Apollo, PA 15613
10. US EPA ID Number: PAD013826842

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone (724) 568-3623

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L Waste No.
a. Non Regulated Material (Soil)	1	CA	15 30	Y	None
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above	
a. 020905-00278	c.	a.	c.
b.	d.	b.	d.

15. Special Handling Instructions and Additional Information
Emergency phone 724-568-3623 24 hour

w/o 33883

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.

Printed/Typed Name	Signature	Month Day Year
IRVING VERNGER		02 28 05

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Lee Marshall	Lee Marshall	02 28 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

OR 2ND COPY

mkm

McCutcheon Enterprises, Inc.
250 Park Road
Apollo, PA 15613
(724)568-3623 Fax (724)568-2571
www.completewastemgmt.com

MEI McCUTCHEON Enterprises, Inc. Complete Waste Management

Non Hazardous Waste Manifest	1. Generator's US EPA ID No. OH5210020736 Manifest Document No. 84124	2. Page 1 of 1	NH021

3. Generator's Name and Mailing Address: Ravenna Army Ammunition Plant, 8451 State Route 5, Ravenna, OH 44266-9297	A. Non Hazardous Manifest Doc. # MC 84124
4. Generator's Phone (330) 358-7311	B. State Generator's ID
5. Transporter 1 Company Name: McCutcheon Enterprise Inc. — 6. US EPA ID Number: PAD013826847	C. State Trans. ID
	D. Transporter's Phone (724) 568-3623
7. Transporter 2 Company Name — 8. US EPA ID Number	E. State Trans. ID
9. Designated Facility Name and Site Address: McCutcheon Ent. BioSolids Treatment Facility, 250 Park Road, Apollo, PA 15613 — 10. US EPA ID Number: PAD013826847	F. Transporter's Phone ( )
	G. State Facility's ID
	H. Facility's Phone (724) 568-3623

	HM	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L Waste No.
a.		Non-Regulated Material (Soil)	1	CM	Est 18	Y	None
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above	
a. 020905-00778	c.	a.	c.
b.	d.	b.	d.

15. Special Handling Instructions and Additional Information
Emergency phone - 724-568-3623 24 hour
W/O 33884 RI 14 soil

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

X I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.

Printed/Typed Name	Signature	Month Day Year
Irving B. Venger	Irving Venger	02 28 05

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Lee Marshall	Leland Marshall	02 28 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR 2ND COPY

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

SEVERN TRENT **STL**

STL Chicago
2417 Bond St.
University Park, IL 60466
708-534-5200
Fax. 708-534-5211

Lab Lot # 233168

Report To:		Bill To:	
Contact:	Eric Ellis	Contact:	Eric Ellis
Company:	MKM Engineers, Inc.	Company:	MKM Engineers, Inc.
Address:	8451 State Route 5	Address:	8451 State Route 5
	Ravenna, OH 44266		Ravenna, OH 44266
Phone:	330-358-2920	Phone:	330-358-2920
Fax:	330-358-2924	Fax:	330-358-2924
Email:	eric.ellis@mkmengineers.com	PO #:	
		Quote #:	

Sampler Name:	Eric Ellis
Sampler Signature:	
Project Name:	Characterization of RVAAP 14 AOCs
Project Number:	04-02-0030
Project Location:	RVAAP - Ravenna, Ohio
Lab PM:	Nancy McDonald

Package Sealed: Yes No	Samples Sealed: Yes No		
Received on Ice: Yes No	Samples Intact: Yes No		
Temperature C of Cooler			
Within Hold Time: Yes No			
Preserv. Indicated: Yes No N/A			
pH Check OK: Yes No N/A			
Res Cl2 Check OK: Yes No N/A			
Sample Labels and COC Agree: Yes No COC not present			

Date Required		Rstrg #	
Hard Copy	21 Days	# / Cont.	
Fax/Email	14 Days	Volume	
		Preserv.	

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	VOC	SVOC	Explosives	TAL Metals	Nitroglycerin	Pest/PCBs	Nitrate	Cr+6	Total Susp. Solids (TSS)	TCLP % Solids	Additional Analyses / Remarks
1		LL5mw-001-GW	01-04-05	1115	W	G	x	x	x	x	x	x	x				
2		LL5mw-005-GW	01-04-05	0940	W	G	x	x	x	x		x	x				
3		LL5mw-004-ER	01-04-05	0840	W	G	x	x	x	x		x	x				
4		LL5mw-004-GW	01-04-05	1415	W	G	x	x	x	x		x	x				
5		LL5mw-004-DUP	01-04-05	1415	W	G	x	x	x	x		x	x				
5/1	x	LL5mw-004-MS/MSD	01-04-05	1415	W	G	x	x	x	x		x	x				
6		RVAAP14-001-WW	01-04-05	1330	W	G	x	x	x	x	x			x	x	x	Continued on next page... (Cr+6-hold time!)
7		RVAAP14-001-WD	01-04-05	1305	S	G			x		x			x			Continued on next page...
8		TRIP BLANK	Lab	Lab	W	G	x										Only 1 VOA Vial included

Relinquished by:	Company: MKM Engineers	Date: 1/4/-5	Time: 1630	Received By:	Company: STL North Canton (Courier) Date: Time:
Relinquished by:	Company: STL North Canton (Courier)	Date:	Time:	Received By:	Company: Fed Ex Date: Time:
Relinquished by:	Company: FedEx	Date:	Time:	Received By:	Company: SR Date: 1-5-05 Time: 1035

Matrix Key
W - Water, S - Soil, SL - Sludge, SO - Solid, WW - Wastewater, SE - Sediment, L - Leachate, M - Miscellaneous, DL - Drum Liquid, DS - Drum Solid, W - Wipe, A Air, OL - Oil, O _____

Comments:
Please call if sediment quantity is not sufficient - (limited by sediment supply)

Date Received	
Courier:	
Hand Delivered:	
Bill of Lading:	

SEVERN TRENT **STL**

Lab Lot # 233168

20

STL Chicago
2417 Bond St.
University Park, IL 60466
708-534-5200
Fax, 708-534-5211

Report To:		Bill To:	
Contact:	Eric Ellis	Contact:	Eric Ellis
Company:	MKM Engineers, Inc.	Company:	MKM Engineers, Inc.
Address:	8451 State Route 5	Address:	8451 State Route 5
	Ravenna, OH 44266		Ravenna, OH 44266
Phone:	330-358-2920	Phone:	330-358-2920
Fax:	330-358-2924	Fax:	330-358-2924
Email:	eric.ellis@mkmengineers.com	PO #:	
		Quote #:	

Sampler Name:	Eric Ellis
Sampler Signature:	[signature]
Project Name:	Characterization of RVAAP 14 AOCs
Project Number:	04-02-0030
Project Location:	RVAAP - Ravenna, Ohio
Lab PM:	Nancy McDonald

Package Sealed Yes No	Samples Sealed Yes No
Received on Ice Yes No	Samples Intact Yes No
Temperature C of Cooler	
Within Hold Time Yes No	
Preserv. Indicated Yes No N/A	
pH Check OK Yes No N/A	
Res CL2 Check OK Yes No N/A	
Sample Labels and COC Agree Yes No COC not present	

Date Required		Refrig #
Hard Copy	21 Days	# / Cont.
Fax/Email	14 Days	Volume
		Preserv.

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	TPH GRO (8015)	TPH DRO (8015)	Reactive CN & Sulfide	Reactivity	Corrosivity	Ignitability	Full TCLP (Metals, Pesticides, SVOC, VOC)	Pesticides	PCBs	Additional Analyses / Remarks
6		RVAAP14-001-WW	01-04-05	1330	W	G	x	x	x		x	x	x	x	x	Waste Characterization
7		RVAAP14-001-WD	01-04-05	1305	S	G	x	x		x	x	x	x		x	Waste Characterization

Relinquished by:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:
[signature]	MKM Engineers	1/4/05	1630		STL North Canton (Courier)		
	STL North Canton (Courier)				Fed Ex		
	FedEx			[signature]	STL	1-5-05	1035

Matrix Key
W - Water
S - Soil
SL - Sludge
SO - Solid
WW - Wastewater
SE - Sediment
L - Leachate
M - Miscellaneous
DL - Drum Liquid
DS - Drum Solid
W - Wipe
A - Air
OL - Oil
O ______

Comments:

Date Received
Courier:
Hand Delivered:
Bill of Lading:

STL Chicago is part of Severn Trent Laboratories, Inc.

STL Chicago

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 233168 Location.: 57222 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 01/05/2005 Date of the Report..: 01/18/2005
Project Number.: 20004694 Project Description.: USACE RVAAP 14 AOCS Project Manager.....: nsm
Customer.....: MKM Engineers, Inc. Contact.: Eric Ellis

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?.....	Y	
Were samples dropped off at or picked up by STL?..	N	
Custody seal on shipping container?.....	Y	
...If "yes", custody seal intact?.....	Y	
Custody seals on sample containers?.....	N	
...If "yes", custody seal intact?.....		
Samples iced?.....	Y	
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	3.6,2.8,3.0,2.6,2.0,2.4,2.8
Samples received intact (good condition)?.....	Y	
Volatile samples acceptable? (no headspace).....	Y	
Correct containers used?.....	Y	
Adequate sample volume provided?.....	Y	
Samples preserved correctly?.....	Y	
Samples received within holding-time?.....	Y	
Agreement between COC and sample labels?.....	Y	
Radioactivity at or below background levels?.....	Y	
A Sample Discrepancy Report (SDR) was needed?.....	N	
If samples were shipped was there an air bill #?..	Y	
Sample Custodian Signature/Date.....	Y	

Page 1

G5A140208

STL

Page 1 of 1

Report To:

Contact:	Eric Ellis
Company:	MKM Engineers, Inc.
Address:	8451 State Route 5
	Ravenna, OH 44266
Phone:	330-358-2920
Fax:	330-358-2924
Email:	eric.ellis@mkmengineers.com

Bill To:

Contact:	Eric Ellis
Company:	MKM Engineers, Inc.
Address:	8451 State Route 5
	Ravenna, OH 44266
Phone:	330-358-2920
Fax:	330-358-2924
PO #:	
Quote #:	

Lab Lot #

STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
(910) 373-5600
Fax. (916) 372-1059

Sampler Name:	Eric Ellis
Sampler Signature:	
Project Name:	Characterization of RVAAP 14 AOCs
Project Number:	04-02-0030
Project Location:	RVAAP - Ravenna, Ohio
Lab PM:	Robert Hbarak

Package Sealed	Yes No	Samples Sealed	Yes No
Received on Ice	Yes No	Samples Intact	Yes No
Temperature C of Cooler			
Within Hold Time	Yes No		
Preserv. Indicated	Yes No N/A		
pH Check OK	Yes No N/A		
Res Cl2 Check OK	Yes No N/A		
Sample Labels and COC Agree	Yes No COC not present		

Date Required		Refrig #
Hard Copy	21 Days	# / Cont.
Fax/Email	14 Days	Volume
		Preserv.

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	Preservants (Nitroguanidine/ Nitrocellulose)	Additional Analyses / Remarks
		LL5mw-001-GW	01-04-05	1115	W	G	x	
		RVAAP14-001-WW	01-04-05	1330	W	Co	x	Waste Characterization
		RVAAP14-001-WD	01-04-05	1305	S	Co	x	Waste Characterization

RECEIVED IN GOOD CONDITION UNDER COC
JAN 05 2005
INI Co

	Company:	Date:	Time:	Received By:	Company:	Date:	Time:
Relinquished by:	MKM Engineers	1/4/05	1630		STL North Canton (Courier)		
Relinquished by:	STL North Canton (Courier)			Received By:	Fed Ex		
Relinquished by:	FedEx			Received By:	STL SAC	1-5-05	0810

Matrix Key
W - Water, WW - Wastewater, DL - Drum Liquid, A Air
S - Soil, SE - Sediment, DS - Drum Solid, OL - Oil
SL - Sludge, L - Leachate, W - Wipe, O _____
SO - Solid, M - Miscellaneous

Comments:

Date Received
Courier:
Hand Delivered:
Bill of Lading:

STL Chicago is part of Severn Trent Laboratories, Inc.

Samples are composites and not grab samples per Eric Ellis (MKM) 1/7/05

SEVERN TRENT STL

LOT RECEIPT CHECKLIST
STL Sacramento

CLIENT STL-CHICAGO PM RH LOG # 303066

LOT# (QUANTIMS ID) ~~G5A050217~~ G5A140208 RH 1/14/05 QUOTE# 60857 LOCATION W21B

DATE RECEIVED 1-5-05 TIME RECEIVED 0930

	Initials	Date
	GC	1-5-05

DELIVERED BY ☒ FEDEX ☐ CA OVERNIGHT ☐ CLIENT
☐ AIRBORNE ☐ GOLDENSTATE ☐ DHL
☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS
☐ STL COURIER ☐ COURIERS ON DEMAND
☐ OTHER

CUSTODY SEAL STATUS ☒ INTACT ☐ BROKEN ☐ N/A

CUSTODY SEAL #(S) 615266, 615276

SHIPPPING CONTAINER(S) ☐ STL ☒ CLIENT ☐ N/A

TEMPERTURE RECORD (IN °C) IR 1☐ 3☒ ☐ OTHER

COC #(S) N/A

TEMPERATURE BLANK N/A

SAMPLE TEMPERATURE 5°C

COLLECTOR'S NAME: ☒ Verified from COC ☐ Not on COC

pH MEASURED ☐ YES ☐ ANOMALY ☒ N/A

LABELED BY.....

LABELS CHECKED BY.....

PEER REVIEW ☒ NA

SHORT HOLD TEST NOTIFICATION

SAMPLE RECEIVING
WETCHEM ☒ N/A
VOA-ENCORES ☒ N/A

☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL ☒ N/A

☒ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES ☐ N/A

☐ Clouseau ☐ TEMPERATURE EXCEEDED (2 °C - 6 °C)*1 ☒ N/A

☐ WET ICE ☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is ≤4°C.

RVAAP 14 - IDW Soil

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LABORATORY TEST RESULTS

Job Number: 233168

Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WD
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 233168-7
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8082	PCB Analysis											
	Aroclor 1016, 3541 Solid*	42	U		11	42	1.00000	ug/Kg	139333		01/10/05 1636	bjt
	Aroclor 1221, 3541 Solid*	42	U		5.9	42	1.00000	ug/Kg	139333		01/10/05 1636	bjt
	Aroclor 1232, 3541 Solid*	21	U		5.8	21	1.00000	ug/Kg	139333		01/10/05 1636	bjt
	Aroclor 1242, 3541 Solid*	42	U		6.3	42	1.00000	ug/Kg	139333		01/10/05 1636	bjt
	Aroclor 1248, 3541 Solid*	21	U		4.7	21	1.00000	ug/Kg	139333		01/10/05 1636	bjt
	Aroclor 1254, 3541 Solid*	42	U		5.8	42	1.00000	ug/Kg	139333		01/10/05 1636	bjt
	Aroclor 1260, 3541 Solid*	42	U		16	42	1.00000	ug/Kg	139333		01/10/05 1636	bjt
8015B MDRO	TPH - Diesel Range Organics (DRO)											
	Diesel Range Organics (DRO), 3541 Solid*	40			3.2	5.1	1.00000	mg/Kg	139639		01/11/05 1748	pjg
Method	% Solids Determination											
	% Solids, Solid	77.6			0.10	0.10	1	%	138806		01/05/05 1310	daj
	% Moisture, Solid	22.4			0.10	0.10	1	%	138806		01/05/05 1310	daj
8015B MGRO	TPH - Gasoline Range Organics (GRO)											
	Gasoline Range Organics (GRO), Solid*	64	U		7.0	64	1.00000	ug/Kg	139477		01/14/05 0724	wre
7.3.3.2/9014	Reactivity, Cyanide											
	Reactivity, Cyanide, Solid	1.8	U		1.8	1.8	1	mg/Kg	138891		01/06/05 1225	mtb
7196A	Hexavalent Chromium											
	Hexavalent Chromium, Solid*	2.5	U		0.62	2.5	1	mg/Kg	139592		01/18/05 0815	pmf
1010	Ignitability (Pensky-Martens Closed-Cup)											
	Ignitability (Flashpoint), Solid	>200					1	degrees F	138854		01/06/05 0750	jmk
9045C	pH (Soil)											
	Corrosivity (pH Solid), Solid	8.6			0.2	0.2	1	pH Units	139019		01/07/05 1547	pmf

* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 233168 Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WD
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 233168-7
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DI	DATE/TIME	TECH
7.3.4.2/9034	Reactivity, Sulfide											
	Reactivity, Sulfide, Solid	220	U		60	220	1	mg/Kg	139198		01/11/05 0938	mtb
8330	Explosives by 8330 (HPLC)											
	HMX, Solid	0.20	U		0.055	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
	RDX, Solid	0.20	U		0.062	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
	1,3,5-Trinitrobenzene, Solid	0.098	U		0.032	0.098	1.00000	mg/Kg	139533		01/11/05 1646	san
	1,3-Dinitrobenzene, Solid	0.098	U		0.023	0.098	1.00000	mg/Kg	139533		01/11/05 1646	san
	Nitrobenzene, Solid	0.098	U		0.021	0.098	1.00000	mg/Kg	139533		01/11/05 1646	san
	2,4,6-TNT, Solid	0.098	U		0.023	0.098	1.00000	mg/Kg	139533		01/11/05 1646	san
	Tetryl, Solid	0.39	U		0.12	0.39	1.00000	mg/Kg	139533		01/11/05 1646	san
	2,4-Dinitrotoluene, Solid	0.098	U		0.025	0.098	1.00000	mg/Kg	139533		01/11/05 1646	san
	2,6-Dinitrotoluene, Solid	0.20	U		0.048	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
	2-Amino-4,6-Dinitrotoluene, Solid	0.20	U		0.045	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
	4-Amino-2,6-Dinitrotoluene, Solid	0.29	U		0.093	0.29	1.00000	mg/Kg	139533		01/11/05 1646	san
	2-Nitrotoluene, Solid	0.20	U		0.047	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
	4-Nitrotoluene, Solid	0.20	U		0.049	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
	3-Nitrotoluene, Solid	0.20	U		0.052	0.20	1.00000	mg/Kg	139533		01/11/05 1646	san
8332M	NG/PETN by 8332M (HPLC)											
	Nitroglycerine, Solid	0.50	U		0.12	0.50	1.00000	mg/Kg	139541		01/14/05 0157	san
8081A	Organochlorine Pesticide Analysis											
	gamma-BHC (Lindane), TCLP Leach	5.0	U		0.50	5.0	1.00000	ug/L	139631		01/12/05 2257	kdl
	Heptachlor, TCLP Leach	5.0	U		0.50	5.0	1.00000	ug/L	139631		01/12/05 2257	kdl
	Heptachlor epoxide, TCLP Leach	5.0	U		0.50	5.0	1.00000	ug/L	139631		01/12/05 2257	kdl
	Endrin, TCLP Leach	5.0	U		0.50	5.0	1.00000	ug/L	139631		01/12/05 2257	kdl
	Methoxychlor, TCLP Leach	25	U		2.5	25	1.00000	ug/L	139631		01/12/05 2257	kdl
	Toxaphene, TCLP Leach	50	U		5.0	50	1.00000	ug/L	139631		01/12/05 2257	kdl

* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 233168 Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WD
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 233168-7
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Chlordane, TCLP Leach	10	U		1.0	10	1.00000	ug/L	139631		01/12/05 2257	kdl
7470A	Leachable, Mercury (CVAA)											
	Mercury, TCLP Leach	2.0	U		2.0	2.0	1	ug/L	139174		01/11/05 1438	gok
6010B	Leachable, Metals Analysis (ICAP)											
	Arsenic, TCLP Leach	0.10	U		0.010	0.10	1	mg/L	139524		01/14/05 1741	tds
	Barium, TCLP Leach	0.46	B		0.010	1.0	1	mg/L	139524		01/14/05 1741	tds
	Cadmium, TCLP Leach	0.050	U		0.002	0.050	1	mg/L	139524		01/14/05 1741	tds
	Chromium, TCLP Leach	0.050	U		0.010	0.050	1	mg/L	139524		01/14/05 1741	tds
	Lead, TCLP Leach	0.050	U		0.0050	0.050	1	mg/L	139524		01/14/05 1741	tds
	Selenium, TCLP Leach	0.10	U		0.010	0.10	1	mg/L	139524		01/14/05 1741	tds
	Silver, TCLP Leach	0.050	U		0.005	0.050	1	mg/L	139524		01/14/05 1741	tds
8270C	Semivolatile Organics											
	Pyridine, TCLP Leach	200	U		200	200	1.00000	ug/L	139423		01/13/05 1540	dpk
	1,4-Dichlorobenzene, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	2-Methylphenol (o-cresol), TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	Hexachloroethane, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	4-Methylphenol (m/p-cresol), TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	Nitrobenzene, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	Hexachlorobutadiene, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	2,4,6-Trichlorophenol, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	2,4,5-Trichlorophenol, TCLP Leach	500	U		500	500	1.00000	ug/L	139423		01/13/05 1540	dpk
	2,4-Dinitrotoluene, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	Hexachlorobenzene, TCLP Leach	100	U		100	100	1.00000	ug/L	139423		01/13/05 1540	dpk
	Pentachlorophenol, TCLP Leach	500	U		500	500	1.00000	ug/L	139423		01/13/05 1540	dpk
8260B	Volatile Organics											
	Vinyl chloride, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn

* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 233168 Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WD
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 233168-7
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	1,1-Dichloroethene, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	2-Butanone (MEK), TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	Chloroform, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	Carbon tetrachloride, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	Benzene, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	1,2-Dichloroethane, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	Trichloroethene, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	Tetrachloroethene, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn
	Chlorobenzene, TCLP Leach	100	U		25	100	1.0000	ug/L	139428		01/13/05 1256	jdn

* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

Job Number: 233168

LABORATORY TEST RESULTS

Date:01/19/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WD
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 233168-7
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
Method	% Solids Determination											
	% Solids, Solid	77.6			0.10	0.10	1	%	138806		01/05/05 1310	daj
	% Moisture, Solid	22.4			0.10	0.10	1	%	138806		01/05/05 1310	daj
7470A	Leachable, Mercury (CVAA)											
	Mercury, TCLP Leach	2.0	U		2.0	2.0	1	ug/L	139174		01/11/05 1438	gok
6010B	Leachable, Metals Analysis (ICAP)											
	Arsenic, TCLP Leach	0.10	U		0.010	0.10	1	mg/L	139524		01/14/05 1741	tds
	Barium, TCLP Leach	0.46	B		0.010	1.0	1	mg/L	139524		01/14/05 1741	tds
	Cadmium, TCLP Leach	0.050	U		0.002	0.050	1	mg/L	139524		01/14/05 1741	tds
	Chromium, TCLP Leach	0.050	U		0.010	0.050	1	mg/L	139524		01/14/05 1741	tds
	Lead, TCLP Leach	0.050	U		0.0050	0.050	1	mg/L	139524		01/14/05 1741	tds
	Selenium, TCLP Leach	0.10	U		0.010	0.10	1	mg/L	139524		01/14/05 1741	tds
	Silver, TCLP Leach	0.050	U		0.005	0.050	1	mg/L	139524		01/14/05 1741	tds

* In Description = Dry Wgt.

STL CHICAGO

Client Sample ID: RVAAP14-001-WD

Trace Level Organic Compounds

Lot-Sample #...:	G5A050217-003	Work Order #...:	G15W51AA	Matrix.....:	SOLID
Date Sampled...:	01/04/05 13:05	Date Received..:	01/05/05		
Prep Date.....:	01/14/05	Analysis Date..:	01/18/05		
Prep Batch #...:	5017478				
Dilution Factor:	1	Initial Wgt/Vol:	2 g	Final Wgt/Vol..:	10 mL

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
Nitroguanidine	ND	0.25	mg/kg	NONE UV/HPLC per

STL CHICAGO

Client Sample ID: RVAAP14-001-WD

General Chemistry

Lot-Sample #...: G5A050217-003 Work Order #...: G15W5 Matrix.....: SOLID
Date Sampled...: 01/04/05 Date Received..: 01/05/05

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrocellulose	0.68 B,J	2.0	mg/kg	MCAWW 353.2	01/10-01/12/05	5011311
	MDL.....: 0.57					

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

McCUTCHEON Enterprises, Inc.
Complete Waste Management

McCutcheon Enterprises, Inc.
250 Park Road
Apollo, PA 15613
(724)568-3623 Fax (724)568-2571
www.completewastemgmt.com

NH032

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	
OH5210021735	24121		33882

GENERATOR

3. Generator's Name and Mailing Address
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266-9297

4. Generator's Phone (330) 358-7311

A. Non-Hazardous Manifest Document No. MC24121

B. State Generator's ID

5. Transporter 1 Company Name: McCutcheon Enterprises Inc — 6. US EPA ID Number: PAR000026047

C. State Trans. ID

7. Transporter 2 Company Name — 8. US EPA ID Number

D. Transporter's Phone (724-568-3623)

E. State Trans. ID

9. Designated Facility Name and Site Address
McCutcheon Ent. Biosolids Treatment Facility
250 Park Road
Apollo, PA 15613

10. US EPA ID Number: PAR000026047

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone (724-568-3623)

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L Waste No.
a. Non-regulated Material (purge water),	1	TT	EST ~1600	G	NONE
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above	
a. 0220505-00771	c.	a.	c.
b.	d.	b.	d.

15. Special Handling Instructions and Additional Information
Purge and Decon water from RVAAP RI 14 AOC
Emergency contact - 724-568-3623 24 hrs.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.

Printed/Typed Name	Signature	Month	Day	Year
Irving R Venger		10	28	15

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Robert G Grant		10	28	15

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR 2ND COPY

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

McCutcheon Enterprises, Inc.
Complete Waste Management

McCutcheon Enterprises, Inc.
250 Park Road
Apollo, PA 15613
(724)568-3623 Fax (724)568-2571
www.completewastemgmt.com

NH033

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. OHSP100201736 | Manifest Document No. 24262 | 2. Page 1 of 1

3. Generator's Name and Mailing Address
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266-0237

4. Generator's Phone (330) 358-7211

A. Non-Hazardous Manifest Document No. MC24262

B. State Generator's ID

5. Transporter 1 Company Name: McCutcheon Enterprises Inc | 6. US EPA ID Number: PAD013028847 | C. State Trans. ID

7. Transporter 2 Company Name | 8. US EPA ID Number | D. Transporter's Phone (724-568-3623) | E. State Trans. ID

9. Designated Facility Name and Site Address
McCutcheon Ent. Biosolids Treatment Facility
250 Park Road
Apollo, PA 15613
10. US EPA ID Number: PAD013028847 | F. Transporter's Phone ( ) | G. State Facility's ID | H. Facility's Phone (724-568-3623)

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L Waste No.
a.		Non-regulated Material (sewage water).	1	TT	(EST) 5000	G	NONE
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
a. 020905-00777
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a.
b.
c.
d.

15. Special Handling Instructions and Additional Information
Purge 5000 (EST) water from RVAAP-K1 AOC
Emergency Contact - 724-568-3623 24 hrs.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.

GENERATOR

Printed/Typed Name: IRVING R. VENEGA | Signature: Irving Venega | Month Day Year: 10/21/2015

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Kay Arcil | Signature: Kay Arcil | Month Day Year: 10/21/2015

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR 2ND COPY

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

SEVERN TRENT **STL**

Page 1 of 2

Lab Lot # 233168

STL Chicago
2417 Bond St.
University Park, IL 60466
708-534-5200
Fax. 708-534-5211

Report To:		Bill To:	
Contact:	Eric Ellis	Contact:	Eric Ellis
Company:	MKM Engineers, Inc.	Company:	MKM Engineers, Inc.
Address:	8451 State Route 5	Address:	8451 State Route 5
	Ravenna, OH 44266		Ravenna, OH 44266
Phone:	330-358-2920	Phone:	330-358-2920
Fax:	330-358-2924	Fax:	330-358-2924
Email:	eric.ellis@mkmengineers.com	PO #:	
		Quote #:	

Sampler Name:	ERIC ELLIS
Sampler Signature:	
Project Name:	Characterization of RVAAP 14 AOCs
Project Number:	04-02-0030
Project Location:	RVAAP - Ravenna, Ohio
Lab PM:	Nancy McDonald

Package Sealed: Yes No	Samples Sealed: Yes No		
Received on Ice: Yes No	Samples Intact: Yes No		
Temperature C of Cooler:			
Within Hold Time: Yes No			
Preserv. Indicated: Yes No N/A			
pH Check OK: Yes No N/A			
Res Cl2 Check OK: Yes No N/A			
Sample Labels and COC Agree: Yes No COC not present			

Date Required		Refrig #	
Hard Copy	21 Days	# / Cont.	
Fax/Email	14 Days	Volume	
		Preserv.	

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	VOC	SVOC	Explosives	TAL Metals	Nitroglycerin	Pest/PCBs	Nitrate	Cr+6	Total Susp. Solids (TSS)	TCLP % Solids	Additional Analyses / Remarks
1		LL5mw-001-GW	01-04-05	1115	W	G	x	x	x	x	x	x	x				
2		LL5mw-005-GW	01-04-05	0940	W	G	x	x	x	x		x	x				
3		LL5mw-004-ER	01-04-05	0840	W	G	x	x	x	x		x	x				
4		LL5mw-004-GW	01-04-05	1415	W	G	x	x	x	x		x	x				
5		LL5mw-004-DUP	01-04-05	1415	W	G	x	x	x	x		x	x				
6	x	LL5mw-004-MS/MSD	01-04-05	1415	W	G	x	x	x	x		x	x				
7		RVAAP14-001-WW	01-04-05	1330	W	G	x	x	x	x	x			x	x	x	Continued on next page... (Cr+6-hold time!)
8		RVAAP14-001-WD	01-04-05	1305	S	G			x		x			x			Continued on next page...
		TRIP BLANK	Lab	Lab	W	G	x										Only 1 VOA Vial included

Relinquished by:	Company: MKM Engineers	Date: 1/4/05	Time: 1630	Received By:	Company: STL North Canton (Courier) Date: Time:
Relinquished by:	Company: STL North Canton (Courier)	Date:	Time:	Received By:	Company: Fed Ex Date: Time:
Relinquished by:	Company: FedEx	Date:	Time:	Received By:	Company: SR Date: 1-5-05 Time: 1035

Matrix Key
W - Water, S - Soil, SL - Sludge, SO - Solid
WW - Wastewater, SE - Sediment, L - Leachate, M - Miscellaneous
DL - Drum Liquid, DS - Drum Solid, W - Wipe
A Air, OL - Oil, O _____

Comments: Please call if sediment quantity is not sufficient - (limited by sediment supply)

Date Received
Courier:
Hand Delivered:
Bill of Lading:

STL Chicago

SEVERN TRENT **STL**

Page 2 of 2

Lab Lot # 233108

STL Chicago
2417 Bond St.
University Park, IL 60466
708-534-5200
Fax. 708-534-5211

Report To:		Bill To:	
Contact:	Eric Ellis	Contact:	Eric Ellis
Company:	MKM Engineers, Inc.	Company:	MKM Engineers, Inc.
Address:	8451 State Route 5	Address:	8451 State Route 5
	Ravenna, OH 44266		Ravenna, OH 44266
Phone:	330-358-2920	Phone:	330-358-2920
Fax:	330-358-2924	Fax:	330-358-2924
Email:	eric.ellis@mkmengineers.com	PO #:	
		Quote #:	

Sampler Name:	Eric Ellis
Sampler Signature:	
Project Name:	Characterization of RVAAP 14 AOCs
Project Number:	04-02-0030
Project Location:	RVAAP - Ravenna, Ohio
Lab PM:	Nancy McDonald

Package Sealed Yes No		Samples Sealed Yes No	
Received on Ice Yes No		Samples Intact Yes No	
Temperature C of Cooler			
Within Hold Time Yes No			
Preserv. Indicated Yes No N/A			
pH Check OK Yes No N/A			
Res Cl2 Check OK Yes No N/A			
Sample Labels and COC Agree Yes No COC not present			

Date Required		Rush #																
Hard Copy	21 Days	# / Cont.																
Fax/Email	14 Days	Volume																
		Preserv.																

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	TPH GRO (8015)	TPH DRO (8015)	Reactive CN & Sulfide	Reactivity	Corrosivity	Ignitability	Full TCLP (Metals, Pesticides, SVOC, VOC)	Pesticides	PCBs	Additional Analyses / Remarks
6		RVAAP14-001-WW	01-04-05	1330	W	G	x	x	x		x	x	x	x	x	Waste Characterization
7		RVAAP14-001-WD	01-04-05	1305	S	G	x	x		x	x	x	x		x	Waste Characterization

Relinquished by:	Company: MKM Engineers	Date: 1/4/05	Time: 1630	Received By:	Company: STL North Canton (Courier)	Date:	Time:
Relinquished by:	Company: STL North Canton (Courier)	Date:	Time:	Received By:	Company: Fed Ex	Date:	Time:
Relinquished by:	Company: FedEx	Date:	Time:	Received By:	Company: STL	Date: 1-5-05	Time: 1035

Comments:

Matrix Key			
W - Water	WW - Wastewater	DL - Drum Liquid	A - Air
S - Soil	SE - Sediment	DS - Drum Solid	OL - Oil
SL - Sludge	L - Leachate	W - Wipe	O _____
SO - Solid	M - Miscellaneous		

Date Received	
Courier:	
Hand Delivered:	
Bill of Lading:	

STL Chicago is part of Severn Trent Laboratories, Inc.

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 233168 Location.: 57222 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 01/05/2005 Date of the Report..: 01/18/2005
Project Number.: 20004694 Project Description.: USACE RVAAP 14 AOCS Project Manager.....: nsm
Customer.....: MKM Engineers, Inc. Contact.: Eric Ellis

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?.....	Y	
Were samples dropped off at or picked up by STL?..	N	
Custody seal on shipping container?.....	Y	
...If "yes", custody seal intact?.....	Y	
Custody seals on sample containers?.....	N	
...If "yes", custody seal intact?.....		
Samples iced?.....	Y	
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	3.6,2.8,3.0,2.6,2.0,2.4,2.8
Samples received intact (good condition)?.....	Y	
Volatile samples acceptable? (no headspace).....	Y	
Correct containers used?.....	Y	
Adequate sample volume provided?.....	Y	
Samples preserved correctly?.....	Y	
Samples received within holding-time?.....	Y	
Agreement between COC and sample labels?.....	Y	
Radioactivity at or below background levels?.....	Y	
A Sample Discrepancy Report (SDR) was needed?.....	N	
If samples were shipped was there an air bill #?..	Y	
Sample Custodian Signature/Date.....	Y	

Page 1

G5A140208

SEVERN TRENT STL

Page 1 of 1

STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
(910) 373-5600
Fax. (916) 372-1059

Report To:

Contact:	Eric Ellis
Company:	MKM Engineers, Inc.
Address:	8451 State Route 5
	Ravenna, OH 44266
Phone:	330-358-2920
Fax:	330-358-2924
Email:	eric.ellis@mkmengineers.com

Bill To:

Contact:	Eric Ellis
Company:	MKM Engineers, Inc.
Address:	8451 State Route 5
	Ravenna, OH 44266
Phone:	330-358-2920
Fax:	330-358-2924
PO #:	
Quote #:	

Lab Lot #

Sampler Name:	Eric Ellis
Sampler Signature:	
Project Name:	Characterization of RVAAP 14 AOCs
Project Number:	04-02-0030
Project Location:	RVAAP - Ravenna, Ohio
Lab PM:	Robert Hbarak

Package Sealed Yes No	Samples Sealed Yes No		
Received on Ice Yes No	Samples Intact Yes No		
Temperature C of Cooler			
Within Hold Time Yes No			
Preserv. Indicated Yes No N/A			
pH Check OK Yes No N/A			
Res Cl2 Check OK Yes No N/A			
Sample Labels and COC Agree Yes No COC not present			

Date Required	
Hard Copy	21 Days
Fax/Email	14 Days

Refrig #
/ Cont.
Volume
Preserv.

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	Preservants (Nitric/Sulfuric/Hydrochloric/Nitrogen/Sodium Hydroxide)	Additional Analyses / Remarks
		LL5mw-001-GW	01-04-05	1115	W	G	x	
		RVAAP14-001-WW	01-04-05	1330	W	G	x	Waste Characterization
		RVAAP14-001-WD	01-04-05	1305	S	G	x	Waste Characterization

RECEIVED IN GOOD CONDITION UNDER COC
JAN 05 2005
INI. CG

	Company:	Date:	Time:
Relinquished by:	MKM Engineers	1/4/05	1630
Relinquished by:	STL North Canton (Courier)		
Relinquished by:	FedEx		

	Company:	Date:	Time:
Received By:	STL North Canton (Courier)		
Received By:	Fed Ex		
Received By:	STL SAC	1-5-05	0840

Matrix Key
W - Water
S - Soil
SL - Sludge
SO - Solid
WW - Wastewater
SE - Sediment
L - Leachate
M - Miscellaneous
DL - Drum Liquid
DS - Drum Solid
W - Wipe
A Air
OL - Oil
O _____

Comments:

Date Received
Courier:
Hand Delivered:
Bill of Lading:

STL Chicago is part of Severn Trent Laboratories, Inc.

Samples are composites and not grab samples per Eric Ellis (MKM) 1/7/05

STL Sacramento (916) 373 - 5600

4 of 103

SEVERN TRENT **STL**

LOT RECEIPT CHECKLIST
STL Sacramento

CLIENT STL-CHICAGO PM RH LOG # 303006

LOT# (QUANTIMS ID) ~~G5A050219~~ QUOTE# 60857 LOCATION W21B

GSA140208 RH 1/14/05

		Initials	Date
DATE RECEIVED 1-5-05	TIME RECEIVED 0930	GC	1-5-05

DELIVERED BY ☒ FEDEX ☐ CA OVERNIGHT ☐ CLIENT
☐ AIRBORNE ☐ GOLDEN STATE ☐ DHL
☐ UPS ☐ BAX GLOBAL ☐ GO-GETTERS
☐ STL COURIER ☐ COURIERS ON DEMAND
☐ OTHER

CUSTODY SEAL STATUS ☒ INTACT ☐ BROKEN ☐ N/A

CUSTODY SEAL #(S) 615266, 615276

SHIPPPING CONTAINER(S) ☐ STL ☒ CLIENT ☐ N/A

TEMPERTURE RECORD (IN °C) IR 1 ☐ 3 ☒ ☐ OTHER

COC #(S) N/A

TEMPERATURE BLANK N/A

SAMPLE TEMPERATURE 5°C

COLLECTOR'S NAME: ☒ Verified from COC ☐ Not on COC

pH MEASURED ☐ YES ☐ ANOMALY ☒ N/A

LABELED BY.....

LABELS CHECKED BY.....

PEER REVIEW ☒ NA

SHORT HOLD TEST NOTIFICATION

SAMPLE RECEIVING
WETCHEM ☒ N/A
VOA-ENCORES ☒ N/A

☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL ☒ N/A

☒ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES ☐ N/A

☐ Clouseau ☐ TEMPERATURE EXCEEDED (2 °C - 6 °C)*1 ☒ N/A

☐ WET ICE ☐ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED ☐ PM NOTIFIED

Notes:

*1 Acceptable temperature range for State of Wisconsin samples is ≤4°C.

RVAAP 14 - IDW WATER

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LABORATORY TEST RESULTS

Job Number: 233168 Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WW
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 233168-6
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	0.15	U		0.047	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	beta-BHC	0.099	U		0.028	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	delta-BHC	0.099	U		0.025	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	gamma-BHC (Lindane)	0.15	U		0.042	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	Heptachlor	0.15	U		0.041	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	Aldrin	0.099	U		0.028	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	Heptachlor epoxide	0.15	U		0.036	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	Endosulfan I	0.099	U		0.021	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	Dieldrin	0.099	U		0.018	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	4,4'-DDE	0.099	U		0.023	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	Endrin	0.099	U		0.017	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	Endosulfan II	0.15	U		0.042	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	4,4'-DDD	0.11	U		0.036	0.11	1.00000	ug/L	139633		01/08/05 0752	kdl
	Endosulfan sulfate	0.15	U		0.044	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	4,4'-DDT	0.15	U		0.049	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	Methoxychlor	0.59	U		0.17	0.59	1.00000	ug/L	139633		01/08/05 0752	kdl
	alpha-Chlordane	0.050	U		0.016	0.050	1.00000	ug/L	139633		01/08/05 0752	kdl
	gamma-Chlordane	0.099	U		0.017	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	Endrin aldehyde	0.15	U		0.035	0.15	1.00000	ug/L	139633		01/08/05 0752	kdl
	Endrin ketone	0.099	U		0.029	0.099	1.00000	ug/L	139633		01/08/05 0752	kdl
	Toxaphene	0.50	U		0.14	0.50	1.00000	ug/L	139633		01/08/05 0752	kdl
8082	PCB Analysis											
	Aroclor 1016	0.59	U		0.18	0.59	1.00000	ug/L	139331		01/10/05 1343	bjt
	Aroclor 1221	1.3	U		0.42	1.3	1.00000	ug/L	139331		01/10/05 1343	bjt
	Aroclor 1232	1.3	U		0.35	1.3	1.00000	ug/L	139331		01/10/05 1343	bjt
	Aroclor 1242	1.3	U		0.43	1.3	1.00000	ug/L	139331		01/10/05 1343	bjt
	Aroclor 1248	1.5	U		0.48	1.5	1.00000	ug/L	139331		01/10/05 1343	bjt

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 233168

Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WW
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 233168-6
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Aroclor 1254	1.3	U		0.35	1.3	1.00000	ug/L	139331		01/10/05 1343	bjt
	Aroclor 1260	0.59	U		0.17	0.59	1.00000	ug/L	139331		01/10/05 1343	bjt
8015B MDRO	TPH - Diesel Range Organics (DRO)											
	Diesel Range Organics (DRO)	0.26			0.029	0.12	1.00000	mg/L	139639		01/11/05 1557	pjg
8015B MGRO	TPH - Gasoline Range Organics (GRO)											
	Gasoline Range Organics (GRO)	50	U		16	50	1.00000	ug/L	139475		01/14/05 1017	wre
9014/9010B	Cyanide (Colorimetric)											
	Cyanide, Total	0.010	U		0.0044	0.010	1	mg/L	138894		01/06/05 1227	mtb
7.3.3.2/9014	Reactivity, Cyanide											
	Reactivity, Cyanide	0.01	U		0.01	0.01	1	mg/L	138891		01/06/05 1227	mtb
7196A	Hexavalent Chromium											
	Hexavalent Chromium	0.010	U		0.0016	0.010	1	mg/L	138811		01/05/05 1227	pmf
1010	Ignitability (Pensky-Martens Closed-Cup)											
	Ignitability (Flashpoint)	>200					1	degrees F	139323		01/12/05 1300	jmk
9040B	pH (Liquid)											
	Corrosivity (pH-Liquids)	7.88			0.20	0.20	1	pH Units	139020		01/07/05 1549	pmf
7.3.4.2/9034	Reactivity, Sulfide											
	Reactivity, Sulfide	1.0			1.0	1.0	1	mg/L	139080		01/10/05 1115	mtb
160.2	Solids, Total Suspended (TSS)											
	Solids, Total Suspended (TSS)	10000			80	100	1	mg/L	139081		01/10/05 0950	jmk

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TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8330	Explosives by 8330 (HPLC)											
	HMX	0.31	U		0.068	0.31	1.00000	ug/L	139536		01/14/05 2146	san
	RDX	0.20	U		0.064	0.20	1.00000	ug/L	139536		01/14/05 2146	san
	1,3,5-Trinitrobenzene	0.20	U		0.058	0.20	1.00000	ug/L	139536		01/14/05 2146	san
	1,3-Dinitrobenzene	0.20	U		0.055	0.20	1.00000	ug/L	139536		01/14/05 2146	san
	Nitrobenzene	0.16	U		0.044	0.16	1.00000	ug/L	139536		01/14/05 2146	san
	2,4,6-TNT	0.25	U		0.078	0.25	1.00000	ug/L	139536		01/14/05 2146	san
	Tetryl	0.78	U		0.16	0.78	1.00000	ug/L	139536		01/14/05 2146	san
	2,4-Dinitrotoluene	0.36	U		0.12	0.36	1.00000	ug/L	139536		01/14/05 2146	san
	2,6-Dinitrotoluene	0.43	U		0.14	0.43	1.00000	ug/L	139536		01/14/05 2146	san
	2-Amino-4,6-Dinitrotoluene	0.36	U		0.12	0.36	1.00000	ug/L	139536		01/14/05 2146	san
	4-Amino-2,6-Dinitrotoluene	0.33	U		0.11	0.33	1.00000	ug/L	139536		01/14/05 2146	san
	2-Nitrotoluene	0.31	U		0.093	0.31	1.00000	ug/L	139536		01/14/05 2146	san
	4-Nitrotoluene	0.31	U		0.10	0.31	1.00000	ug/L	139536		01/14/05 2146	san
	3-Nitrotoluene	0.31	U		0.10	0.31	1.00000	ug/L	139536		01/14/05 2146	san
8332M	NG/PETN by 8332M (HPLC)											
	Nitroglycerine	1.0	U		0.15	1.0	1.00000	ug/L	139539		01/13/05 2335	san
7041	Antimony (GFAA)											
	Antimony	7.5	U		2.5	7.5	1	ug/L	139271		01/11/05 1431	daj
7060A	Arsenic (GFAA)											
	Arsenic	230			10	40	20	ug/L	139527		01/13/05 1716	daj
7421	Lead (GFAA)											
	Lead	270			7.9	30	10	ug/L	139356		01/12/05 1532	daj
7841	Thallium (GFAA)											
	Thallium	4.0	U		1.3	4.0	1	ug/L	139367		01/12/05 2221	daj

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TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
7470A	Mercury (CVAA)											
	Mercury	2.3			0.063	0.20	1	ug/L	138921		01/06/05 1453	gok
6010B	Metals Analysis (ICAP Trace)											
	Aluminum	190000			24	150	1	ug/L	139714		01/18/05 1149	tds
	Barium	840			1.3	10	1	ug/L	139714		01/18/05 1149	tds
	Beryllium	9.8			0.25	2.0	1	ug/L	139714		01/18/05 1149	tds
	Cadmium	4.9			0.25	2.0	1	ug/L	139714		01/18/05 1149	tds
	Calcium	170000			9.5	100	1	ug/L	139714		01/18/05 1149	tds
	Chromium	310			1.1	10	1	ug/L	139714		01/18/05 1149	tds
	Cobalt	150			0.80	5.0	1	ug/L	139714		01/18/05 1149	tds
	Copper	390			2.2	10	1	ug/L	139714		01/18/05 1149	tds
	Iron	280000			38	120	1	ug/L	139710		01/18/05 1748	tds
	Magnesium	90000			8.1	100	1	ug/L	139714		01/18/05 1149	tds
	Manganese	5700			0.41	10	1	ug/L	139714		01/18/05 1149	tds
	Nickel	370			1.0	10	1	ug/L	139714		01/18/05 1149	tds
	Potassium	48000			66	500	1	ug/L	139714		01/18/05 1149	tds
	Selenium	3.6	B		3.0	15	1	ug/L	139710		01/18/05 1748	tds
	Silver	1.0	B		0.72	10	1	ug/L	139714		01/18/05 1149	tds
	Sodium	31000			490	1500	1	ug/L	139710		01/18/05 1748	tds
	Vanadium	290			1.0	10	1	ug/L	139714		01/18/05 1149	tds
	Zinc	1100			1.6	30	1	ug/L	139714		01/18/05 1149	tds
8260B	Volatile Organics											
	Chloromethane	1.0	U		0.080	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Vinyl chloride	1.0	U		0.080	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Bromomethane	1.0	U		0.10	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Chloroethane	1.0	U		0.080	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,1-Dichloroethene	1.0	U		0.12	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn

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LABORATORY TEST RESULTS

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Laboratory Sample ID: 233168-6
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TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DF	DATE/TIME	TECH
	Carbon disulfide	5.0	U		0.20	5.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Acetone	9.5	J		1.8	10	1.00000	ug/L	139434		01/07/05 2331	jdn
	Methylene chloride	1.5	U		0.35	1.5	1.00000	ug/L	139434		01/07/05 2331	jdn
	trans-1,2-Dichloroethene	1.0	U		0.14	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,1-Dichloroethane	1.0	U		0.11	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	cis-1,2-Dichloroethene	1.0	U		0.090	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	2-Butanone (MEK)	10	U		1.2	10	1.00000	ug/L	139434		01/07/05 2331	jdn
	Bromochloromethane	1.0	U		0.10	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Chloroform	1.8			0.11	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,1,1-Trichloroethane	1.0	U		0.080	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Carbon tetrachloride	1.0	U		0.13	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Benzene	1.0	U		0.090	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,2-Dichloroethane	1.0	U		0.090	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Trichloroethene	1.0	U		0.10	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,2-Dichloropropane	1.0	U		0.12	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Bromodichloromethane	1.0	U		0.11	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	cis-1,3-Dichloropropene	1.0	U		0.12	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	4-Methyl-2-pentanone (MIBK)	10	U		0.65	10	1.00000	ug/L	139434		01/07/05 2331	jdn
	Toluene	1.0	U		0.10	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	trans-1,3-Dichloropropene	1.0	U		0.15	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,1,2-Trichloroethane	1.0	U		0.15	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Tetrachloroethene	1.0	U		0.090	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	2-Hexanone	10	U		0.53	10	1.00000	ug/L	139434		01/07/05 2331	jdn
	Dibromochloromethane	1.0	U		0.060	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,2-Dibromoethane (EDB)	1.0	U		0.13	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Chlorobenzene	1.0	U		0.080	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Ethylbenzene	1.0	U		0.070	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	m&p-Xylenes	2.0	U		0.18	2.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	o-Xylene	1.0	U		0.080	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn

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LABORATORY TEST RESULTS

Job Number: 233168

Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WW
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 233168-6
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DI	DATE/TIME	TECH
	Styrene	1.0	U		0.13	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Bromoform	1.0	U		0.11	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,1,2,2-Tetrachloroethane	1.0	U		0.090	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	1,2-Dichloroethene (total)	1.0	U		0.23	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
	Xylenes (total)	1.0	U		0.28	1.0	1.00000	ug/L	139434		01/07/05 2331	jdn
8270C	Semivolatile Organics											
	Phenol, Low Level Water	5.5	U		0.38	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Bis(2-chloroethyl)ether, Low Level Water	2.2	U		0.33	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	1,3-Dichlorobenzene, Low Level Water	2.2	U		0.47	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	1,4-Dichlorobenzene, Low Level Water	2.2	U		0.36	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	1,2-Dichlorobenzene, Low Level Water	2.2	U		0.38	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzyl alcohol, Low Level Water	22	U		2.4	22	1.00000	ug/L	139616		01/14/05 1340	dpk
	2-Methylphenol (o-cresol), Low Level Water	2.2	U		0.29	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,2-oxybis (1-chloropropane), Low Level Water	2.2	U		0.31	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	n-Nitroso-di-n-propylamine, Low Level Water	0.55	U		0.089	0.55	1.00000	ug/L	139616		01/14/05 1340	dpk
	Hexachloroethane, Low Level Water	5.5	U		0.67	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Methylphenol (m/p-cresol), Low Level Water	2.2	U		0.11	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	2-Chlorophenol, Low Level Water	5.5	U		0.13	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Nitrobenzene, Low Level Water	1.1	U		0.18	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Bis(2-chloroethoxy)methane, Low Level Water	2.2	U		0.34	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	1,2,4-Trichlorobenzene, Low Level Water	2.2	U		0.37	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzoic acid, Low Level Water	22	U		3.3	22	1.00000	ug/L	139616		01/14/05 1340	dpk
	Isophorone, Low Level Water	2.2	U		0.29	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,4-Dimethylphenol, Low Level Water	11	U		1.4	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	Hexachlorobutadiene, Low Level Water	5.5	U		0.70	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Naphthalene, Low Level Water	1.1	U		0.18	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,4-Dichlorophenol, Low Level Water	11	U		1.0	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Chloroaniline, Low Level Water	11	U		3.1	11	1.00000	ug/L	139616		01/14/05 1340	dpk

* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 233168 Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP 14 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WW
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 233168-6
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	2,4,6-Trichlorophenol, Low Level Water	5.5	U		0.23	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,4,5-Trichlorophenol, Low Level Water	11	U		1.5	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	Hexachlorocyclopentadiene, Low Level Water	22	U		0.71	22	1.00000	ug/L	139616		01/14/05 1340	dpk
	2-Methylnaphthalene, Low Level Water	0.55	U		0.14	0.55	1.00000	ug/L	139616		01/14/05 1340	dpk
	2-Nitroaniline, Low Level Water	5.5	U		0.24	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	2-Chloronaphthalene, Low Level Water	2.2	U		0.29	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Chloro-3-methylphenol, Low Level Water	11	U		2.6	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,6-Dinitrotoluene, Low Level Water	0.55	U		0.12	0.55	1.00000	ug/L	139616		01/14/05 1340	dpk
	2-Nitrophenol, Low Level Water	11	U		0.90	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	3-Nitroaniline, Low Level Water	11	U		2.3	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	Dimethyl phthalate, Low Level Water	2.2	U		0.23	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,4-Dinitrophenol, Low Level Water	22	U		3.6	22	1.00000	ug/L	139616		01/14/05 1340	dpk
	Acenaphthylene, Low Level Water	1.1	U		0.13	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	2,4-Dinitrotoluene, Low Level Water	1.1	U		0.14	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Acenaphthene, Low Level Water	1.1	U		0.13	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Dibenzofuran, Low Level Water	2.2	U		0.14	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Nitrophenol, Low Level Water	22	U		4.1	22	1.00000	ug/L	139616		01/14/05 1340	dpk
	Fluorene, Low Level Water	1.1	U		0.14	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Nitroaniline, Low Level Water	11	U		2.5	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Bromophenyl phenyl ether, Low Level Water	5.5	U		0.21	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Hexachlorobenzene, Low Level Water	0.55	U		0.11	0.55	1.00000	ug/L	139616		01/14/05 1340	dpk
	Diethyl phthalate, Low Level Water	2.2	U		0.16	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	4-Chlorophenyl phenyl ether, Low Level Water	5.5	U		0.82	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Pentachlorophenol, Low Level Water	11	U		1.9	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	n-Nitrosodiphenylamine, Low Level Water	1.1	U		0.14	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	4,6-Dinitro-2-methylphenol, Low Level Water	22	U		2.6	22	1.00000	ug/L	139616		01/14/05 1340	dpk
	Phenanthrene, Low Level Water	1.1	U		0.15	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Anthracene, Low Level Water	1.1	U		0.16	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Carbazole, Low Level Water	5.5	U		0.32	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk

* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 233168 Date:01/24/2005

CUSTOMER: MKM Engineers, Inc. PROJECT: USACE RVAAP T4 AOCS ATTN: Eric Ellis

Customer Sample ID: RVAAP14-001-WW
Date Sampled.....: 01/04/2005
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 233168-6
Date Received.....: 01/05/2005
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-butyl phthalate, Low Level Water	5.5	U		0.40	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Fluoranthene, Low Level Water	1.1	U		0.15	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Pyrene, Low Level Water	1.1	U		0.13	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk
	Butyl benzyl phthalate, Low Level Water	2.2	U		0.43	2.2	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzo(a)anthracene, Low Level Water	0.22	U		0.054	0.22	1.00000	ug/L	139616		01/14/05 1340	dpk
	Chrysene, Low Level Water	0.55	U		0.049	0.55	1.00000	ug/L	139616		01/14/05 1340	dpk
	3,3-Dichlorobenzidine, Low Level Water	5.5	U		0.79	5.5	1.00000	ug/L	139616		01/14/05 1340	dpk
	Bis(2-ethylhexyl)phthalate, Low Level Water	16	U		4.3	16	1.00000	ug/L	139616		01/14/05 1340	dpk
	Di-n-octyl phthalate, Low Level Water	11	U	*	2.7	11	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzo(b)fluoranthene, Low Level Water	0.44	U		0.074	0.44	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzo(k)fluoranthene, Low Level Water	0.44	U		0.079	0.44	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzo(a)pyrene, Low Level Water	0.44	U		0.092	0.44	1.00000	ug/L	139616		01/14/05 1340	dpk
	Indeno(1,2,3-cd)pyrene, Low Level Water	0.44	U		0.095	0.44	1.00000	ug/L	139616		01/14/05 1340	dpk
	Dibenzo(a,h)anthracene, Low Level Water	0.44	U		0.14	0.44	1.00000	ug/L	139616		01/14/05 1340	dpk
	Benzo(ghi)perylene, Low Level Water	1.1	U		0.21	1.1	1.00000	ug/L	139616		01/14/05 1340	dpk

* In Description = Dry Wgt.

STL CHICAGO

Client Sample ID: RVAAP14-001-WW

Trace Level Organic Compounds

Lot-Sample #...:	G5A050217-002	Work Order #...:	G15W41AC	Matrix.....:	WATER
Date Sampled...:	01/04/05 13:30	Date Received..:	01/05/05		
Prep Date.....:	01/17/05	Analysis Date..:	01/18/05		
Prep Batch #...:	5017486				
Dilution Factor:	1	Initial Wgt/Vol:	10 mL	Final Wgt/Vol..:	10 mL

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
Nitroguanidine	15 J	20	ug/L	NONE UV/HPLC per

NOTE(S):

J Estimated result. Result is less than the reporting limit.

STL CHICAGO

Client Sample ID: RVAAP14-001-WW

General Chemistry

Lot-Sample #...: G5A050217-002 Work Order #...: G15W4 Matrix.....: WATER
Date Sampled...: 01/04/05 Date Received..: 01/05/05

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrocellulose	ND	0.50	mg/L	MCAWW 353.2	01/17-01/18/05	5017497
		MDL.....: 0.12				