

AR0021750

1ST QTR 15



February 23, 2015
Control No. 187100R
Page 1 of 10

City of Fort Smith
ATTN: Mr. Lance McAvoy
3900 Kelley Highway
Fort Smith, AR 72904

This report replaces American Interplex Corporation (AIC) Control No. 187100 originally sent on February 05, 2015. This report contains the analytical results and supporting information for samples submitted on January 29, 2015. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Revised to present biosolid data on a dry-weight basis.

John Overbey
Laboratory Director

This document has been distributed to the following:

PDF cc: City of Fort Smith
ATTN: Mr. Lance McAvoy
lmcavoy@fortsmithar.gov



City of Fort Smith
3900 Kelley Highway
Fort Smith, AR 72904

SAMPLE INFORMATION

Project Description:

Twenty (20) water and one (1) sludge sample(s) received on January 29, 2015
Massard Table III Priority Pollutants

Receipt Details:

A Chain of Custody was provided. The samples were delivered in one (1) ice chest.
Ice chest #1 was delivered with shipping documentation.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Sampled Date/Time</u>	<u>Notes</u>
187100-1	Massard Influent	27-Jan-2015 1805	
187100-2	Massard Effluent	27-Jan-2015 1800	
187100-3	Massard Influent	27-Jan-2015 2208	
187100-4	Massard Effluent	27-Jan-2015 0800	
187100-5	Massard Raw Biosolid	27-Jan-2015 1206	
187100-6	Massard Influent	27-Jan-2015 2208	
187100-7	Massard Effluent	27-Jan-2015 0800	

Qualifiers:

D Result is from a secondary dilution factor

Case Narrative:

Analysis of soils/sludges are reported on a dry-weight basis unless otherwise specified.

References:

- "Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
- "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
- "Standard Methods for the Examination of Water and Wastewaters", (SM).
- "American Society for Testing and Materials" (ASTM).
- "Association of Analytical Chemists" (AOAC).



City of Fort Smith
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ANALYTICAL RESULTS

AIC No. 187100-1

Sample Identification: Massard Influent 27-Jan-2015 1805

Analyte	Result	RL	Units	Qualifier
Total Recoverable Phenolics EPA 420.1	32	5	ug/l	
Prep: 29-Jan-2015 1326 by 308	Analyzed: 29-Jan-2015 1550 by 308		Batch: W50781	
Total Cyanide SM 4500-CN C,E 1999	< 10	10	ug/l	
Prep: 30-Jan-2015 0842 by 308	Analyzed: 30-Jan-2015 1321 by 308		Batch: W50802	

AIC No. 187100-2

Sample Identification: Massard Effluent 27-Jan-2015 1800

Analyte	Result	RL	Units	Qualifier
Total Recoverable Phenolics EPA 420.1	< 5	5	ug/l	
Prep: 29-Jan-2015 1326 by 308	Analyzed: 29-Jan-2015 1550 by 308		Batch: W50781	
Total Cyanide SM 4500-CN C,E 1999	< 10	10	ug/l	
Prep: 30-Jan-2015 0842 by 308	Analyzed: 30-Jan-2015 1312 by 308		Batch: W50802	

AIC No. 187100-3

Sample Identification: Massard Influent 27-Jan-2015 2208

Analyte	Result	RL	Units	Qualifier
Total Recoverable Antimony EPA 200.8	< 60	60	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Arsenic EPA 200.8	2.1	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Beryllium EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Cadmium EPA 200.8	1.6	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Chromium EPA 200.8	< 10	10	ug/l	
Prep: 02-Feb-2015 1648 by 302	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Copper EPA 200.8	64	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Lead EPA 200.8	8.6	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Molybdenum EPA 200.8	12	8	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Nickel EPA 200.8	8.6	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Selenium EPA 200.8	< 5	5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Silver EPA 200.8	4.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	
Total Recoverable Thallium EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	



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ANALYTICAL RESULTS

AIC No. 187100-3 (Continued)

Sample Identification: Massard Influent 27-Jan-2015 2208

Analyte	Result	RL	Units	Qualifier
Total Recoverable Zinc EPA 200.8	400	20	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1820 by 302		Batch: S38215	

AIC No. 187100-4

Sample Identification: Massard Effluent 27-Jan-2015 0800

Analyte	Result	RL	Units	Qualifier
Total Recoverable Antimony EPA 200.8	< 60	60	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Arsenic EPA 200.8	0.71	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Beryllium EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Cadmium EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Chromium EPA 200.8	< 10	10	ug/l	
Prep: 02-Feb-2015 1648 by 302	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Copper EPA 200.8	10	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Lead EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Molybdenum EPA 200.8	9.6	8	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Nickel EPA 200.8	5.1	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Selenium EPA 200.8	< 5	5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Silver EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Thallium EPA 200.8	< 0.5	0.5	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	
Total Recoverable Zinc EPA 200.8	55	20	ug/l	
Prep: 02-Feb-2015 1648 by 313	Analyzed: 04-Feb-2015 1826 by 302		Batch: S38215	

AIC No. 187100-5

Sample Identification: Massard Raw Biosolid 27-Jan-2015 1206

Analyte	Result	RL	Units	Qualifier
Total Cyanide EPA 9010C, 9014	< 3	3	mg/Kg	
Prep: 03-Feb-2015 0803 by 308	Analyzed: 03-Feb-2015 1238 by 308		Batch: W50827	
Total Recoverable Phenolics EPA 9065	210	20	mg/Kg	
Prep: 03-Feb-2015 0803 by 308	Analyzed: 03-Feb-2015 1210 by 308		Batch: W50826	

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ANALYTICAL RESULTS

AIC No. 187100-5 (Continued)

Sample Identification: Massard Raw Biosolid 27-Jan-2015 1206

<u>Analyte</u>		<u>Result</u>	<u>RL</u>	<u>Units</u>	<u>Qualifier</u>
Total Solids		3.9	0.01	wt %	
SM 2540 G 1997	Prep: 03-Feb-2015 1108 by 271	Analyzed: 05-Feb-2015 0753 by 271		Batch: W50832	
Antimony		< 3	3	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Arsenic		< 5	5	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Beryllium		0.34	0.03	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Cadmium		1.0	0.4	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Chromium		32	0.7	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1553 by 302		Batch: S38220	
Chromium		23	0.7	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Copper		340	0.6	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Lead		38	4	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Molybdenum		8.3	0.8	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Nickel		140	1	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Selenium		< 7	7	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Silver		8.3	0.7	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Thallium		< 4	4	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Zinc		1100	0.2	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1553 by 302		Batch: S38220	
Zinc		1100	0.2	mg/Kg	
EPA 3051A, 6010C	Prep: 03-Feb-2015 0904 by 302	Analyzed: 04-Feb-2015 1105 by 302		Batch: S38220	
Mercury		1.4	0.07	mg/Kg	
EPA 7471B	Prep: 03-Feb-2015 0909 by 302	Analyzed: 04-Feb-2015 0932 by 311		Batch: S38222	

AIC No. 187100-6

Sample Identification: Massard Influent 27-Jan-2015 2208

<u>Analyte</u>		<u>Result</u>	<u>RL</u>	<u>Units</u>	<u>Qualifier</u>
Mercury, low level		0.051	0.010	ug/l	D
EPA 245.7	Prep: 02-Feb-2015 1104 by 302	Analyzed: 02-Feb-2015 1237 by 302		Batch: S38211	Dil: 2



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ANALYTICAL RESULTS

AIC No. 187100-7

Sample Identification: Massard Effluent 27-Jan-2015 0800

Analyte	Result	RL	Units	Qualifier
Mercury, low level EPA 245.7	0.0052	0.0050	ug/l	
	Prep: 02-Feb-2015 1104 by 302	Analyzed: 02-Feb-2015 1156 by 302	Batch: S38211	



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DUPLICATE RESULTS

Analyte	AIC No.	Result	RPD		Preparation Date	Analysis Date	Dil	Qual
			RPD	Limit				
Total Solids	187122-1	83 wt %			03Feb15 1108 by 271	05Feb15 0753 by 271		
	Batch: W50832 Duplicate	84 wt %	1.18	10.0	03Feb15 1109 by 271	05Feb15 0753 by 271		

LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Total Recoverable Phenolics	0.1 mg/l	102	85.0-115			W50781	29Jan15 0752 by 308	29Jan15 1100 by 308		
Total Cyanide	0.1 mg/l	109	85.0-115			W50802	30Jan15 0842 by 308	30Jan15 1310 by 308		
Mercury, low level	0.01 ug/l	112	76.0-113			S38211	02Feb15 1104 by 302	02Feb15 1151 by 302		
Total Recoverable Antimony	0.05 mg/l	101	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Arsenic	0.05 mg/l	104	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Beryllium	0.05 mg/l	94.6	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Cadmium	0.05 mg/l	95.9	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Chromium	0.05 mg/l	99.6	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Copper	0.05 mg/l	104	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Lead	0.05 mg/l	103	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Molybdenum	0.05 mg/l	101	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Nickel	0.05 mg/l	103	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Selenium	0.05 mg/l	99.6	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Silver	0.02 mg/l	102	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Thallium	0.05 mg/l	106	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Recoverable Zinc	0.05 mg/l	103	85.0-115			S38215	02Feb15 1648 by 313	04Feb15 1741 by 302		
Total Cyanide	0.500 mg/Kg	109	85.0-115			W50827	03Feb15 0804 by 308	03Feb15 1232 by 308		
Total Recoverable Phenolics	10.0 mg/Kg	106	85.0-115			W50826	03Feb15 0803 by 308	03Feb15 1210 by 308		
Antimony	500 mg/Kg	106	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Arsenic	500 mg/Kg	103	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Beryllium	50.0 mg/Kg	105	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Cadmium	500 mg/Kg	106	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Chromium	50.0 mg/Kg	103	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1539 by 302		
Copper	50.0 mg/Kg	103	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Lead	500 mg/Kg	111	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Molybdenum	50.0 mg/Kg	106	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Nickel	50.0 mg/Kg	111	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Selenium	500 mg/Kg	105	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Silver	10.0 mg/Kg	115	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Thallium	500 mg/Kg	108	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1040 by 302		
Zinc	50.0 mg/Kg	98.6	85.0-115			S38220	03Feb15 0904 by 302	04Feb15 1539 by 302		
Mercury	1.25 mg/Kg	92.2	85.0-115			S38222	03Feb15 0909 by 302	04Feb15 0916 by 311		

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MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Total Recoverable Phenolics	187052-1	0.1 mg/l	91.7	80.0-120	W50781	29Jan15 0752 by 308	29Jan15 1100 by 308		
	187052-1	0.1 mg/l	92.6	80.0-120	W50781	29Jan15 0752 by 308	29Jan15 1100 by 308		
	Relative Percent Difference:		0.791	10.0	W50781				
Total Cyanide	187100-2	0.1 mg/l	91.2	75.0-125	W50802	30Jan15 0842 by 308	30Jan15 1314 by 308		
	187100-2	0.1 mg/l	90.0	75.0-125	W50802	30Jan15 0842 by 308	30Jan15 1316 by 308		
	Relative Percent Difference:		1.32	20.0	W50802				
Mercury, low level	187100-7	0.01 ug/l	100	63.0-111	S38211	02Feb15 1104 by 302	02Feb15 1202 by 302		
	187100-7	0.01 ug/l	102	63.0-111	S38211	02Feb15 1104 by 302	02Feb15 1207 by 302		
	Relative Percent Difference:		1.31	18.0	S38211				
Total Recoverable Antimony	187183-1	0.05 mg/l	98.0	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	97.7	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.308	20.0	S38215				
Total Recoverable Arsenic	187183-1	0.05 mg/l	103	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	102	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.552	20.0	S38215				
Total Recoverable Beryllium	187183-1	0.05 mg/l	91.9	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	93.6	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		1.91	20.0	S38215				
Total Recoverable Cadmium	187183-1	0.05 mg/l	92.2	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	92.7	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.500	20.0	S38215				
Total Recoverable Chromium	187183-1	0.05 mg/l	97.4	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	96.7	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.685	20.0	S38215				
Total Recoverable Copper	187183-1	0.05 mg/l	98.8	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	99.5	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.756	20.0	S38215				
Total Recoverable Lead	187183-1	0.05 mg/l	99.5	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	98.8	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.769	20.0	S38215				
Total Recoverable Molybdenum	187183-1	0.05 mg/l	99.8	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	100	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.439	20.0	S38215				
Total Recoverable Nickel	187183-1	0.05 mg/l	99.2	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	99.7	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.467	20.0	S38215				
Total Recoverable Selenium	187183-1	0.05 mg/l	96.4	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	96.2	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.170	20.0	S38215				
Total Recoverable Silver	187183-1	0.02 mg/l	98.9	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.02 mg/l	99.2	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		0.239	20.0	S38215				
Total Recoverable Thallium	187183-1	0.05 mg/l	102	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	100	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		1.54	20.0	S38215				
Total Recoverable Zinc	187183-1	0.05 mg/l	97.3	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1745 by 302		
	187183-1	0.05 mg/l	98.7	75.0-125	S38215	02Feb15 1648 by 313	04Feb15 1750 by 302		
	Relative Percent Difference:		1.42	20.0	S38215				
Total Cyanide	187100-5	0.981 mg/Kg	93.7	75.0-125	W50827	03Feb15 0804 by 308	03Feb15 1234 by 308		
	187100-5	0.956 mg/Kg	92.5	75.0-125	W50827	03Feb15 0804 by 308	03Feb15 1236 by 308		
	Relative Percent Difference:		1.04	20.0	W50827				

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MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Total Recoverable Phenolics	187100-5	9.93 mg/Kg	103	80.0-120	W50826	03Feb15 0803 by 308	03Feb15 1210 by 308		
	187100-5	9.68 mg/Kg	99.7	80.0-120	W50826	03Feb15 0803 by 308	03Feb15 1210 by 308		
	Relative Percent Difference:		1.60	10.0	W50826				
Antimony	187122-1	496 mg/Kg	95.3	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	498 mg/Kg	95.0	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.295	20.0	S38220				
Arsenic	187122-1	496 mg/Kg	99.6	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	498 mg/Kg	99.0	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.640	20.0	S38220				
Beryllium	187122-1	49.6 mg/Kg	102	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	49.8 mg/Kg	102	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.477	20.0	S38220				
Cadmium	187122-1	496 mg/Kg	77.8	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	498 mg/Kg	78.1	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.251	20.0	S38220				
Chromium	187122-1	49.6 mg/Kg	91.4	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1754 by 302		
	187122-1	49.8 mg/Kg	94.5	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1756 by 302		
	Relative Percent Difference:		1.61	20.0	S38220				
Copper	187122-1	49.6 mg/Kg	94.7	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	49.8 mg/Kg	94.5	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.134	20.0	S38220				
Lead	187122-1	496 mg/Kg	106	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	498 mg/Kg	106	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.0779	20.0	S38220				
Molybdenum	187122-1	49.6 mg/Kg	103	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	49.8 mg/Kg	102	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.543	20.0	S38220				
Nickel	187122-1	49.6 mg/Kg	105	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	49.8 mg/Kg	104	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.124	20.0	S38220				
Selenium	187122-1	496 mg/Kg	95.0	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	498 mg/Kg	95.1	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.0845	20.0	S38220				
Silver	187122-1	9.92 mg/Kg	109	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	9.95 mg/Kg	108	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.787	20.0	S38220				
Thallium	187122-1	496 mg/Kg	101	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1621 by 302		
	187122-1	498 mg/Kg	102	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1632 by 302		
	Relative Percent Difference:		0.117	20.0	S38220				
Zinc	187122-1	49.6 mg/Kg	102	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1754 by 302		
	187122-1	49.8 mg/Kg	107	75.0-125	S38220	03Feb15 0904 by 302	04Feb15 1756 by 302		
	Relative Percent Difference:		1.98	20.0	S38220				
Mercury	187122-1	2.32 mg/Kg	98.5	70.0-130	S38222	03Feb15 0909 by 302	04Feb15 0920 by 311		
	187122-1	2.45 mg/Kg	88.9	70.0-130	S38222	03Feb15 0909 by 302	04Feb15 0924 by 311		
	Relative Percent Difference:		8.70	20.0	S38222				

City of Fort Smith
3900 Kelley Highway
Fort Smith, AR 72904

LABORATORY BLANK RESULTS

Analyte	Result	RL	PQL	QC Sample	Preparation Date	Analysis Date	Qual
Total Recoverable Phenolics	< 0.005 mg/l	0.005	0.005	W50781-1	29Jan15 0752 by 308	29Jan15 1100 by 308	
Total Cyanide	< 0.01 mg/l	0.01	0.01	W50802-1	30Jan15 0842 by 308	30Jan15 1308 by 308	
Mercury, low level	< 0.0050 ug/l	0.0050	0.0050	S38211-1	02Feb15 1104 by 302	02Feb15 1121 by 302	
Total Recoverable Antimony	< 0.03 mg/l	0.03	0.03	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Arsenic	< 0.0005 mg/l	0.0005	0.0005	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Beryllium	< 0.0003 mg/l	0.0003	0.0003	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Cadmium	< 0.0001 mg/l	0.0001	0.0001	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Chromium	< 0.007 mg/l	0.007	0.007	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Copper	< 0.0005 mg/l	0.0005	0.0005	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Lead	< 0.0005 mg/l	0.0005	0.0005	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Molybdenum	< 0.008 mg/l	0.008	0.008	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Nickel	< 0.0005 mg/l	0.0005	0.0005	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Selenium	< 0.002 mg/l	0.002	0.002	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Silver	< 0.0002 mg/l	0.0002	0.0002	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Thallium	< 0.0005 mg/l	0.0005	0.0005	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Recoverable Zinc	< 0.002 mg/l	0.002	0.002	S38215-1	02Feb15 1648 by 313	04Feb15 1736 by 302	
Total Cyanide	< 0.1 mg/Kg	0.1	0.1	W50827-1	03Feb15 0804 by 308	03Feb15 1231 by 308	
Total Recoverable Phenolics	< 0.5 mg/Kg	0.5	0.5	W50826-1	03Feb15 0803 by 308	03Feb15 1210 by 308	
Total Solids	< 0.01 wt %	0.01	0.01	W50832-1	03Feb15 1109 by 271	05Feb15 0753 by 271	
Antimony	< 3 mg/Kg	3	3	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Arsenic	< 5 mg/Kg	5	5	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Beryllium	< 0.03 mg/Kg	0.03	0.03	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Cadmium	< 0.4 mg/Kg	0.4	0.4	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Chromium	< 0.7 mg/Kg	0.7	0.7	S38220-1	03Feb15 0904 by 302	04Feb15 1536 by 302	
Copper	< 0.6 mg/Kg	0.6	0.6	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Lead	< 4 mg/Kg	4	4	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Molybdenum	< 0.8 mg/Kg	0.8	0.8	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Nickel	< 1 mg/Kg	1	1	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Selenium	< 7 mg/Kg	7	7	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Silver	< 0.7 mg/Kg	0.7	0.7	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Thallium	< 4 mg/Kg	4	4	S38220-1	03Feb15 0904 by 302	04Feb15 1036 by 302	
Zinc	< 0.2 mg/Kg	0.2	0.2	S38220-1	03Feb15 0904 by 302	04Feb15 1536 by 302	
Mercury	< 0.08 mg/Kg	0.08	0.08	S38222-1	03Feb15 0909 by 302	04Feb15 0912 by 311	



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: <u>City of Fort Smith</u>			PO No.		NO OF BOTTLES	ANALYSES REQUESTED ¹										AIC CONTROL NO: <u>187100</u>								
Project Reference: <u>Massard Tab. III Priority Pollutants</u>			SAMPLE MATRIX			T. Cyanide	Phenolics												AIC PROPOSAL NO:					
Project Manager: <u>Lance McAvoy</u>			G R A B	C O M P	W A T E R			S O I L												Carrier/Tracking No. _____				
Sampled By: <u>Rachel Sharp</u>																						Received Temperature C <u>2.0°C</u>		
AIC No.	Sample Identification	Date/Time Collected																	Remarks					
①	Massard Influent	1/27/15 0005	X		X			2	X	X									EFFLUENT CYANIDE					
①	Massard Influent	1/27/15 0603	X		X			2	X	X									PHENOLICS TO BE COMPOSITED					
①	Massard Influent	1/27/15 1158	X		X			2	X	X									EFFLUENT CYANIDE					
①	Massard Influent	1/27/15 1805	X		X			2	X	X									EFFLUENT CYANIDE					
②	Massard Effluent	1/27/15 0001	X		X			2	X	X									PHENOLICS TO BE COMPOSITED					
②	Massard Effluent	1/27/15 0558	X		X			2	X	X									COMPOSITED					
②	Massard Effluent	1/27/15 1202	X		X			2	X	X									Field pH calibration					
			Container Type						P	G									on _____ @ _____					
			Preservative						B	S									Buffer:					
G = Glass			P = Plastic			V = VOA vials			H = HCl to pH2			T = Sodium Thiosulfate												
NO = none			S = Sulfuric acid pH2			N = Nitric acid pH2			B = NaOH to pH12			Z = Zinc acetate												
Turnaround Time Requested: (Please circle) <u>NORMAL</u> or EXPEDITED IN _____ DAYS					Relinquished By: <u>Rachel L. Sharp</u>					Date/Time: <u>1/28/15 0915</u>					Received By: _____					Date/Time: _____				
Expedited results requested by: _____					Relinquished By: _____					Date/Time: _____					Received in Lab By: <u>TROY WILLIAMS</u>					Date/Time: <u>8:40</u>				
Who should AIC contact with questions: <u>Lance McAvoy</u>					Phone: <u>479-754-2337</u> Fax: _____					Report Attention to: _____					Report Address to: <u>Lance McAvoy</u>					Comments: <u>Fed Ex Tracking #: 8024 7206 7314</u>				



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: <u>City of Fort Smith</u>			PO No.		NO OF BOTTLES	ANALYSES REQUESTED ¹										AIC CONTROL NO: <u>187100</u>
Project Reference: <u>Massard Table III Priority Pollutants</u>			SAMPLE MATRIX			T. Cyanide	Phenolics	PP Metals	MO	TDS III: PP Metals, CN, Phenolics, T. Solids (Dry)	MO	Hg. L (245.7)	AIC PROPOSAL NO:			
Project Manager: <u>Lance McAvoy</u>			WATER	SOIL	Carrier/Tracking No.											
Sampled By: <u>Rachel Sharp</u>					G R A B	C O M P	Received Temperature C									
AIC No.	Sample Identification	Date/Time Collected					2.0 °C		Remarks							
②	Massard Effluent	1/27/15 1800	X		X			2	X	X						
③	Massard Inflow	1/27/15 097-2205		X	X			1			X	X				
④	Massard Effluent	1/27-28/15 0800-0800	X	X				1			X	X				
⑤	Massard Raw Sewer	1/27/15 1206	X		X			1				X	X			
⑥	Massard Inflow	1/27/15 017-2208		X	X			1						X		
⑦	Massard Effluent	1/27-28/15 0800-0800		X	X			1								X
Container Type					P	G	P	P	G	G	G					
Preservative					B	S	N	N	No	No	No					
G = Glass			P = Plastic			V = VOA vials			H = HCl to pH2			T = Sodium Thiosulfate				
NO = none			S = Sulfuric acid pH2			N = Nitric acid pH2			B = NaOH to pH12			Z = Zinc acetate				
Turnaround Time Requested: (Please circle) <u>NORMAL</u> or EXPEDITED IN _____ DAYS					Relinquished By: <u>Rachel Sharp</u>		Date/Time: <u>1/28/15 0915</u>		Received By:		Date/Time					
Expedited results requested by:					Relinquished By:		Date/Time		Received in Lab By: <u>TROY WILLIAMS</u>		Date/Time <u>1-29-15</u>					
Who should AIC contact with questions: <u>Lance McAvoy</u>					Comments: <u>Fed Ex Tracking # : 8024 7206 7314</u>											
Phone: <u>479-784-2337</u> Fax:																
Report Attention to:																
Report Address to: <u>Lance McAvoy</u>																