



PDC Laboratories, Inc.

3278 N Highway 67 • Florissant, MO 63033
(314) 432-0550 • (800) 333-FAST • FAX (314) 432-4977



Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/01/14 10:45
Report Date: 07/02/14
Customer #: 277310
PO#: 4167739

Laboratory Results

Sample No: **4070040-01**
Sample Description: **T3 Startup**

Collect Date: **07/01/14 08:46**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	270 mg/L		07/02/14 09:55	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/02/14 09:55	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	2100 mg/L		07/02/14 13:41	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2500 mg/L		07/01/14 15:30	das	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1200 mg/L		07/02/14 08:00	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.40 mg/L		07/02/14 11:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4070040-02**
Sample Description: **T2 Startup**

Collect Date: **07/01/14 08:37**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	21000 mg/L		07/02/14 13:41	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2700 mg/L		07/01/14 15:30	das	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	240 mg/L		07/02/14 11:00	ACV	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B410870 - 04-No Prep WC								
Blank (B410870-BLK1)			Prepared & Analyzed: 07/01/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B410870-BS1)			Prepared & Analyzed: 07/01/14					
Solids - total suspended solids (TSS)	95.0	mg/L	100.0		95	82.9-110		
Duplicate (B410870-DUP1)			Prepared & Analyzed: 07/01/14					
Solids - total suspended solids (TSS)	2660	mg/L		2540			5	5
Batch B410929 - 04-No Prep WC								
Duplicate (B410929-DUP1)			Prepared & Analyzed: 07/02/14					
Solids - total volatile suspended solids	1200	mg/L		1200			0	5
Batch B410945 - 04-No Prep WC								
Calibration Blank (B410945-CCB2)			Prepared: 07/01/14 Analyzed: 07/02/14					
COD	-5.10	mg/L						
Calibration Check (B410945-CCV2)			Prepared: 07/01/14 Analyzed: 07/02/14					
COD	487	mg/L	500.0		97	95-105		
Duplicate (B410945-DUP2)			Prepared: 07/01/14 Analyzed: 07/02/14					
COD	2080	mg/L		2090			0.8	20

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B410947 - 04-No Prep WC								
Calibration Blank (B410947-CCB1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B410947-CCV1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	10.2	mg/L	10.00		102	90-110		
Matrix Spike (B410947-MS1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	16.2	mg/L	10.00	6.48	97	80-120		
Matrix Spike Dup (B410947-MSD1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	16.3	mg/L	10.00	6.48	98	80-120	0.6	20

4070040



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Laboratory Results

Notes

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PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations.
Endorsement by Federal or State Governments or their agencies is not implied.

PIA PDC Laboratories - Peoria, IL

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Certified by: Barb Pandolfo For Roxann Shull, Client Services Supervisor



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Date Received: 07/02/14 11:13
Report Date: 07/03/14
Customer #: 277310
PO#: 4167739

Laboratory Results

Sample No: **4070317-01**
Sample Description: **T3 Startup**

Collect Date: **07/02/14 08:45**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	270 mg/L		07/02/14 12:17	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/02/14 12:17	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	2600 mg/L		07/02/14 13:43	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3100 mg/L		07/02/14 11:55	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1300 mg/L		07/03/14 13:00	DWM	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.27 mg/L		07/02/14 11:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4070317-02**
Sample Description: **T2 Startup**

Collect Date: **07/02/14 08:45**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	22000 mg/L		07/02/14 13:43	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2400 mg/L		07/02/14 11:55	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	250 mg/L		07/02/14 11:00	ACV	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B410938 - 04-No Prep WC

Blank (B410938-BLK1)			Prepared & Analyzed: 07/02/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B410938-BS1)			Prepared & Analyzed: 07/02/14					
Solids - total suspended solids (TSS)	95.0	mg/L	100.0		95	82.9-110		
Duplicate (B410938-DUP1)			Prepared & Analyzed: 07/02/14					
Solids - total suspended solids (TSS)	2380	mg/L		2460			3	5
Duplicate (B410938-DUP2)			Prepared & Analyzed: 07/02/14					
Solids - total suspended solids (TSS)	3100	mg/L		3100			0	5

Batch B410945 - 04-No Prep WC

Calibration Blank (B410945-CCB2)			Prepared: 07/01/14 Analyzed: 07/02/14					
COD	-5.10	mg/L						
Calibration Check (B410945-CCV2)			Prepared: 07/01/14 Analyzed: 07/02/14					
COD	487	mg/L	500.0		97	95-105		
Duplicate (B410945-DUP2)			Prepared: 07/01/14 Analyzed: 07/02/14					
COD	2080	mg/L		2090			0.8	20

Batch B411023 - 04-No Prep WC

Blank (B411023-BLK1)			Prepared & Analyzed: 07/03/14					
Solids - total volatile suspended solids	< 4.0	mg/L						
Duplicate (B411023-DUP1)			Prepared & Analyzed: 07/03/14					
Solids - total volatile suspended solids	1300	mg/L		1340			3	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B410947 - 04-No Prep WC

Calibration Blank (B410947-CCB1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B410947-CCV1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	10.2	mg/L	10.00		102	90-110		
Matrix Spike (B410947-MS1)			Prepared & Analyzed: 07/02/14					
Ammonia-N	16.2	mg/L	10.00	6.48	97	80-120		

4070317

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B410947 - 04-No Prep WC								
Matrix Spike Dup (B410947-MSD1)			Source: 4063862-02		Prepared & Analyzed: 07/02/14			
Ammonia-N	16.3	mg/L	10.00	6.48	98	80-120	0.6	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B410950 - 04-IC No Prep								
Calibration Blank (B410950-CCB1)			Prepared & Analyzed: 07/02/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B410950-CCV1)			Prepared & Analyzed: 07/02/14					
Nitrate-N	1.20	mg/L	1.130		107	90-110		
Nitrite-N	2.13	mg/L	2.000		106	90-110		
Matrix Spike (B410950-MS1)			Source: 4064170-01		Prepared & Analyzed: 07/02/14			
Nitrate-N	Q1 59	mg/L	56.48	18	73	80-120		
Nitrite-N	128	mg/L	125.0	ND	103	80-120		
Matrix Spike Dup (B410950-MSD1)			Source: 4064170-01		Prepared & Analyzed: 07/02/14			
Nitrate-N	Q2 58	mg/L	56.48	18	72	80-120	1	20
Nitrite-N	126	mg/L	125.0	ND	101	80-120	2	20



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Q2 MSD failed %R

Q1 MS Failed %R

Certified by: Barb Pandolfo For Roxann Shull, Client Services Supervisor

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Date Received: 07/03/14 10:39
Report Date: 07/08/14
Customer #: 277310
PO#: 4167739

Revised Laboratory Results

Sample No: **4070616-01**
Sample Description: **T3 Startup**

Collect Date: **07/03/14 09:23**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	270 mg/L	Q3	07/03/14 11:54	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L	Q3	07/03/14 12:53	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	2900 mg/L		07/03/14 11:00	DWM	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3300 mg/L		07/03/14 11:00	DWM	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1400 mg/L		07/03/14 13:00	DWM	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.29 mg/L		07/03/14 12:30	ACV	SM(18) 4500 NH3 F 04KS
<u>Soluble Metals - STL</u>					
Zinc	0.16 mg/L		07/03/14 17:34	WPS	EPA 200.7 R4.4 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	1.3 mg/L		07/03/14 17:44	ACV	SM 4500P B E 18ed* 04KS
<u>Total Metals - STL</u>					
Zinc	2.2 mg/L		07/03/14 17:29	WPS	EPA 200.7 R4.4 04KS

Sample No: **4070616-02**
Sample Description: **T2 Startup**

Collect Date: **07/03/14 09:14**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	21000 mg/L		07/03/14 11:00	DWM	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2000 mg/L		07/03/14 11:00	DWM	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	270 mg/L		07/03/14 12:30	ACV	SM(18) 4500 NH3 F 04KS
<u>Soluble Metals - STL</u>					
Zinc	2.0 mg/L		07/03/14 17:37	WPS	EPA 200.7 R4.4 04KS
<u>Total Metals - STL</u>					
Zinc	3.6 mg/L		07/03/14 17:36	WPS	EPA 200.7 R4.4 04KS

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Revised Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411021 - 04-No Prep WC

Blank (B411021-BLK1)			Prepared & Analyzed: 07/03/14					
COD	< 5.0	mg/L						
LCS (B411021-BS1)			Prepared & Analyzed: 07/03/14					
COD	493	mg/L	500.0		99	95-105		
Duplicate (B411021-DUP1)			Prepared & Analyzed: 07/03/14					
COD	20600	mg/L		20500			0.5	20

Batch B411023 - 04-No Prep WC

Blank (B411023-BLK1)			Prepared & Analyzed: 07/03/14					
Solids - total volatile suspended solids	< 4.0	mg/L						
Duplicate (B411023-DUP1)			Prepared & Analyzed: 07/03/14					
Solids - total volatile suspended solids	1300	mg/L		1340			3	5

Batch B411024 - 04-No Prep WC

Blank (B411024-BLK1)			Prepared & Analyzed: 07/03/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411024-BS1)			Prepared & Analyzed: 07/03/14					
Solids - total suspended solids (TSS)	91.0	mg/L	100.0		91	82.9-110		

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411048 - 04-No Prep WC

Blank (B411048-BLK1)			Prepared & Analyzed: 07/03/14					
Ammonia-N	< 0.10	mg/L						
LCS (B411048-BS1)			Prepared & Analyzed: 07/03/14					
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B411048-MS1)			Prepared & Analyzed: 07/03/14					
Ammonia-N	10.1	mg/L	10.00	0.280	98	80-120		
Matrix Spike Dup (B411048-MSD1)			Prepared & Analyzed: 07/03/14					
Ammonia-N	10.1	mg/L	10.00	0.280	98	80-120	0	20

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Revised Laboratory Results**Soluble Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411049 - 04-No Prep WC								
Blank (B411049-BLK1)			Prepared & Analyzed: 07/03/14					
Phosphorus - ortho as P	< 0.050	mg/L						
LCS (B411049-BS1)			Prepared & Analyzed: 07/03/14					
Phosphorus - ortho as P	0.497	mg/L	0.5000		99	80-120		

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411018 - 04 EPA 200.2 R2.8								
Blank (B411018-BLK1)			Prepared & Analyzed: 07/03/14					
Zinc	< 0.020	mg/L						
LCS (B411018-BS1)			Prepared & Analyzed: 07/03/14					
Zinc	0.215	mg/L	0.2000		107	85-115		
Matrix Spike (B411018-MS1)			Prepared & Analyzed: 07/03/14					
Zinc	3.17	mg/L	1.000	2.18	99	70-130		
Matrix Spike Dup (B411018-MSD1)			Prepared & Analyzed: 07/03/14					
Zinc	3.07	mg/L	1.000	2.18	89	70-130	3	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411018 - 04 EPA 200.2 R2.8								
Blank (B411018-BLK1)			Prepared & Analyzed: 07/03/14					
Zinc	< 0.020	mg/L						
LCS (B411018-BS1)			Prepared & Analyzed: 07/03/14					
Zinc	0.215	mg/L	0.2000		107	85-115		
Batch B411095 - 04 EPA 200.2 R2.8								
Blank (B411095-BLK1)			Prepared & Analyzed: 07/07/14					
Zinc	< 0.020	mg/L						
LCS (B411095-BS1)			Prepared & Analyzed: 07/07/14					
Zinc	0.200	mg/L	0.2000		100	85-115		
Matrix Spike (B411095-MS1)			Prepared & Analyzed: 07/07/14					
	Source: 4070616-01RE1							

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Revised Laboratory Results**Soluble Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411095 - 04 EPA 200.2 R2.8								
Matrix Spike (B411095-MS1)			Source: 4070616-01RE1		Prepared & Analyzed: 07/07/14			
Zinc	1.12	mg/L	1.000	0.0694	105	70-130		
Matrix Spike Dup (B411095-MSD1)			Source: 4070616-01RE1		Prepared & Analyzed: 07/07/14			
Zinc	1.14	mg/L	1.000	0.0694	107	70-130	1	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411019 - 04-IC No Prep								
Calibration Blank (B411019-CCB1)			Prepared & Analyzed: 07/03/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B411019-CCV1)			Prepared & Analyzed: 07/03/14					
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Nitrite-N	2.08	mg/L	2.000		104	90-110		
Matrix Spike (B411019-MS1)			Source: 4070616-01		Prepared & Analyzed: 07/03/14			
Nitrate-N	Q1	350	mg/L	56.48	270	139	80-120	
Nitrite-N	Q1	161	mg/L	125.0	ND	129	80-120	
Matrix Spike Dup (B411019-MSD1)			Source: 4070616-01		Prepared & Analyzed: 07/03/14			
Nitrate-N	Q2	350	mg/L	56.48	270	142	80-120	0.4
Nitrite-N	Q2	152	mg/L	125.0	ND	122	80-120	6



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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/03/14 10:39
Report Date: 07/08/14
Customer #: 277310
PO#: 4167739

Revised Laboratory Results

Notes

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PIA PDC Laboratories - Peoria, IL
NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing
Drinking Water Certifications: Kansas (E-10389)

Q3 MS/MSD both failed %R
Q2 MSD failed %R
Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488

Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

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Bridgeton Landfill
13570 St Charles Rock Road
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Attn: Bill Abernathy

Date Received: 07/07/14 10:35
Report Date: 07/07/14
Customer #: 277310
PO#: 4167739

Laboratory Results

Sample No: **4070817-01**
Sample Description: **T3 Startup**

Collect Date: **07/04/14 09:10**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	260 mg/L	H	07/07/14 12:50	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L	H	07/07/14 12:50	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	1900 mg/L		07/07/14 13:33	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	4800 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2000 mg/L		07/07/14 13:30	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	4.9 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4070817-02**
Sample Description: **T2 Startup**

Collect Date: **07/04/14 09:10**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	24000 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2300 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	300 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411084 - 04-No Prep WC								
Calibration Blank (B411084-CCB1)			Prepared & Analyzed: 07/07/14					
COD	-0.00477	mg/L						
Calibration Blank (B411084-CCB2)			Prepared & Analyzed: 07/07/14					
COD	-5.07	mg/L						
Calibration Check (B411084-CCV1)			Prepared & Analyzed: 07/07/14					
COD	99.0	mg/L	100.0		99	95-105		
Calibration Check (B411084-CCV2)			Prepared & Analyzed: 07/07/14					
COD	495	mg/L	500.0		99	95-105		
Duplicate (B411084-DUP1)			Prepared & Analyzed: 07/07/14					
COD	22.7	mg/L		22.2			2	20
Duplicate (B411084-DUP2)			Prepared & Analyzed: 07/07/14					
COD	23400	mg/L		23200			0.5	20
Batch B411093 - 04-No Prep WC								
Blank (B411093-BLK1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411093-BS1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	99.0	mg/L	100.0		99	82.9-110		
Duplicate (B411093-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	2500	mg/L		2420			3	5
Duplicate (B411093-DUP2)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	4740	mg/L		4800			1	5
Batch B411127 - 04-No Prep WC								
Duplicate (B411127-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total volatile suspended solids	2020	mg/L		2020			0	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Blank (B411134-CCB1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					



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Laboratory Results

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411134-MS1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	363	mg/L	100.0	268	95	80-120		
Matrix Spike Dup (B411134-MSD1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	365	mg/L	100.0	268	97	80-120	0.5	20



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Laboratory Results

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry

No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

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State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)							
1 CLIENT Barr/Bridgeton	PROJECT NUMBER		P.O. NUMBER		MEANS SHIPPED		
	ADDRESS		PHONE NUMBER		FAX NUMBER		
	CITY STATE ZIP		SAMPLER		MATRIX TYPES: WW-WASTEWATER DW-DRINKING WATER GW-GROUND WATER WWSL-SLUDGE NAS-SOLID LCHT-LEACHATE NAL-NON-AQUEOUS SOIL-SOILS		
	CONTACT PERSON		SAMPLER'S SIGNATURE				
						3 ANALYSIS REQUESTED COD + AMMONIA TSS / USS + Nitrate / Nitrite TSS	
						4 (FOR LAB USE ONLY) LOGIN # 4070817 LOGGED BY: HG LAB PROJ. # TEMPLATE: PROJ. MGR.:	
2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT							
		DATE COLLECTED		TIME COLLECTED		SAMPLE TYPE MATRIX Bottle Count	
T3 Startup		7/4/14				✓ LCHT 2	
T2 Startup		AC 7/21 7/4/14		✓		LCHT 2	
5 TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) NORMAL (8-10 Bus. Days) RUSH (5 Bus. Days) Fastrak™ (3 Bus. Days) 1-2 Bus. Days Same Day DATE DUE 7/8/14				The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.			
RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE				6			
7 RELINQUISHED BY: (SIGNATURE) [Signature]		DATE 7-7-14 TIME 9:30am		RECEIVED BY: Richard Koenig		8 COMMENTS:(FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE PROPER BOTTLES RECEIVED IN GOOD CONDITION BOTTLES FILLED WITH ADEQUATE VOLUME SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE	
RELINQUISHED BY: (SIGNATURE)		DATE TIME		RECEIVED BY: DATE TIME			
RELINQUISHED BY: (SIGNATURE)		DATE TIME		RECEIVED BY: DATE TIME			
RELINQUISHED BY: (SIGNATURE)		DATE TIME		RECEIVED BY: DATE TIME			
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St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/07/14 10:47
Report Date: 07/07/14
Customer #: 277310
PO#: 4167739

Laboratory Results

Sample No: **4070825-01**
Sample Description: **T3 Startup**

Collect Date: **07/05/14 09:05**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	260 mg/L	H	07/07/14 13:08	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L	H	07/07/14 13:08	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	3100 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3500 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1700 mg/L		07/07/14 13:30	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.33 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4070825-02**
Sample Description: **T2 Startup**

Collect Date: **07/05/14 09:05**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	24000 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	1000 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	280 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/07/14 10:47
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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411084 - 04-No Prep WC								
Calibration Blank (B411084-CCB1)			Prepared & Analyzed: 07/07/14					
COD	-0.00477	mg/L						
Calibration Blank (B411084-CCB2)			Prepared & Analyzed: 07/07/14					
COD	-5.07	mg/L						
Calibration Check (B411084-CCV1)			Prepared & Analyzed: 07/07/14					
COD	99.0	mg/L	100.0		99	95-105		
Calibration Check (B411084-CCV2)			Prepared & Analyzed: 07/07/14					
COD	495	mg/L	500.0		99	95-105		
Duplicate (B411084-DUP1)			Prepared & Analyzed: 07/07/14					
COD	22.7	mg/L		22.2			2	20
Duplicate (B411084-DUP2)			Prepared & Analyzed: 07/07/14					
COD	23400	mg/L		23200			0.5	20
Batch B411093 - 04-No Prep WC								
Blank (B411093-BLK1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411093-BS1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	99.0	mg/L	100.0		99	82.9-110		
Duplicate (B411093-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	2500	mg/L		2420			3	5
Duplicate (B411093-DUP2)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	4740	mg/L		4800			1	5
Batch B411127 - 04-No Prep WC								
Duplicate (B411127-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total volatile suspended solids	2020	mg/L		2020			0	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Blank (B411134-CCB1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					



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Laboratory Results

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411134-MS1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	363	mg/L	100.0	268	95	80-120		
Matrix Spike Dup (B411134-MSD1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	365	mg/L	100.0	268	97	80-120	0.5	20



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Laboratory Results

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No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.

Certified by: Roxann Shull, Client Services Supervisor

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Date Received: 07/07/14 10:52
Report Date: 07/07/14
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PO#: 4167739

Laboratory Results

Sample No: **4070826-01**
Sample Description: **T3 Startup**

Collect Date: **07/06/14 08:16**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	240 mg/L		07/07/14 13:25	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/07/14 13:25	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	2200 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3400 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1700 mg/L		07/07/14 13:30	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.40 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4070826-02**
Sample Description: **T2 Startup**

Collect Date: **07/06/14 08:00**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	23000 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	1600 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	290 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411084 - 04-No Prep WC								
Calibration Blank (B411084-CCB1)			Prepared & Analyzed: 07/07/14					
COD	-0.00477	mg/L						
Calibration Blank (B411084-CCB2)			Prepared & Analyzed: 07/07/14					
COD	-5.07	mg/L						
Calibration Check (B411084-CCV1)			Prepared & Analyzed: 07/07/14					
COD	99.0	mg/L	100.0		99	95-105		
Calibration Check (B411084-CCV2)			Prepared & Analyzed: 07/07/14					
COD	495	mg/L	500.0		99	95-105		
Duplicate (B411084-DUP1)			Prepared & Analyzed: 07/07/14					
COD	22.7	mg/L		22.2			2	20
Duplicate (B411084-DUP2)			Prepared & Analyzed: 07/07/14					
COD	23400	mg/L		23200			0.5	20
Batch B411093 - 04-No Prep WC								
Blank (B411093-BLK1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411093-BS1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	99.0	mg/L	100.0		99	82.9-110		
Duplicate (B411093-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	2500	mg/L		2420			3	5
Duplicate (B411093-DUP2)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	4740	mg/L		4800			1	5
Batch B411127 - 04-No Prep WC								
Duplicate (B411127-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total volatile suspended solids	2020	mg/L		2020			0	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Blank (B411134-CCB1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					



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Laboratory Results

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411134-MS1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	363	mg/L	100.0	268	95	80-120		
Matrix Spike Dup (B411134-MSD1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	365	mg/L	100.0	268	97	80-120	0.5	20



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St. Louis, MO 63044
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Date Received: 07/07/14 10:52
Report Date: 07/07/14
Customer #: 277310
PO#: 4167739

Laboratory Results

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Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

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Missouri Department of Natural Resources

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Report Date: 07/09/14
Customer #: 277310
PO#: 4167739

Laboratory Results

Sample No: **4070829-01**
Sample Description: **T3 Startup**

Collect Date: **07/07/14 09:17**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	230 mg/L		07/07/14 13:43	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/07/14 13:43	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	2700 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3300 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1700 mg/L		07/07/14 13:30	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.23 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 F 04KS
<u>Soluble Metals - STL</u>					
Zinc	0.11 mg/L		07/09/14 10:13	WPS	EPA 200.7 R4.4 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	33 mg/L		07/07/14 15:30	DWM	SM 4500P B E 18ed*
<u>Total Metals - STL</u>					
Zinc	2.1 mg/L		07/07/14 14:37	WPS	EPA 200.7 R4.4 04KS

Sample No: **4070829-02**
Sample Description: **T2 Startup**

Collect Date: **07/07/14 09:13**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	23000 mg/L		07/07/14 13:34	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	1700 mg/L		07/07/14 11:50	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	270 mg/L		07/07/14 12:15	ACV	SM(18) 4500 NH3 F 04KS
<u>Soluble Metals - STL</u>					
Zinc	2.2 mg/L		07/07/14 14:39	WPS	EPA 200.7 R4.4 04KS
<u>Total Metals - STL</u>					
Zinc	3.6 mg/L		07/07/14 14:41	WPS	EPA 200.7 R4.4 04KS

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411084 - 04-No Prep WC								
Calibration Blank (B411084-CCB1)			Prepared & Analyzed: 07/07/14					
COD	-0.00477	mg/L						
Calibration Blank (B411084-CCB2)			Prepared & Analyzed: 07/07/14					
COD	-5.07	mg/L						
Calibration Check (B411084-CCV1)			Prepared & Analyzed: 07/07/14					
COD	99.0	mg/L	100.0		99	95-105		
Calibration Check (B411084-CCV2)			Prepared & Analyzed: 07/07/14					
COD	495	mg/L	500.0		99	95-105		
Duplicate (B411084-DUP1)			Prepared & Analyzed: 07/07/14					
COD	22.7	mg/L		22.2			2	20
Duplicate (B411084-DUP2)			Prepared & Analyzed: 07/07/14					
COD	23400	mg/L		23200			0.5	20
Batch B411093 - 04-No Prep WC								
Blank (B411093-BLK1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411093-BS1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	99.0	mg/L	100.0		99	82.9-110		
Duplicate (B411093-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	2500	mg/L		2420			3	5
Duplicate (B411093-DUP2)			Prepared & Analyzed: 07/07/14					
Solids - total suspended solids (TSS)	4740	mg/L		4800			1	5
Batch B411127 - 04-No Prep WC								
Duplicate (B411127-DUP1)			Prepared & Analyzed: 07/07/14					
Solids - total volatile suspended solids	2020	mg/L		2020			0	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Blank (B411134-CCB1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411134 - 04-No Prep WC								
Calibration Check (B411134-CCV1)			Prepared & Analyzed: 07/07/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411134-MS1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	363	mg/L	100.0	268	95	80-120		
Matrix Spike Dup (B411134-MSD1)			Source: 4070829-02 Prepared & Analyzed: 07/07/14					
Ammonia-N	365	mg/L	100.0	268	97	80-120	0.5	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411194 - 04-No Prep WC								
Blank (B411194-BLK1)			Prepared & Analyzed: 07/07/14					
Phosphorus - ortho as P	< 0.050	mg/L						
LCS (B411194-BS1)			Prepared & Analyzed: 07/07/14					
Phosphorus - ortho as P	0.533	mg/L	0.5000		107	80-120		

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411095 - 04 EPA 200.2 R2.8								
Blank (B411095-BLK1)			Prepared & Analyzed: 07/07/14					
Zinc	< 0.020	mg/L						
LCS (B411095-BS1)			Prepared & Analyzed: 07/07/14					
Zinc	0.200	mg/L	0.2000		100	85-115		
Matrix Spike (B411095-MS1)			Source: 4070616-01RE1 Prepared & Analyzed: 07/07/14					
Zinc	1.12	mg/L	1.000	0.0694	105	70-130		
Matrix Spike Dup (B411095-MSD1)			Source: 4070616-01RE1 Prepared & Analyzed: 07/07/14					
Zinc	1.14	mg/L	1.000	0.0694	107	70-130	1	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411095 - 04 EPA 200.2 R2.8								

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Laboratory Results**Soluble Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Blank (B411095-BLK1)			Prepared & Analyzed: 07/07/14					
Zinc	< 0.020	mg/L						
LCS (B411095-BS1)			Prepared & Analyzed: 07/07/14					
Zinc	0.200	mg/L	0.2000		100	85-115		
Matrix Spike (B411095-MS1)			Prepared & Analyzed: 07/07/14					
Zinc	1.12	mg/L	1.000	0.0694	105	70-130		
Matrix Spike Dup (B411095-MSD1)			Prepared & Analyzed: 07/07/14					
Zinc	1.14	mg/L	1.000	0.0694	107	70-130	1	20

Batch B411236 - 04 EPA 200.2 R2.8

Blank (B411236-BLK1)			Prepared: 07/08/14 Analyzed: 07/09/14					
Zinc	< 0.020	mg/L						
LCS (B411236-BS1)			Prepared: 07/08/14 Analyzed: 07/09/14					
Zinc	0.215	mg/L	0.2000		107	85-115		
Matrix Spike (B411236-MS1)			Prepared: 07/08/14 Analyzed: 07/09/14					
Zinc	1.15	mg/L	1.000	0.112	103	70-130		
Matrix Spike Dup (B411236-MSD1)			Prepared: 07/08/14 Analyzed: 07/09/14					
Zinc	1.16	mg/L	1.000	0.112	105	70-130	2	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411117 - 04-IC No Prep								
Calibration Blank (B411117-CCB1)			Prepared & Analyzed: 07/07/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B411117-CCV1)			Prepared & Analyzed: 07/07/14					
Nitrate-N	1.22	mg/L	1.130		108	90-110		
Nitrite-N	2.12	mg/L	2.000		106	90-110		
Matrix Spike (B411117-MS1)			Prepared & Analyzed: 07/07/14					
Nitrite-N	Q4 88.7	mg/L	2.500	89.6	NR	80-120		
Nitrate-N	Q1 3.5	mg/L	1.130	2.7	72	80-120		
Matrix Spike Dup (B411117-MSD1)			Prepared & Analyzed: 07/07/14					
Nitrite-N	Q4 86.3	mg/L	2.500	89.6	NR	80-120	3	20
Nitrate-N	Q2 3.5	mg/L	1.130	2.7	73	80-120	0.4	20



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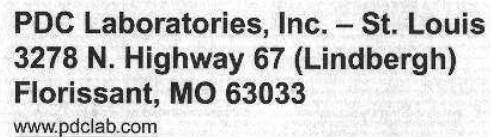
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Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.
- Q2 MSD failed %R
- Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor



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Revised Laboratory Results

Sample No: **4070959-01**
Sample Description: **T3 Startup**

Collect Date: **07/08/14 09:14**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	250 mg/L		07/09/14 10:07	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/09/14 10:07	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	2600 mg/L		07/09/14 09:23	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3200 mg/L		07/08/14 12:20	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1600 mg/L		07/09/14 10:15	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.30 mg/L		07/09/14 10:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4070959-02**
Sample Description: **T2 Startup**

Collect Date: **07/08/14 09:10**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	22000 mg/L		07/09/14 09:24	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2200 mg/L		07/08/14 12:20	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	290 mg/L		07/09/14 10:30	ACV	SM(18) 4500 NH3 04KS F

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Revised Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411201 - 04-No Prep WC

Blank (B411201-BLK1)		Prepared & Analyzed: 07/08/14						
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411201-BS1)		Prepared & Analyzed: 07/08/14						
Solids - total suspended solids (TSS)	94.0	mg/L	100.0	94	82.9-110			
Duplicate (B411201-DUP1)		Prepared & Analyzed: 07/08/14						
Solids - total suspended solids (TSS)	3240	mg/L		3160			2	5
Duplicate (B411201-DUP2)		Prepared & Analyzed: 07/08/14						
Solids - total suspended solids (TSS)	1460	mg/L		1500			3	5

Batch B411250 - 04-No Prep WC

Calibration Blank (B411250-CCB1)		Prepared: 07/08/14 Analyzed: 07/09/14						
COD	-0.00477	mg/L						
Calibration Blank (B411250-CCB2)		Prepared: 07/08/14 Analyzed: 07/09/14						
COD	-5.07	mg/L						
Calibration Check (B411250-CCV1)		Prepared: 07/08/14 Analyzed: 07/09/14						
COD	99.0	mg/L	100.0	99	95-105			
Calibration Check (B411250-CCV2)		Prepared: 07/08/14 Analyzed: 07/09/14						
COD	480	mg/L	500.0	96	95-105			
Duplicate (B411250-DUP1)		Prepared: 07/08/14 Analyzed: 07/09/14						
COD	13.8	mg/L		14.4			4	20
Duplicate (B411250-DUP2)		Prepared: 07/08/14 Analyzed: 07/09/14						
COD	21600	mg/L		21500			0.5	20

Batch B411294 - 04-No Prep WC

Duplicate (B411294-DUP1)		Prepared & Analyzed: 07/09/14						
Solids - total volatile suspended solids	1600	mg/L		1580			1	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411299 - 04-No Prep WC

Blank (B411299-BLK1)		Prepared & Analyzed: 07/09/14						
Ammonia-N	< 0.10	mg/L						
LCS (B411299-BS1)		Prepared & Analyzed: 07/09/14						

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Revised Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411299 - 04-No Prep WC								
LCS (B411299-BS1)			Prepared & Analyzed: 07/09/14					
Ammonia-N	10.2	mg/L	10.00		102	80-120		
Matrix Spike (B411299-MS1)			Source: 4071016-02 Prepared & Analyzed: 07/09/14					
Ammonia-N	10.1	mg/L	10.00	0.207	99	80-120		
Matrix Spike Dup (B411299-MSD1)			Source: 4071016-02 Prepared & Analyzed: 07/09/14					
Ammonia-N	10.1	mg/L	10.00	0.207	99	80-120	0	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411301 - 04-IC No Prep								
Calibration Blank (B411301-CCB1)			Prepared & Analyzed: 07/10/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B411301-CCV1)			Prepared & Analyzed: 07/10/14					
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Nitrite-N	2.07	mg/L	2.000		103	90-110		
Matrix Spike (B411301-MS1)			Source: 4071263-03 Prepared & Analyzed: 07/10/14					
Nitrate-N	9.8	mg/L	11.30	ND	86	80-120		
Nitrite-N	20.4	mg/L	25.00	ND	81	80-120		
Matrix Spike Dup (B411301-MSD1)			Source: 4071263-03 Prepared & Analyzed: 07/10/14					
Nitrite-N	Q2 25.7	mg/L	25.00	ND	103	80-120	23	20
Nitrate-N	12	mg/L	11.30	ND	102	80-120	17	20



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Q2 MSD failed %R

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Date Received: 07/09/14 10:41
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Customer #: 277310
PO#: 4167739

Laboratory Results

Sample No: **4071265-01**
Sample Description: **T3 Startup**

Collect Date: **07/09/14 09:30**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	230 mg/L		07/09/14 11:52	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/09/14 11:52	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	3100 mg/L		07/10/14 07:37	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	3600 mg/L		07/09/14 15:50	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1800 mg/L		07/10/14 08:30	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.35 mg/L		07/09/14 10:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4071265-02**
Sample Description: **T2 Startup**

Collect Date: **07/09/14 09:10**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	22000 mg/L		07/10/14 07:37	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	2000 mg/L		07/09/14 15:50	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	260 mg/L		07/09/14 10:30	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/09/14 10:41
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 Customer #: 277310
 PO#: 4167739

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411323 - 04-No Prep WC								
Calibration Blank (B411323-CCB1)			Prepared: 07/09/14 Analyzed: 07/10/14					
COD	-1.05	mg/L						
Calibration Blank (B411323-CCB2)			Prepared: 07/09/14 Analyzed: 07/10/14					
COD	-5.07	mg/L						
Calibration Check (B411323-CCV1)			Prepared: 07/09/14 Analyzed: 07/10/14					
COD	98.7	mg/L	100.0		99	95-105		
Calibration Check (B411323-CCV2)			Prepared: 07/09/14 Analyzed: 07/10/14					
COD	480	mg/L	500.0		96	95-105		
Duplicate (B411323-DUP1)			Prepared: 07/09/14 Analyzed: 07/10/14					
COD	29.0	mg/L		29.2			0.9	20
Duplicate (B411323-DUP2)			Prepared: 07/09/14 Analyzed: 07/10/14					
COD	21800	mg/L		22300			2	20
Batch B411324 - 04-No Prep WC								
Blank (B411324-BLK1)			Prepared & Analyzed: 07/09/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411324-BS1)			Prepared & Analyzed: 07/09/14					
Solids - total suspended solids (TSS)	96.0	mg/L	100.0		96	82.9-110		
Duplicate (B411324-DUP1)			Prepared & Analyzed: 07/09/14					
Solids - total suspended solids (TSS)	3800	mg/L		3600			5	5
Duplicate (B411324-DUP2)			Prepared & Analyzed: 07/09/14					
Solids - total suspended solids (TSS)	M 158	mg/L		144			9	5
Batch B411379 - 04-No Prep WC								
Duplicate (B411379-DUP1)			Prepared & Analyzed: 07/10/14					
Solids - total volatile suspended solids	1800	mg/L		1760			2	5
Nutrients - Quality Control								
Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411299 - 04-No Prep WC								
Blank (B411299-BLK1)			Prepared & Analyzed: 07/09/14					
Ammonia-N	< 0.10	mg/L						
LCS (B411299-BS1)			Prepared & Analyzed: 07/09/14					

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411299 - 04-No Prep WC								
LCS (B411299-BS1)			Prepared & Analyzed: 07/09/14					
Ammonia-N	10.2	mg/L	10.00		102	80-120		
Matrix Spike (B411299-MS1)			Source: 4071016-02 Prepared & Analyzed: 07/09/14					
Ammonia-N	10.1	mg/L	10.00	0.207	99	80-120		
Matrix Spike Dup (B411299-MSD1)			Source: 4071016-02 Prepared & Analyzed: 07/09/14					
Ammonia-N	10.1	mg/L	10.00	0.207	99	80-120	0	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411301 - 04-IC No Prep								
Calibration Blank (B411301-CCB1)			Prepared & Analyzed: 07/10/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B411301-CCV1)			Prepared & Analyzed: 07/10/14					
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Nitrite-N	2.07	mg/L	2.000		103	90-110		
Matrix Spike (B411301-MS1)			Source: 4071263-03 Prepared & Analyzed: 07/10/14					
Nitrate-N	9.8	mg/L	11.30	ND	86	80-120		
Nitrite-N	20.4	mg/L	25.00	ND	81	80-120		
Matrix Spike Dup (B411301-MSD1)			Source: 4071263-03 Prepared & Analyzed: 07/10/14					
Nitrate-N	12	mg/L	11.30	ND	102	80-120	17	20
Nitrite-N	Q2 25.7	mg/L	25.00	ND	103	80-120	23	20



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Laboratory Results

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UST Certification; Iowa (240)

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TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

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Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Q2 MSD failed %R

M Analyte failed to meet the required acceptance criteria for duplicate analysis.

Certified by: Roxann Shull, Client Services Supervisor

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St. Louis, MO 63044
Attn: A Karlas

Date Received: 07/10/14 11:55
Report Date: 07/15/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4071684-01**
Sample Description: **T3 Startup**

Collect Date: **07/10/14 10:00**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Anions - STL					
Nitrate-N	270 mg/L		07/11/14 09:32	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/11/14 09:32	DWM	EPA 300.0 R2.1 04KS
General Chemistry - STL					
Alkalinity - total as CaCO ₃	1400 mg/L		07/11/14 14:30	ACV	SM 2320B 18Ed*
BOD - soluble	< 100 mg/L		07/10/14 12:30	DAS	SM 5210B 18Ed*
COD	1400 mg/L		07/11/14 13:41	DAW	SM 5220D 18Ed 04KS
COD - soluble	800 mg/L		07/11/14 13:42	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	6000 mg/L		07/10/14 16:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	3200 mg/L		07/10/14 16:10	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2200 mg/L		07/11/14 13:30	DAW	SM 2540E 18Ed*
Nutrients - STL					
Ammonia-N	0.49 mg/L		07/11/14 10:15	ACV	SM(18) 4500 NH ₃ F 04KS
Soluble Metals - STL					
Arsenic	0.13 mg/L		07/11/14 12:05	WPS	EPA 200.7 R4.4 04KS
Zinc	0.14 mg/L		07/11/14 12:05	WPS	EPA 200.7 R4.4 04KS
Soluble Nutrients - STL					
Phosphorus - ortho as P	< 0.050 mg/L		07/10/14 15:00	ACV	SM 4500P B E 18ed*
Total Metals - STL					
Arsenic	0.25 mg/L		07/11/14 12:07	WPS	EPA 200.7 R4.4 04KS
Hardness	2100 mg/L		07/11/14 12:04	WPS	SM 2340B
Calcium	630 mg/L		07/11/14 12:04	WPS	EPA 200.7 R4.4 04KS
Magnesium	120 mg/L		07/11/14 12:04	WPS	EPA 200.7 R4.4 04KS
Zinc	2.1 mg/L		07/11/14 12:07	WPS	EPA 200.7 R4.4 04KS

Sample No: **4071684-02**
Sample Description: **T4 Startup**

Collect Date: **07/10/14 09:50**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - STL					
Solids - total suspended solids (TSS)	3200 mg/L		07/10/14 16:10	DAW	SM 2540D 18Ed 04KS



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Attn: A Karlas

Date Received: 07/10/14 11:55
Report Date: 07/15/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4071684-02**
Sample Description: **T4 Startup**

Collect Date: **07/10/14 09:50**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total volatile suspended solids	1400 mg/L		07/11/14 13:30	DAW	SM 2540E 18Ed*

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411353 - 04-No Prep WC								
Duplicate (B411353-DUP3)	Source: 4071684-01	Prepared & Analyzed: 07/10/14						
BOD - soluble	< 6.0	mg/L		ND				20
Batch B411402 - 04-No Prep WC								
Blank (B411402-BLK1)		Prepared & Analyzed: 07/10/14						
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B411402-BS1)		Prepared & Analyzed: 07/10/14						
Solids - total dissolved solids (TDS)	1000	mg/L	1000		100	75.1-119		
Duplicate (B411402-DUP1)	Source: 4071580-06	Prepared & Analyzed: 07/10/14						
Solids - total dissolved solids (TDS)	747	mg/L		744			0.4	5
Batch B411413 - 04-No Prep WC								
Blank (B411413-BLK1)		Prepared & Analyzed: 07/10/14						
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411413-BS1)		Prepared & Analyzed: 07/10/14						
Solids - total suspended solids (TSS)	97.0	mg/L	100.0		97	82.9-110		
Duplicate (B411413-DUP1)	Source: 4071611-01	Prepared & Analyzed: 07/10/14						
Solids - total suspended solids (TSS)	0.800	mg/L		0.400			67	5
Batch B411416 - 04-No Prep WC								
Calibration Blank (B411416-CCB1)		Prepared: 07/10/14 Analyzed: 07/11/14						
COD	-1.00	mg/L						
Calibration Blank (B411416-CCB2)		Prepared: 07/10/14 Analyzed: 07/11/14						
COD	-5.10	mg/L						
Calibration Check (B411416-CCV1)		Prepared: 07/10/14 Analyzed: 07/11/14						
COD	98.4	mg/L	100.0		98	95-105		
Calibration Check (B411416-CCV2)		Prepared: 07/10/14 Analyzed: 07/11/14						
COD	491	mg/L	500.0		98	95-105		
Duplicate (B411416-DUP1)	Source: 4070638-02	Prepared: 07/10/14 Analyzed: 07/11/14						
COD	< 5.0	mg/L		ND				20
Duplicate (B411416-DUP2)	Source: 4071684-01	Prepared: 07/10/14 Analyzed: 07/11/14						
COD	1380	mg/L		1410			2	20
Duplicate (B411416-DUP3)	Source: 4071684-01	Prepared: 07/10/14 Analyzed: 07/11/14						
COD - soluble	796	mg/L		796			0	200

Batch B411495 - 04-No Prep WC

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PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411495 - 04-No Prep WC

Duplicate (B411495-DUP1)	Source: 4071892-01	Prepared & Analyzed: 07/11/14						
Solids - total volatile suspended solids	2040	mg/L		2000			2	5

Batch B411504 - 04-No Prep WC

Blank (B411504-BLK1)	Prepared & Analyzed: 07/11/14							
Alkalinity - total as CaCO ₃	< 20	mg/L						
Duplicate (B411504-DUP1)	Source: 4071384-01	Prepared & Analyzed: 07/11/14						
Alkalinity - total as CaCO ₃	5000	mg/L		4960			0.8	20

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411500 - 04-No Prep WC

Blank (B411500-BLK1)	Prepared & Analyzed: 07/11/14							
Ammonia-N	< 0.10	mg/L						
LCS (B411500-BS1)	Prepared & Analyzed: 07/11/14							
Ammonia-N	10.2	mg/L	10.00		102	80-120		
Matrix Spike (B411500-MS1)	Source: 4071786-01	Prepared & Analyzed: 07/11/14						
Ammonia-N	10.5	mg/L	10.00	0.791	97	80-120		
Matrix Spike Dup (B411500-MSD1)	Source: 4071786-01	Prepared & Analyzed: 07/11/14						
Ammonia-N	10.4	mg/L	10.00	0.791	96	80-120	1	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411511 - 04-No Prep WC

Matrix Spike (B411511-MS1)	Source: 4071684-01	Prepared & Analyzed: 07/09/14						
Phosphorus - ortho as P	0.502	mg/L	0.5000	ND	100	80-120		
Matrix Spike Dup (B411511-MSD1)	Source: 4071684-01	Prepared & Analyzed: 07/09/14						
Phosphorus - ortho as P	0.502	mg/L	0.5000	ND	100	80-120	0	20

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Laboratory Results**Total Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411430 - 04 EPA 200.2 R2.8								
Blank (B411430-BLK1)			Prepared & Analyzed: 07/11/14					
Arsenic	< 0.010	mg/L						
Calcium	< 0.19	mg/L						
Magnesium	< 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B411430-BS1)			Prepared & Analyzed: 07/11/14					
Arsenic	0.202	mg/L	0.2000		101	85-115		
Calcium	0.206	mg/L	0.2000		103	85-115		
Magnesium	0.215	mg/L	0.2000		108	85-115		
Zinc	0.208	mg/L	0.2000		104	85-115		
Matrix Spike (B411430-MS1)			Source: 4071684-01		Prepared & Analyzed: 07/11/14			
Arsenic	1.21	mg/L	1.000	0.246	96	70-130		
Calcium	Q4 571	mg/L	1.000	634	NR	70-130		
Magnesium	Q4 110	mg/L	1.000	123	NR	70-130		
Zinc	3.12	mg/L	1.000	2.07	105	70-130		
Matrix Spike Dup (B411430-MSD1)			Source: 4071684-01		Prepared & Analyzed: 07/11/14			
Arsenic	1.21	mg/L	1.000	0.246	97	70-130	0.3	20
Calcium	Q4 575	mg/L	1.000	634	NR	70-130	0.7	20
Magnesium	Q4 110	mg/L	1.000	123	NR	70-130	0.2	20
Zinc	3.12	mg/L	1.000	2.07	105	70-130	0.1	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411430 - 04 EPA 200.2 R2.8								
Blank (B411430-BLK1)			Prepared & Analyzed: 07/11/14					
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						
LCS (B411430-BS1)			Prepared & Analyzed: 07/11/14					
Arsenic	0.202	mg/L	0.2000		101	85-115		
Zinc	0.208	mg/L	0.2000		104	85-115		

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Laboratory Results

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411482 - 04-IC No Prep								
Calibration Blank (B411482-CCB1)			Prepared & Analyzed: 07/11/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B411482-CCV1)			Prepared & Analyzed: 07/11/14					
Nitrate-N	1.20	mg/L	1.130		107	90-110		
Nitrite-N	2.07	mg/L	2.000		104	90-110		
Matrix Spike (B411482-MS1)			Prepared & Analyzed: 07/11/14					
Nitrate-N	12	mg/L	11.30	ND	103	80-120		
Nitrite-N	23.6	mg/L	25.00	ND	94	80-120		
Matrix Spike Dup (B411482-MSD1)			Prepared & Analyzed: 07/11/14					
Nitrite-N	24.4	mg/L	25.00	ND	98	80-120	4	20
Nitrate-N	12	mg/L	11.30	ND	106	80-120	3	20



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SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Certified by: Roxann Shull, Client Services Supervisor

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State where samples collected MO

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 Attn: Bill Abernathy

Date Received: 07/10/14 15:14
 Report Date: 07/17/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results

Sample No: **4071748-01**
 Sample Description: **D1-770**

Collect Date: **07/10/14 14:10**
 Matrix: **Drinking Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method	
<u>Anions - PIA</u>						
Chloride	21 mg/L		07/15/14 13:28	TAS	EPA 300.0 R2.1	IL,KS,IA,WI,AR
<u>General Chemistry - PIA</u>						
Alkalinity - total as CaCO ₃	47 mg/L		07/15/14 09:55	BNS	SM 2320B 18Ed	IL,KS,IA,MO,WI,AR
pH	8.06 pH Units	H	07/16/14 13:25	sjw	SM 4500-H B 18Ed - EPA 150.1 - SW 9040B	KS,IL,IA,AR
Solids - total dissolved solids (TDS)	310 mg/L		07/14/14 13:40	MHJ	SM 2540C 18Ed	KS,IL,IA,WI,AR
Total Organic Carbon (TOC)	69 mg/L		07/11/14 18:03	TAS	5310C	KS,IL,IA,WI,AR
<u>Total Metals - PIA</u>						
Turbidity	8.7 NTU	H	07/14/14 16:18	KJP	EPA 180.1	KS,IL,IA,AR
Antimony	< 3.0 ug/L		07/15/14 13:00	KMC	200.8	IL,KS,IA,MO,WI,IN
Arsenic	4.4 ug/L		07/15/14 16:08	KMC	200.8	IL,KS,IA,MO,WI,IN
Barium	2.7 ug/L		07/15/14 13:00	KMC	200.8	IL,KS,IA,MO,WI,IN
Beryllium	< 1.0 ug/L		07/15/14 13:00	KMC	200.8	IL,KS,IA,MO,WI,IN
Hardness	2.4 mg/L		07/14/14 14:57	JMW	SM 2340B 18 Ed	
Cadmium	< 1.0 ug/L		07/15/14 16:08	KMC	200.8	IL,KS,IA,MO,WI,IN
Calcium	0.84 mg/L		07/14/14 14:57	JMW	EPA 200.7 R4.4	IL,KS,IA,MO
Chromium	< 4.0 ug/L		07/16/14 14:25	KMC	200.8	IL,KS,IA,MO,WI,IN
Iron	0.29 mg/L		07/14/14 14:58	JMW	200.7	IL,KS,MO
Lead	14 ug/L		07/15/14 16:08	KMC	200.8	IL,KS,IA,MO,WI,IN
Magnesium	0.070 mg/L		07/14/14 14:57	JMW	EPA 200.7 R4.4	IL,KS,MO
Nickel	< 5.0 ug/L		07/15/14 16:08	KMC	200.8	IL,KS,IA,WI,IN
Selenium	< 5.0 ug/L		07/15/14 16:08	KMC	200.8	IL,KS,IA,MO,WI,IN
Sodium	81 mg/L		07/14/14 14:57	JMW	EPA 200.7 R4.4	IL,KS,IA,MO,WI
Zinc	59 ug/L		07/15/14 16:08	KMC	200.8	IL,KS,MO

**PDC Laboratories, Inc.**

3278 N Highway 67 • Florissant, MO 63033
 (314) 432-0550 • (800) 333-FAST • FAX (314) 432-4977



Bridgeton Landfill
 13570 St Charles Rock Road
 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/10/14 15:14
 Report Date: 07/17/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411577 - No Prep								
Blank (B411577-BLK1)			Prepared & Analyzed: 07/14/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
Duplicate (B411577-DUP1)			Source: 4071917-01 Prepared & Analyzed: 07/14/14					
Solids - total dissolved solids (TDS)	470	mg/L		470			0	5
Duplicate (B411577-DUP2)			Source: 4072009-01 Prepared & Analyzed: 07/14/14					
Solids - total dissolved solids (TDS)	1220	mg/L		1270			4	5
Batch B411656 - No Prep								
Blank (B411656-BLK1)			Prepared & Analyzed: 07/15/14					
Alkalinity - total as CaCO ₃	< 2.0	mg/L						
LCS (B411656-BS1)			Prepared & Analyzed: 07/15/14					
Alkalinity - total as CaCO ₃	90.0	mg/L	86.30		104	90-110		
Duplicate (B411656-DUP1)			Source: 4071236-01 Prepared & Analyzed: 07/15/14					
Alkalinity - total as CaCO ₃	365	mg/L		365			0	20
Batch B411664 - No Prep								
Calibration Blank (B411664-CCB1)			Prepared & Analyzed: 07/11/14					
Total Organic Carbon (TOC)	0.0800	mg/L						
Calibration Check (B411664-CCV1)			Prepared & Analyzed: 07/11/14					
Total Organic Carbon (TOC)	5.18	mg/L	5.000		104	90-110		
Matrix Spike (B411664-MS1)			Source: 4071723-01 Prepared & Analyzed: 07/11/14					
Total Organic Carbon (TOC)	5.03	mg/L	5.000	ND	101	80-120		
Matrix Spike (B411664-MS2)			Source: 4070695-01 Prepared & Analyzed: 07/11/14					
Total Organic Carbon (TOC)	8.43	mg/L	5.000	4.18	85	80-120		
Matrix Spike Dup (B411664-MSD1)			Source: 4071723-01 Prepared & Analyzed: 07/11/14					
Total Organic Carbon (TOC)	5.47	mg/L	5.000	ND	109	80-120	8	20
Matrix Spike Dup (B411664-MSD2)			Source: 4070695-01 Prepared & Analyzed: 07/11/14					
Total Organic Carbon (TOC)	8.52	mg/L	5.000	4.18	87	80-120	1	20
Batch B411790 - No Prep								
Duplicate (B411790-DUP1)			Source: 4071069-01 Prepared & Analyzed: 07/16/14					
pH	H	9.45	pH Units	9.43			0.2	10
Duplicate (B411790-DUP2)			Source: 4071484-03 Prepared & Analyzed: 07/16/14					
pH	H	7.68	pH Units	7.67			0.08	10
Duplicate (B411790-DUP3)			Source: 4071547-01 Prepared & Analyzed: 07/16/14					

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 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/10/14 15:14
 Report Date: 07/17/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte		Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411790 - No Prep									
Duplicate (B411790-DUP3)		Source: 4071547-01		Prepared & Analyzed: 07/16/14					
pH	H	6.88	pH Units		6.86			0.3	10
Duplicate (B411790-DUP4)		Source: 4071591-02		Prepared & Analyzed: 07/16/14					
pH	H	7.78	pH Units		7.78			0.05	10

Total Metals - Quality Control

Analyte		Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411553 - DW 200.7 no prep									
Blank (B411553-BLK1)		Prepared & Analyzed: 07/14/14							
Calcium		< 0.050	mg/L						
Iron		< 0.010	mg/L						
Magnesium		< 0.050	mg/L						
Sodium		< 0.50	mg/L						
LCS (B411553-BS1)		Prepared & Analyzed: 07/14/14							
Calcium		48.3	mg/L	50.00		97	85-115		
Iron		0.514	mg/L	0.5000		103	85-115		
Magnesium		47.1	mg/L	50.00		94	85-115		
Sodium		47.1	mg/L	50.00		94	85-115		
Matrix Spike (B411553-MS1)		Source: 4071688-01		Prepared & Analyzed: 07/14/14					
Calcium		76.6	mg/L	50.00	30.9	91	70-130		
Iron		0.515	mg/L	0.5000	0.00904	101	70-130		
Magnesium		49.1	mg/L	50.00	2.62	93	70-130		
Sodium		56.4	mg/L	50.00	8.52	96	70-130		
Matrix Spike Dup (B411553-MSD1)		Source: 4071688-01		Prepared & Analyzed: 07/14/14					
Calcium		77.0	mg/L	50.00	30.9	92	70-130	0.5	20
Iron		0.503	mg/L	0.5000	0.00904	99	70-130	2	20
Magnesium		48.5	mg/L	50.00	2.62	92	70-130	1	20
Sodium		56.4	mg/L	50.00	8.52	96	70-130	0.003	20

Batch B411647 - DW 200.8 no prep

Blank (B411647-BLK1)		Prepared & Analyzed: 07/15/14							
Antimony		< 3.0	ug/L						
Arsenic		< 1.0	ug/L						
Barium		< 1.0	ug/L						
Beryllium		< 1.0	ug/L						
Cadmium		1.28	ug/L						

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 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/10/14 15:14
 Report Date: 07/17/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**Total Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411647 - DW 200.8 no prep								
Blank (B411647-BLK1)			Prepared & Analyzed: 07/15/14					
Chromium	< 4.0	ug/L						
Lead	< 1.0	ug/L						
Nickel	< 5.0	ug/L						
Selenium	< 5.0	ug/L						
Zinc	< 6.0	ug/L						
Blank (B411647-BLK2)			Prepared & Analyzed: 07/16/14					
Selenium	< 5.0	ug/L						
LCS (B411647-BS1)			Prepared & Analyzed: 07/15/14					
Antimony	518	ug/L	500.0		104	85-115		
Arsenic	567	ug/L	500.0		113	85-115		
Barium	546	ug/L	500.0		109	85-115		
Beryllium	538	ug/L	500.0		108	85-115		
Cadmium	561	ug/L	500.0		112	85-115		
Chromium	502	ug/L	500.0		100	85-115		
Lead	568	ug/L	500.0		114	85-115		
Nickel	542	ug/L	500.0		108	85-115		
Selenium	585	ug/L	500.0		117	85-115		
Zinc	566	ug/L	500.0		113	85-115		
LCS (B411647-BS2)			Prepared & Analyzed: 07/16/14					
Selenium	559	ug/L	500.0		112	85-115		
Matrix Spike (B411647-MS1)			Source: 4071517-01		Prepared & Analyzed: 07/15/14			
Antimony	525	ug/L	500.0	ND	105	70-130		
Arsenic	571	ug/L	500.0	1.90	114	70-130		
Barium	636	ug/L	500.0	109	105	70-130		
Beryllium	541	ug/L	500.0	ND	108	70-130		
Cadmium	561	ug/L	500.0	0.126	112	70-130		
Chromium	491	ug/L	500.0	2.64	98	70-130		
Lead	551	ug/L	500.0	ND	110	70-130		
Nickel	558	ug/L	500.0	4.69	111	70-130		
Selenium	604	ug/L	500.0	4.55	120	70-130		
Zinc	563	ug/L	500.0	6.11	111	70-130		
Matrix Spike (B411647-MS2)			Source: 4071688-01		Prepared & Analyzed: 07/15/14			
Antimony	535	ug/L	500.0	0.166	107	70-130		
Arsenic	568	ug/L	500.0	1.35	113	70-130		
Barium	555	ug/L	500.0	20.9	107	70-130		
Beryllium	539	ug/L	500.0	ND	108	70-130		
Cadmium	559	ug/L	500.0	0.0660	112	70-130		

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Bridgeton Landfill
 13570 St Charles Rock Road
 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/10/14 15:14
 Report Date: 07/17/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**Total Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411647 - DW 200.8 no prep								
Matrix Spike (B411647-MS2)	Source: 4071688-01	Prepared & Analyzed: 07/15/14						
Chromium	515	ug/L	500.0	0.888	103	70-130		
Lead	565	ug/L	500.0	ND	113	70-130		
Nickel	556	ug/L	500.0	2.19	111	70-130		
Selenium	597	ug/L	500.0	ND	119	70-130		
Zinc	583	ug/L	500.0	ND	117	70-130		
Matrix Spike (B411647-MS3)	Source: 4071517-01	Prepared & Analyzed: 07/16/14						
Selenium	594	ug/L	500.0	4.55	118	70-130		
Matrix Spike Dup (B411647-MSD1)	Source: 4071517-01	Prepared & Analyzed: 07/15/14						
Antimony	553	ug/L	500.0	ND	111	70-130	5	20
Arsenic	582	ug/L	500.0	1.90	116	70-130	2	20
Barium	649	ug/L	500.0	109	108	70-130	2	20
Beryllium	556	ug/L	500.0	ND	111	70-130	3	20
Cadmium	562	ug/L	500.0	0.126	112	70-130	0.3	20
Chromium	539	ug/L	500.0	2.64	107	70-130	9	20
Lead	572	ug/L	500.0	ND	114	70-130	4	20
Nickel	540	ug/L	500.0	4.69	107	70-130	3	20
Selenium	602	ug/L	500.0	4.55	120	70-130	0.3	20
Zinc	598	ug/L	500.0	6.11	118	70-130	6	20
Matrix Spike Dup (B411647-MSD2)	Source: 4071688-01	Prepared & Analyzed: 07/15/14						
Antimony	535	ug/L	500.0	0.166	107	70-130	0.03	20
Arsenic	572	ug/L	500.0	1.35	114	70-130	0.8	20
Barium	529	ug/L	500.0	20.9	102	70-130	5	20
Beryllium	538	ug/L	500.0	ND	108	70-130	0.3	20
Cadmium	558	ug/L	500.0	0.0660	112	70-130	0.06	20
Chromium	497	ug/L	500.0	0.888	99	70-130	4	20
Lead	569	ug/L	500.0	ND	114	70-130	0.7	20
Nickel	535	ug/L	500.0	2.19	107	70-130	4	20
Selenium	596	ug/L	500.0	ND	119	70-130	0.07	20
Zinc	579	ug/L	500.0	ND	116	70-130	0.7	20
Matrix Spike Dup (B411647-MSD3)	Source: 4071517-01	Prepared & Analyzed: 07/16/14						
Selenium	586	ug/L	500.0	4.55	116	70-130	1	20



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Date Received: 07/10/14 15:14
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Customer #: 277310
PO#: 4468816

Laboratory Results

Notes

This report shall not be reproduced, except in full, without the written approval of the laboratory.

PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations.
Endorsement by Federal or State Governments or their agencies is not implied.

PIA PDC Laboratories - Peoria, IL

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Pc Chemical preservation discrepancy noted at the time of analysis

H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488

Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1

CLIENT

RSI / Bridgeton LF

PROJECT NUMBER

Leachate

P.O. NUMBER

MEANS SHIPPED

ADDRESS

PHONE NUMBER

217-823-0000

FAX NUMBER

EMAIL ADDRESS

CITY

Bridgeton

STATE

ZIP

SAMPLER

Arnon Weber

MATRIX TYPES:

WW-WASTEWATER
 DW-DRINKING WATER
 GW-GROUND WATER
 WWSL-SLUDGE
 NAS-SOLID
 LCHT-LEACHATE
 NAL-NON-AQUEOUS
 SOIL-SOILS

CONTACT PERSON

Arnon Weber

SAMPLER'S SIGNATURE

Arnon Weber

3

ANALYSIS REQUESTED

Alkalinity

PH / TDS

Hardness

Total Metal

Toc

Turbidity

Chlorides

4

(FOR LAB USE ONLY)

LOGIN #

4077748

LOGGED BY:

HE

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

2

SAMPLE DESCRIPTION

AS YOU WANT ON REPORT

DATE COLLECTED

TIME COLLECTED

SAMPLE TYPE

MATRIX

Bottle Count

01-770

7-10-14

2:10pm

X

DW

2

REMARKS

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days)

RUSH (5 Bus. Days)

Fastrak™ (3 Bus. Days)

1-2 Bus. Days

Same Day

DATE DUE

7-11-12

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE

7

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

8

COMMENTS: (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLE(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

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Thank you for using PDC Laboratories, Inc. Locations in Peoria, IL; St. Louis, MO; and Springfield, MO

PAGE _____ OF _____

Roxann Shull

From: Bill Abernathy <babernathy@feezorengineering.com>
Sent: Thursday, July 10, 2014 7:32 AM
To: Keen, Michael; Roxann Shull; Keith Earhart; Arron Weber
Cc: Kamp, Kevin; Dan Feezor; bpower@republicservices.com; Bouchard, Derek (DBouchard@republicservices.com); Aaron Karlas; jwmorris@stovergroup.com; Cooper, Ivan; Ruocco, Ron
Subject: RE: New Bridgeton startup sampling schedule

Where's this sample collected Michael?

Bill Abernathy
Residuals Management Team Member
Feezor Engineering, Inc.
314-502-1299

From: Keen, Michael [mailto:mkeen@cecinc.com]
Sent: Thursday, July 10, 2014 7:00 AM
To: Bill Abernathy; Roxann Shull; Keith Earhart; Arron Weber
Cc: Kamp, Kevin; Dan Feezor; bpower@republicservices.com; Bouchard, Derek (DBouchard@republicservices.com); Aaron Karlas; jwmorris@stovergroup.com; Cooper, Ivan; Ruocco, Ron
Subject: RE: New Bridgeton startup sampling schedule

Hi Bill,

We also need to get a test done on the softened water from DI-770 (Nalco water softening effluent). Could you also have PDC perform a drinking water scan with at least the following tests performed on a softened water sample?

Alkalinity
pH
Total Hardness
Metals
TOC
Turbidity
Chlorides
TDS

AS, or Na, Ba Ni Fe, Be

Sb, Cd

Zn
Se

Pb

Handwritten notes:
Sulfate
Ca
Mg
Sodium

Thanks,

Michael

Michael Keen / Staff Consultant
Civil & Environmental Consultants, Inc.
1900 Center Park Drive · Suite A · Charlotte, NC 28217
Toll-Free: (855) 859-9932 · Tel: (980) 237-0373 · Fax: (980) 237-0372
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SUBCONTRACT ORDER

PDC Laboratories, Inc.

4071748

NS

SENDING LABORATORY:

- ☐ PDC Laboratories, Inc, 2231 W Altorfer Peoria, IL 61615
☐ PDC Laboratories, Inc, 1805 W Sunset, Springfield, MO 65807
☒ PDC Laboratories, Inc, 3278 N Highway 67, Florissant, MO 63033

Project Manager: Roxann Shull

rshull@pdclab.com Phone: 314-595-7337

Date Shipped

7/10/14

Sample Origin (State)

PO#

Total # of Containers

1

RECEIVING LABORATORY:

PDC Laboratories, Inc.
 PO Box 9071
 Peoria, IL 61612
 Phone : (309) 692-9688

Analysis	Due	Expires	Comments
Sample ID: 4071748-01	Water	Sampled: 07/10/14 14:10	
Na 200.7 DWTot	07/14/14 16:00	01/06/15 14:10	
Alk	07/14/14 16:00	07/24/14 14:10	
As 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Ba 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Be 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Ca 200.7 DWTot	07/14/14 16:00	01/06/15 14:10	
Cd 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Cr 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
300.0 Cl	07/14/14 16:00	08/07/14 14:10	
Mg 200.7 DWTot	07/14/14 16:00	01/06/15 14:10	
Zn 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Ni 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Pb 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
pH	07/14/14 16:00	07/10/14 16:34	
Sb 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Se 200.8 DWTot	07/14/14 16:00	01/06/15 14:10	
Solids-TDS	07/14/14 16:00	07/17/14 14:10	
TOC	07/14/14 16:00	08/07/14 14:10	
Turbidity	07/14/14 16:00	07/12/14 14:10	
Fe 200.7 DWTot	07/14/14 16:00	01/06/15 14:10	

Turn-Around Time Requested (circle one): NORMAL RUSH Date Results Needed:

7/14/14

H. Carter Carls 7/10/14		Sample Temperature Upon Receipt		13
Relinquished By		Sample(s) Received on Ice		Y or N
Date/Time		Proper Bottles Received in Good Condition		Y or N
Received By		Bottles Filled with Adequate Volume		Y or N
Date/Time		Samples Received Within Hold Time		Y or N
Received By		Date/Time Taken From Sample Bottle		Y or N
Date/Time				



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St. Louis, MO 63044
Attn: A Karlas

Date Received: 07/11/14 10:57
Report Date: 07/14/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4071892-01**
Sample Description: **T3 Startup**

Collect Date: **07/11/14 09:10**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	270 mg/L		07/11/14 12:26	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/11/14 12:26	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	3600 mg/L		07/11/14 13:42	DAW	SM 5220D 18Ed 04KS
COD - soluble	440 mg/L		07/11/14 13:42	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	3800 mg/L		07/11/14 11:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2000 mg/L		07/11/14 13:30	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.26 mg/L		07/11/14 10:15	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4071892-02**
Sample Description: **T4 Startup**

Collect Date: **07/11/14 09:20**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	3000 mg/L		07/11/14 11:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1500 mg/L		07/11/14 13:30	DAW	SM 2540E 18Ed*

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411416 - 04-No Prep WC								
Calibration Blank (B411416-CCB1)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD	-1.00	mg/L						
Calibration Blank (B411416-CCB2)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD	-5.10	mg/L						
Calibration Check (B411416-CCV1)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD	98.4	mg/L	100.0		98	95-105		
Calibration Check (B411416-CCV2)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD	491	mg/L	500.0		98	95-105		
Duplicate (B411416-DUP1)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD	< 5.0	mg/L		ND				20
Duplicate (B411416-DUP2)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD	1380	mg/L		1410			2	20
Duplicate (B411416-DUP3)			Prepared: 07/10/14 Analyzed: 07/11/14					
COD - soluble	796	mg/L		796			0	200

Batch B411474 - 04-No Prep WC

Blank (B411474-BLK1)			Prepared & Analyzed: 07/11/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411474-BS1)			Prepared & Analyzed: 07/11/14					
Solids - total suspended solids (TSS)	97.0	mg/L	100.0		97	82.9-110		
Duplicate (B411474-DUP1)			Prepared & Analyzed: 07/11/14					
Solids - total suspended solids (TSS)	1640	mg/L		1680			2	5
Duplicate (B411474-DUP2)			Prepared & Analyzed: 07/11/14					
Solids - total suspended solids (TSS)	3760	mg/L		3800			1	5

Batch B411495 - 04-No Prep WC

Duplicate (B411495-DUP1)			Prepared & Analyzed: 07/11/14					
Solids - total volatile suspended solids	2040	mg/L		2000			2	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411500 - 04-No Prep WC								
Blank (B411500-BLK1)			Prepared & Analyzed: 07/11/14					

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411500 - 04-No Prep WC								
Blank (B411500-BLK1)			Prepared & Analyzed: 07/11/14					
Ammonia-N	< 0.10	mg/L						
LCS (B411500-BS1)			Prepared & Analyzed: 07/11/14					
Ammonia-N	10.2	mg/L	10.00		102	80-120		
Matrix Spike (B411500-MS1)			Prepared & Analyzed: 07/11/14					
Ammonia-N	10.5	mg/L	10.00	0.791	97	80-120		
Matrix Spike Dup (B411500-MSD1)			Prepared & Analyzed: 07/11/14					
Ammonia-N	10.4	mg/L	10.00	0.791	96	80-120	1	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411482 - 04-IC No Prep								
Calibration Blank (B411482-CCB1)			Prepared & Analyzed: 07/11/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B411482-CCV1)			Prepared & Analyzed: 07/11/14					
Nitrite-N	2.07	mg/L	2.000		104	90-110		
Nitrate-N	1.20	mg/L	1.130		107	90-110		
Matrix Spike (B411482-MS1)			Prepared & Analyzed: 07/11/14					
Nitrate-N	12	mg/L	11.30	ND	103	80-120		
Nitrite-N	23.6	mg/L	25.00	ND	94	80-120		
Matrix Spike Dup (B411482-MSD1)			Prepared & Analyzed: 07/11/14					
Nitrate-N	12	mg/L	11.30	ND	106	80-120	3	20
Nitrite-N	24.4	mg/L	25.00	ND	98	80-120	4	20



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Laboratory Results

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TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Certified by: Roxann Shull, Client Services Supervisor

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Report Date: 07/14/14
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Laboratory Results

Sample No: **4072039-01**
Sample Description: **T3 Startup**

Collect Date: **07/12/14 09:10**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	58 mg/L		07/12/14 10:43	DAW	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/12/14 10:43	DAW	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	3700 mg/L		07/14/14 13:10	DAW	SM 5220D 18Ed 04KS
COD - soluble	850 mg/L		07/14/14 13:10	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	4100 mg/L		07/12/14 11:20	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2000 mg/L		07/14/14 14:00	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	2.6 mg/L		07/12/14 11:15	DAW	SM(18) 4500 NH3 04KS F

Sample No: **4072039-02**
Sample Description: **T4 Startup**

Collect Date: **07/12/14 09:20**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	2600 mg/L		07/12/14 11:20	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	1200 mg/L		07/14/14 14:00	DAW	SM 2540E 18Ed*

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411514 - 04-No Prep WC

Blank (B411514-BLK1)		Prepared & Analyzed: 07/12/14						
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411514-BS1)		Prepared & Analyzed: 07/12/14						
Solids - total suspended solids (TSS)	99.0	mg/L	100.0		99	82.9-110		
Duplicate (B411514-DUP1)		Prepared & Analyzed: 07/12/14						
Solids - total suspended solids (TSS)	4180	mg/L		4140			1	5

Batch B411515 - 04-No Prep WC

Calibration Blank (B411515-CCB1)		Prepared & Analyzed: 07/12/14						
COD	-0.266	mg/L						
Calibration Blank (B411515-CCB2)		Prepared: 07/11/14 Analyzed: 07/12/14						
COD	-5.07	mg/L						
Calibration Check (B411515-CCV1)		Prepared & Analyzed: 07/12/14						
COD	99.0	mg/L	100.0		99	95-105		
Calibration Check (B411515-CCV2)		Prepared: 07/11/14 Analyzed: 07/12/14						
COD	495	mg/L	500.0		99	95-105		
Duplicate (B411515-DUP1)		Prepared & Analyzed: 07/12/14						
COD	< 5.0	mg/L		ND				20
Duplicate (B411515-DUP2)		Prepared: 07/11/14 Analyzed: 07/12/14						
COD	487	mg/L		484			0.4	20
Duplicate (B411515-DUP3)		Prepared: 07/11/14 Analyzed: 07/14/14						
COD - soluble	841	mg/L		846			0.5	200

Batch B411587 - 04-No Prep WC

Duplicate (B411587-DUP1)		Prepared & Analyzed: 07/14/14						
Solids - total volatile suspended solids	2000	mg/L		2040			2	5
Duplicate (B411587-DUP2)		Prepared & Analyzed: 07/14/14						
Solids - total volatile suspended solids	2680	mg/L		2640			2	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411517 - 04-No Prep WC

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411517 - 04-No Prep WC								
Blank (B411517-BLK1)			Prepared & Analyzed: 07/12/14					
Ammonia-N	< 0.10	mg/L						
LCS (B411517-BS1)			Prepared & Analyzed: 07/12/14					
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B411517-MS1)			Prepared & Analyzed: 07/12/14					
Ammonia-N	10.3	mg/L	10.00	0.281	100	80-120		
Matrix Spike Dup (B411517-MSD1)			Prepared & Analyzed: 07/12/14					
Ammonia-N	10.2	mg/L	10.00	0.281	99	80-120	1	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411482 - 04-IC No Prep								
Calibration Blank (B411482-CCB1)			Prepared & Analyzed: 07/11/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B411482-CCV1)			Prepared & Analyzed: 07/11/14					
Nitrite-N	2.07	mg/L	2.000		104	90-110		
Nitrate-N	1.20	mg/L	1.130		107	90-110		
Matrix Spike (B411482-MS1)			Prepared & Analyzed: 07/11/14					
Nitrite-N	23.6	mg/L	25.00	ND	94	80-120		
Nitrate-N	12	mg/L	11.30	ND	103	80-120		
Matrix Spike Dup (B411482-MSD1)			Prepared & Analyzed: 07/11/14					
Nitrite-N	24.4	mg/L	25.00	ND	98	80-120	4	20
Nitrate-N	12	mg/L	11.30	ND	106	80-120	3	20



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Missouri Department of Natural Resources

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Report Date: 07/15/14
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PO#: 4468816

Laboratory Results

Sample No: **4072055-01**
Sample Description: **T3 Startup**

Collect Date: **07/13/14 09:15**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	61 mg/L		07/14/14 12:22	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/14/14 12:22	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	3700 mg/L		07/14/14 13:43	DWM	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/14/14 13:44	DWM	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	5500 mg/L		07/14/14 11:35	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2600 mg/L		07/14/14 14:00	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	6.6 mg/L		07/14/14 11:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4072055-02**
Sample Description: **T4 Startup**

Collect Date: **07/13/14 09:25**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	4200 mg/L		07/14/14 11:35	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2100 mg/L		07/14/14 14:00	DAW	SM 2540E 18Ed*

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411568 - 04-No Prep WC								
Blank (B411568-BLK1)			Prepared & Analyzed: 07/14/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411568-BS1)			Prepared & Analyzed: 07/14/14					
Solids - total suspended solids (TSS)	95.0	mg/L	100.0		95	82.9-110		
Duplicate (B411568-DUP1)			Prepared & Analyzed: 07/14/14					
Solids - total suspended solids (TSS)	M 1600	mg/L		1780			11	5
Duplicate (B411568-DUP2)			Prepared & Analyzed: 07/14/14					
Solids - total suspended solids (TSS)	5660	mg/L		5460			4	5
Batch B411581 - 04-No Prep WC								
Calibration Blank (B411581-CCB1)			Prepared & Analyzed: 07/14/14					
COD	-5.10	mg/L						
Calibration Check (B411581-CCV1)			Prepared & Analyzed: 07/14/14					
COD	495	mg/L	500.0		99	95-105		
Duplicate (B411581-DUP1)			Prepared & Analyzed: 07/14/14					
COD	3670	mg/L		3700			0.7	20
Duplicate (B411581-DUP2)			Prepared & Analyzed: 07/14/14					
COD - soluble	1280	mg/L		1260			1	200
Batch B411587 - 04-No Prep WC								
Duplicate (B411587-DUP1)			Prepared & Analyzed: 07/14/14					
Solids - total volatile suspended solids	2000	mg/L		2040			2	5
Duplicate (B411587-DUP2)			Prepared & Analyzed: 07/14/14					
Solids - total volatile suspended solids	2680	mg/L		2640			2	5
Nutrients - Quality Control								
Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411617 - 04-No Prep WC								
Calibration Blank (B411617-CCB1)			Prepared & Analyzed: 07/14/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411617-CCV1)			Prepared & Analyzed: 07/14/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411617 - 04-No Prep WC								
Matrix Spike (B411617-MS1)			Source: 4072105-01		Prepared & Analyzed: 07/14/14			
Ammonia-N	24.1	mg/L	10.00	14.6	95	80-120		
Matrix Spike Dup (B411617-MSD1)			Source: 4072105-01		Prepared & Analyzed: 07/14/14			
Ammonia-N	24.2	mg/L	10.00	14.6	96	80-120	0.4	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411582 - 04-IC No Prep								
Calibration Blank (B411582-CCB1)			Prepared & Analyzed: 07/14/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B411582-CCV1)			Prepared & Analyzed: 07/14/14					
Nitrate-N	1.16	mg/L	1.130		103	90-110		
Nitrite-N	2.00	mg/L	2.000		100	90-110		
Matrix Spike (B411582-MS1)			Source: 4071992-03		Prepared & Analyzed: 07/14/14			
Nitrate-N	Q1 1.3	mg/L	1.130		112	80-120		
Nitrite-N	2.49	mg/L	2.500		100	80-120		
Matrix Spike Dup (B411582-MSD1)			Source: 4071992-03		Prepared & Analyzed: 07/14/14			
Nitrite-N	2.90	mg/L	2.500		116	80-120	15	20
Nitrate-N	Q2 1.3	mg/L	1.130		113	80-120	0.6	20



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Date Received: 07/14/14 10:27
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Customer #: 277310
PO#: 4468816

Laboratory Results

Notes

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
STL PDC Laboratories - St. Louis, MO
TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050
Drinking Water Certifications: Missouri (1050)
Missouri Department of Natural Resources

Q2 MSD failed %R
Q1 MS Failed %R
M Analyte failed to meet the required acceptance criteria for duplicate analysis.

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

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State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/14/14 14:00
Report Date: 07/21/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4072119-01**
Sample Description: **T3 Startup**

Collect Date: **07/14/14 09:50**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	5.1 mg/L		07/15/14 07:35	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/14/14 17:53	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
Alkalinity - total as CaCO ₃	29000 mg/L		07/14/14 17:00	ACV	SM 2320B 18Ed*
BOD - soluble	300 mg/L	C	07/14/14 14:30	DAS	SM 5210B 18Ed*
COD	3900 mg/L		07/15/14 08:23	DAW	SM 5220D 18Ed 04KS
COD - soluble	1600 mg/L		07/15/14 08:23	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	5900 mg/L		07/14/14 15:35	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	5200 mg/L		07/14/14 16:15	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2400 mg/L		07/15/14 13:00	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	5.9 mg/L		07/14/14 11:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.17 mg/L		07/15/14 10:58	WPS	EPA 200.7 R4.4 04KS
Zinc	0.082 mg/L		07/15/14 10:58	WPS	EPA 200.7 R4.4 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	< 0.050 mg/L		07/14/14 14:30	ACV	SM 4500P B E 18ed*
<u>Total Metals - STL</u>					
Arsenic	0.33 mg/L		07/15/14 10:56	WPS	EPA 200.7 R4.4 04KS
Hardness	2800 mg/L		07/15/14 10:53	WPS	SM 2340B
Calcium	860 mg/L	Q4	07/15/14 10:53	WPS	EPA 200.7 R4.4 04KS
Magnesium	150 mg/L	Q4	07/15/14 10:53	WPS	EPA 200.7 R4.4 04KS
Zinc	2.6 mg/L		07/15/14 10:56	WPS	EPA 200.7 R4.4 04KS

Sample No: **4072119-02**
Sample Description: **T4 Startup**

Collect Date: **07/14/14 09:24**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	4800 mg/L		07/14/14 16:15	DAS	SM 2540D 18Ed 04KS

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Laboratory Results

Sample No: **4072119-02**
Sample Description: **T4 Startup**

Collect Date: **07/14/14 09:24**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total volatile suspended solids	2200 mg/L		07/15/14 13:00	DAS	SM 2540E 18Ed*

Sample No: **4072119-03**
Sample Description: **T206 Startup**

Collect Date: **07/14/14 11:20**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	13000 mg/L		07/14/14 17:00	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	47000 mg/L		07/14/14 17:00	ACV	SM 2320B 18Ed*
COD	55000 mg/L		07/15/14 08:23	DAW	SM 5220D 18Ed 04KS
COD - soluble	53000 mg/L		07/15/14 08:23	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	31000 mg/L		07/14/14 15:35	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	6200 mg/L		07/14/14 16:15	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3000 mg/L		07/15/14 13:00	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	550 mg/L		07/14/14 11:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.74 mg/L		07/15/14 11:10	WPS	EPA 200.7 R4.4 04KS
Zinc	6.3 mg/L		07/15/14 11:10	WPS	EPA 200.7 R4.4 04KS
<u>Total Metals - STL</u>					
Arsenic	0.91 mg/L		07/15/14 10:59	WPS	EPA 200.7 R4.4 04KS
Hardness	12000 mg/L		07/15/14 10:54	WPS	SM 2340B
Calcium	4100 mg/L	Q4	07/15/14 10:54	WPS	EPA 200.7 R4.4 04KS
Magnesium	480 mg/L	Q4	07/15/14 10:54	WPS	EPA 200.7 R4.4 04KS
Zinc	7.0 mg/L		07/15/14 10:59	WPS	EPA 200.7 R4.4 04KS

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Date Received: 07/14/14 14:00
 Report Date: 07/21/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411571 - 04-No Prep WC								
Duplicate (B411571-DUP2)			Source: 4072119-01		Prepared & Analyzed: 07/14/14			
BOD - soluble	C	280	mg/L	300			7	20
Batch B411590 - 04-No Prep WC								
Blank (B411590-BLK1)			Prepared & Analyzed: 07/14/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B411590-BS1)			Prepared & Analyzed: 07/14/14					
Solids - total dissolved solids (TDS)	1010	mg/L	1000		101	75.1-119		
Duplicate (B411590-DUP1)			Source: 4071992-04		Prepared & Analyzed: 07/14/14			
Solids - total dissolved solids (TDS)	654	mg/L		632			3	5
Batch B411600 - 04-No Prep WC								
Blank (B411600-BLK1)			Prepared & Analyzed: 07/14/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411600-BS1)			Prepared & Analyzed: 07/14/14					
Solids - total suspended solids (TSS)	91.0	mg/L	100.0		91	82.9-110		
Duplicate (B411600-DUP1)			Source: 4072119-02		Prepared & Analyzed: 07/14/14			
Solids - total suspended solids (TSS)	4760	mg/L		4800			0.8	5
Batch B411601 - 04-No Prep WC								
Calibration Blank (B411601-CCB1)			Prepared: 07/14/14 Analyzed: 07/15/14					
COD	-0.00477	mg/L						
Calibration Blank (B411601-CCB2)			Prepared: 07/14/14 Analyzed: 07/15/14					
COD	-5.07	mg/L						
Calibration Check (B411601-CCV1)			Prepared: 07/14/14 Analyzed: 07/15/14					
COD	99.7	mg/L	100.0		100	95-105		
Calibration Check (B411601-CCV2)			Prepared: 07/14/14 Analyzed: 07/15/14					
COD	493	mg/L	500.0		99	95-105		
Duplicate (B411601-DUP1)			Source: 4072092-02		Prepared: 07/14/14 Analyzed: 07/15/14			
COD	23.8	mg/L		24.3			2	20
Duplicate (B411601-DUP2)			Source: 4072092-01		Prepared: 07/14/14 Analyzed: 07/15/14			
COD	197	mg/L		199			1	20
Duplicate (B411601-DUP3)			Source: 4072119-01		Prepared: 07/14/14 Analyzed: 07/15/14			
COD - soluble	1580	mg/L		1580			0.3	200
Batch B411669 - 04-No Prep WC								

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411669 - 04-No Prep WC								
Blank (B411669-BLK1)			Prepared & Analyzed: 07/14/14					
Alkalinity - total as CaCO ₃	< 20	mg/L						
LCS (B411669-BS1)			Prepared & Analyzed: 07/14/14					
Alkalinity - total as CaCO ₃	1000	mg/L	1000		100	90-110		
Duplicate (B411669-DUP1)			Prepared & Analyzed: 07/14/14					
Alkalinity - total as CaCO ₃	29400	mg/L		29000			1	20
Batch B411696 - 04-No Prep WC								
Duplicate (B411696-DUP1)			Prepared & Analyzed: 07/15/14					
Solids - total volatile suspended solids	2200	mg/L		2200			0	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411617 - 04-No Prep WC								
Calibration Blank (B411617-CCB1)			Prepared & Analyzed: 07/14/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411617-CCV1)			Prepared & Analyzed: 07/14/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411617-MS1)			Prepared & Analyzed: 07/14/14					
Ammonia-N	24.1	mg/L	10.00	14.6	95	80-120		
Matrix Spike Dup (B411617-MSD1)			Prepared & Analyzed: 07/14/14					
Ammonia-N	24.2	mg/L	10.00	14.6	96	80-120	0.4	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411613 - 04-No Prep WC								
Calibration Blank (B411613-CCB1)			Prepared & Analyzed: 07/14/14					
Phosphorus - ortho as P	0.00	mg/L						
Calibration Check (B411613-CCV1)			Prepared & Analyzed: 07/14/14					
Phosphorus - ortho as P	0.507	mg/L	0.5000		101	90-110		
Matrix Spike (B411613-MS1)			Prepared & Analyzed: 07/14/14					

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Laboratory Results**Soluble Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411613 - 04-No Prep WC								
Matrix Spike (B411613-MS1)			Source: 4072119-01		Prepared & Analyzed: 07/14/14			
Phosphorus - ortho as P	0.530	mg/L	0.5000	0.0200	102	80-120		
Matrix Spike Dup (B411613-MSD1)			Source: 4072119-01		Prepared & Analyzed: 07/14/14			
Phosphorus - ortho as P	0.515	mg/L	0.5000	0.0200	99	80-120	3	20

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411609 - 04 EPA 200.2 R2.8								
Blank (B411609-BLK1)			Prepared: 07/14/14 Analyzed: 07/15/14					
Arsenic	< 0.010	mg/L						
Calcium	Q4 < 0.19	mg/L						
Magnesium	Q4 < 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B411609-BS1)			Prepared: 07/14/14 Analyzed: 07/15/14					
Arsenic	0.201	mg/L	0.2000		100	85-115		
Calcium	Q4 0.211	mg/L	0.2000		106	85-115		
Magnesium	Q4 0.201	mg/L	0.2000		101	85-115		
Zinc	0.201	mg/L	0.2000		100	85-115		
Matrix Spike (B411609-MS1)			Source: 4072119-03		Prepared: 07/14/14 Analyzed: 07/15/14			
Arsenic	1.39	mg/L	0.5000	0.914	94	70-130		
Magnesium	Q4 403	mg/L	0.5000	482	NR	70-130		
Zinc	7.55	mg/L	0.5000	7.02	106	70-130		
Matrix Spike Dup (B411609-MSD1)			Source: 4072119-03		Prepared: 07/14/14 Analyzed: 07/15/14			
Arsenic	1.41	mg/L	0.5000	0.914	99	70-130	2	20
Magnesium	Q4 405	mg/L	0.5000	482	NR	70-130	0.5	20
Zinc	7.56	mg/L	0.5000	7.02	107	70-130	0.07	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411609 - 04 EPA 200.2 R2.8								
Blank (B411609-BLK1)			Prepared: 07/14/14 Analyzed: 07/15/14					
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						

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Laboratory Results**Soluble Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411609 - 04 EPA 200.2 R2.8								
LCS (B411609-BS1)			Prepared: 07/14/14 Analyzed: 07/15/14					
Arsenic	0.201	mg/L	0.2000		100	85-115		
Zinc	0.201	mg/L	0.2000		100	85-115		

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411582 - 04-IC No Prep								
Calibration Blank (B411582-CCB1)			Prepared & Analyzed: 07/14/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B411582-CCV1)			Prepared & Analyzed: 07/14/14					
Nitrate-N	1.16	mg/L	1.130		103	90-110		
Nitrite-N	2.00	mg/L	2.000		100	90-110		
Matrix Spike (B411582-MS1)			Source: 4071992-03		Prepared & Analyzed: 07/14/14			
Nitrate-N	Q1 1.3	mg/L	1.130		112	80-120		
Nitrite-N	2.49	mg/L	2.500		100	80-120		
Matrix Spike Dup (B411582-MSD1)			Source: 4071992-03		Prepared & Analyzed: 07/14/14			
Nitrate-N	Q2 1.3	mg/L	1.130		113	80-120	0.6	20
Nitrite-N	2.90	mg/L	2.500		116	80-120	15	20



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Laboratory Results

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Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.
- Q2 MSD failed %R
- Q1 MS Failed %R
- C The blank spike failed to meet the required acceptance criteria.

Certified by: Roxann Shull, Client Services Supervisor

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Bridgeton Landfill
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Attn: Bill Abernathy

Date Received: 07/15/14 10:46
Report Date: 07/16/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4072179-01**
Sample Description: **T3 Startup**

Collect Date: **07/15/14 08:53**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	12 mg/L		07/15/14 16:18	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/15/14 16:35	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	3100 mg/L		07/16/14 09:56	DAW	SM 5220D 18Ed 04KS
COD - soluble	910 mg/L		07/16/14 09:56	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	5800 mg/L		07/15/14 15:40	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2300 mg/L		07/16/14 09:45	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.71 mg/L		07/16/14 10:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4072179-02**
Sample Description: **T4 Startup**

Collect Date: **07/15/14 08:50**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	4700 mg/L		07/15/14 15:40	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2000 mg/L		07/16/14 09:45	DAW	SM 2540E 18Ed*

Sample No: **4072179-03**
Sample Description: **T206 Startup**

Collect Date: **07/15/14 09:04**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	56000 mg/L		07/16/14 09:56	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	37000 mg/L		07/15/14 15:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	4900 mg/L		07/15/14 15:40	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	680 mg/L		07/16/14 10:30	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/15/14 10:46
 Report Date: 07/16/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411716 - 04-No Prep WC								
Blank (B411716-BLK1)			Prepared & Analyzed: 07/15/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B411716-BS1)			Prepared & Analyzed: 07/15/14					
Solids - total dissolved solids (TDS)	980	mg/L	1000		98	75.1-119		
Duplicate (B411716-DUP1)			Prepared & Analyzed: 07/15/14					
Solids - total dissolved solids (TDS)	36500	mg/L		37400			3	5
Batch B411718 - 04-No Prep WC								
Blank (B411718-BLK1)			Prepared & Analyzed: 07/15/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411718-BS1)			Prepared & Analyzed: 07/15/14					
Solids - total suspended solids (TSS)	96.0	mg/L	100.0		96	82.9-110		
Duplicate (B411718-DUP1)			Prepared & Analyzed: 07/15/14					
Solids - total suspended solids (TSS)	5780	mg/L		5820			0.7	5
Batch B411768 - 04-No Prep WC								
Calibration Blank (B411768-CCB1)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD	-0.527	mg/L						
Calibration Blank (B411768-CCB2)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD	-5.07	mg/L						
Calibration Check (B411768-CCV1)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD	101	mg/L				95-105		
Calibration Check (B411768-CCV2)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD	506	mg/L				95-105		
Duplicate (B411768-DUP1)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD	39.9	mg/L		39.9			0	20
Duplicate (B411768-DUP2)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD	57100	mg/L		56500			1	20
Duplicate (B411768-DUP3)			Prepared: 07/15/14 Analyzed: 07/16/14					
COD - soluble	921	mg/L		912			0.9	20
Batch B411773 - 04-No Prep WC								
Duplicate (B411773-DUP1)			Prepared & Analyzed: 07/16/14					
Solids - total volatile suspended solids	2320	mg/L		2300			0.9	5

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411799 - 04-No Prep WC								
Calibration Blank (B411799-CCB1)			Prepared & Analyzed: 07/16/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B411799-CCV1)			Prepared & Analyzed: 07/16/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411799-MS1)			Prepared & Analyzed: 07/16/14					
Ammonia-N	10.2	mg/L	10.00	0.540	97	80-120		
Matrix Spike Dup (B411799-MSD1)			Prepared & Analyzed: 07/16/14					
Ammonia-N	9.98	mg/L	10.00	0.540	94	80-120	2	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411755 - 04-IC No Prep								
Calibration Blank (B411755-CCB1)			Prepared & Analyzed: 07/15/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B411755-CCV1)			Prepared & Analyzed: 07/15/14					
Nitrite-N	2.04	mg/L	2.000		102	90-110		
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Matrix Spike (B411755-MS1)			Prepared & Analyzed: 07/15/14					
Nitrate-N	0.96	mg/L	1.130	ND	85	80-120		
Nitrite-N	2.51	mg/L	2.500	ND	100	80-120		
Matrix Spike Dup (B411755-MSD1)			Prepared & Analyzed: 07/15/14					
Nitrate-N	Q2 0.55	mg/L	1.130	ND	49	80-120	53	20
Nitrite-N	2.10	mg/L	2.500	ND	84	80-120	18	20



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Laboratory Results

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Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

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EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

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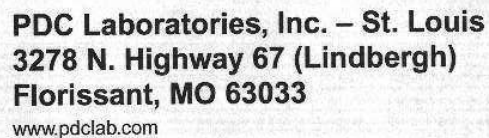
No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Q2 MSD failed %R

Certified by: Roxann Shull, Client Services Supervisor



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Laboratory Results

Sample No: **4072378-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/16/14 06:13**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	18 mg/L		07/16/14 14:06	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/16/14 14:24	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	4100 mg/L		07/17/14 09:28	DAW	SM 5220D 18Ed 04KS
COD - soluble	1000 mg/L		07/17/14 09:28	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	5600 mg/L		07/16/14 14:30	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2400 mg/L		07/17/14 11:45	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.84 mg/L		07/16/14 10:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4072378-02**
Sample Description: **T4 Startup**

Collect Date: **07/16/14 06:16**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	5800 mg/L		07/16/14 14:30	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2600 mg/L		07/17/14 11:45	DAS	SM 2540E 18Ed*

Sample No: **4072378-03**
Sample Description: **T206 Startup-Short List**

Collect Date: **07/16/14 06:03**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	58000 mg/L		07/17/14 09:28	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	38000 mg/L		07/16/14 15:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	5200 mg/L		07/16/14 14:30	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	760 mg/L		07/16/14 10:30	ACV	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411819 - 04-No Prep WC								
Blank (B411819-BLK1)			Prepared & Analyzed: 07/16/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B411819-BS1)			Prepared & Analyzed: 07/16/14					
Solids - total dissolved solids (TDS)	880	mg/L	1000		88	75.1-119		
Duplicate (B411819-DUP1)			Prepared & Analyzed: 07/16/14					
Solids - total dissolved solids (TDS)	654	mg/L		668			2	5
Batch B411822 - 04-No Prep WC								
Blank (B411822-BLK1)			Prepared & Analyzed: 07/16/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411822-BS1)			Prepared & Analyzed: 07/16/14					
Solids - total suspended solids (TSS)	95.0	mg/L	100.0		95	82.9-110		
Duplicate (B411822-DUP1)			Prepared & Analyzed: 07/16/14					
Solids - total suspended solids (TSS)	5840	mg/L		5600			4	5
Duplicate (B411822-DUP2)			Prepared & Analyzed: 07/16/14					
Solids - total suspended solids (TSS)	10.8	mg/L		6.40			51	5
Batch B411858 - 04-No Prep WC								
Calibration Blank (B411858-CCB1)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD	-0.00477	mg/L						
Calibration Blank (B411858-CCB2)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD	-5.07	mg/L						
Calibration Check (B411858-CCV1)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD	98.4	mg/L	100.0		98	95-105		
Calibration Check (B411858-CCV2)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD	508	mg/L	500.0		102	95-105		
Duplicate (B411858-DUP1)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD	< 5.0	mg/L		ND				20
Duplicate (B411858-DUP2)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD	393	mg/L		389			1	20
Duplicate (B411858-DUP3)			Prepared: 07/16/14 Analyzed: 07/17/14					
COD - soluble	1020	mg/L		1030			1	20
Batch B411872 - 04-No Prep WC								
Duplicate (B411872-DUP1)			Source: 4072378-01 Prepared & Analyzed: 07/17/14					

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411872 - 04-No Prep WC

Duplicate (B411872-DUP1)	Source: 4072378-01	Prepared & Analyzed: 07/17/14						
Solids - total volatile suspended solids	2400	mg/L		2380			0.8	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411799 - 04-No Prep WC

Calibration Blank (B411799-CCB1)	Prepared & Analyzed: 07/16/14							
Ammonia-N	0.00	mg/L						
Calibration Check (B411799-CCV1)	Prepared & Analyzed: 07/16/14							
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B411799-MS1)	Source: 4072335-01	Prepared & Analyzed: 07/16/14						
Ammonia-N	10.2	mg/L	10.00	0.540	97	80-120		
Matrix Spike Dup (B411799-MSD1)	Source: 4072335-01	Prepared & Analyzed: 07/16/14						
Ammonia-N	9.98	mg/L	10.00	0.540	94	80-120	2	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B411814 - 04-IC No Prep

Calibration Blank (B411814-CCB1)	Prepared & Analyzed: 07/16/14							
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B411814-CCV1)	Prepared & Analyzed: 07/16/14							
Nitrite-N	2.05	mg/L	2.000		103	90-110		
Nitrate-N	1.18	mg/L	1.130		104	90-110		
Matrix Spike (B411814-MS1)	Source: 4072140-09	Prepared & Analyzed: 07/16/14						
Nitrite-N	262	mg/L	250.0	ND	105	80-120		
Nitrate-N	120	mg/L	113.0	ND	105	80-120		
Matrix Spike (B411814-MS2)	Source: 4072455-01	Prepared & Analyzed: 07/16/14						
Nitrite-N	Q3 38.6	mg/L	50.00	134	NR	80-120		
Nitrate-N	Q3 24	mg/L	22.59	7.9	72	80-120		
Matrix Spike Dup (B411814-MSD1)	Source: 4072140-09	Prepared & Analyzed: 07/16/14						



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Laboratory Results

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411814 - 04-IC No Prep								
Matrix Spike Dup (B411814-MSD1)			Source: 4072140-09		Prepared & Analyzed: 07/16/14			
Nitrate-N	120	mg/L	113.0	ND	106	80-120	2	20
Nitrite-N	269	mg/L	250.0	ND	108	80-120	3	20
Matrix Spike Dup (B411814-MSD2)			Source: 4072455-01		Prepared & Analyzed: 07/16/14			
Nitrate-N	Q3 24	mg/L	22.59	7.9	70	80-120	2	20
Nitrite-N	Q3 38.1	mg/L	50.00	134	NR	80-120	1	20



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Laboratory Results

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Missouri Department of Natural Resources

Q3 MS/MSD both failed %R

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Laboratory Results

Sample No: **4072648-01**
Sample Description: **T3 Startup-Long List**

Collect Date: **07/17/14 06:25**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Anions - STL					
Nitrate-N	5.9 mg/L	Q1	07/18/14 10:28	DAW	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L	Q3	07/18/14 10:45	DAW	EPA 300.0 R2.1 04KS
General Chemistry - STL					
Alkalinity - total as CaCO ₃	360 mg/L		07/17/14 11:00	ACV	SM 2320B 18Ed*
BOD - soluble	< 120 mg/L		07/17/14 13:00	DAS	SM 5210B 18Ed*
COD	5200 mg/L		07/18/14 13:01	DAW	SM 5220D 18Ed 04KS
COD - soluble	1100 mg/L		07/18/14 13:01	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	6400 mg/L		07/17/14 17:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	7600 mg/L		07/17/14 13:55	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3600 mg/L		07/18/14 11:15	DAS	SM 2540E 18Ed*
Nutrients - STL					
Ammonia-N	0.68 mg/L		07/18/14 12:30	ACV	SM(18) 4500 NH ₃ F 04KS
Soluble Metals - STL					
Arsenic	0.15 mg/L		07/18/14 09:08	WPS	EPA 200.7 R4.4 04KS
Zinc	0.16 mg/L		07/18/14 09:08	WPS	EPA 200.7 R4.4 04KS
Soluble Nutrients - STL					
Phosphorus - ortho as P	< 0.050 mg/L		07/17/14 15:30	ACV	SM 4500P B E 18ed*
Total Metals - STL					
Arsenic	0.39 mg/L		07/18/14 09:03	WPS	EPA 200.7 R4.4 04KS
Hardness	3400 mg/L		07/18/14 09:00	WPS	SM 2340B
Calcium	1100 mg/L	Q4	07/18/14 09:00	WPS	EPA 200.7 R4.4 04KS
Magnesium	180 mg/L	Q4	07/18/14 09:00	WPS	EPA 200.7 R4.4 04KS
Zinc	3.2 mg/L		07/18/14 09:03	WPS	EPA 200.7 R4.4 04KS

Sample No: **4072648-02**
Sample Description: **T4 Startup**

Collect Date: **07/17/14 06:28**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - STL					
Solids - total suspended solids (TSS)	6100 mg/L		07/17/14 13:55	DAS	SM 2540D 18Ed 04KS



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Laboratory Results

Sample No: **4072648-02**
Sample Description: **T4 Startup**

Collect Date: **07/17/14 06:28**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total volatile suspended solids	2400 mg/L		07/18/14 11:15	DAS	SM 2540E 18Ed*

Sample No: **4072648-03**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/17/14 06:08**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	790 mg/L		07/17/14 11:00	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	600 mg/L		07/17/14 11:00	ACV	SM 2320B 18Ed*
COD	44000 mg/L		07/18/14 13:01	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	39000 mg/L		07/17/14 17:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	5300 mg/L		07/17/14 13:55	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	630 mg/L		07/18/14 12:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.76 mg/L		07/18/14 09:17	WPS	EPA 200.7 R4.4 04KS
Zinc	5.9 mg/L		07/18/14 09:17	WPS	EPA 200.7 R4.4 04KS
<u>Total Metals - STL</u>					
Arsenic	0.96 mg/L		07/18/14 09:10	WPS	EPA 200.7 R4.4 04KS
Hardness	13000 mg/L		07/18/14 09:01	WPS	SM 2340B
Calcium	4300 mg/L	Q4	07/18/14 09:01	WPS	EPA 200.7 R4.4 04KS
Magnesium	520 mg/L	Q4	07/18/14 09:01	WPS	EPA 200.7 R4.4 04KS
Zinc	6.7 mg/L		07/18/14 09:10	WPS	EPA 200.7 R4.4 04KS

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411861 - 04-No Prep WC								
Duplicate (B411861-DUP2)	Source: 4072648-01	Prepared & Analyzed: 07/17/14						
BOD - soluble	< 120	mg/L		ND				20
Batch B411884 - 04-No Prep WC								
Blank (B411884-BLK1)		Prepared & Analyzed: 07/17/14						
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411884-BS1)		Prepared & Analyzed: 07/17/14						
Solids - total suspended solids (TSS)	92.0	mg/L	100.0		92	82.9-110		
Duplicate (B411884-DUP1)	Source: 4072621-02	Prepared & Analyzed: 07/17/14						
Solids - total suspended solids (TSS)	1600	mg/L		1600			0	5
Duplicate (B411884-DUP2)	Source: 4072648-02	Prepared & Analyzed: 07/17/14						
Solids - total suspended solids (TSS)	6020	mg/L		6060			0.7	5
Batch B411901 - 04-No Prep WC								
Calibration Blank (B411901-CCB1)		Prepared & Analyzed: 07/17/14						
Alkalinity - total as CaCO ₃	0.00	mg/L						
Calibration Check (B411901-CCV1)		Prepared & Analyzed: 07/17/14						
Alkalinity - total as CaCO ₃	996	mg/L	1000		100	90-110		
Duplicate (B411901-DUP1)	Source: 4072648-03	Prepared & Analyzed: 07/17/14						
Alkalinity - total as CaCO ₃	610	mg/L		600			2	20
Batch B411902 - 04-No Prep WC								
Duplicate (B411902-DUP1)	Source: 4072648-03	Prepared & Analyzed: 07/17/14						
Acidity	780	mg/L		790			1	20
Batch B411904 - 04-No Prep WC								
Blank (B411904-BLK1)		Prepared & Analyzed: 07/17/14						
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B411904-BS1)		Prepared & Analyzed: 07/17/14						
Solids - total dissolved solids (TDS)	1010	mg/L	1000		101	75.1-119		
Duplicate (B411904-DUP1)	Source: 4072648-03	Prepared & Analyzed: 07/17/14						
Solids - total dissolved solids (TDS)	38900	mg/L		39400			1	5
Batch B411973 - 04-No Prep WC								
Duplicate (B411973-DUP1)	Source: 4072648-02	Prepared & Analyzed: 07/18/14						
Solids - total volatile suspended solids	2380	mg/L		2380			0	5

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411984 - 04-No Prep WC								
Calibration Blank (B411984-CCB1)			Prepared & Analyzed: 07/18/14					
COD	-0.00477	mg/L						
Calibration Blank (B411984-CCB2)			Prepared & Analyzed: 07/18/14					
COD	-5.07	mg/L						
Calibration Check (B411984-CCV1)			Prepared & Analyzed: 07/18/14					
COD	97.9	mg/L	100.0		98	95-105		
Calibration Check (B411984-CCV2)			Prepared & Analyzed: 07/18/14					
COD	482	mg/L	500.0		96	95-105		
Duplicate (B411984-DUP1)			Prepared & Analyzed: 07/18/14					
COD	36.0	mg/L		36.0			0	20
Duplicate (B411984-DUP2)			Prepared & Analyzed: 07/18/14					
COD	44100	mg/L		44300			0.5	20
Duplicate (B411984-DUP3)			Prepared & Analyzed: 07/18/14					
COD - soluble	1110	mg/L		1120			0.8	20

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412005 - 04-No Prep WC								
Blank (B412005-BLK1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	< 0.10	mg/L						
LCS (B412005-BS1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B412005-MS1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	27.4	mg/L	10.00	17.9	95	80-120		
Matrix Spike Dup (B412005-MSD1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	27.6	mg/L	10.00	17.9	97	80-120	0.7	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411936 - 04-No Prep WC								
Calibration Blank (B411936-CCB1)			Prepared & Analyzed: 07/17/14					

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Laboratory Results**Soluble Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411936 - 04-No Prep WC								
Calibration Blank (B411936-CCB1)			Prepared & Analyzed: 07/17/14					
Phosphorus - ortho as P	0.00	mg/L						
Calibration Check (B411936-CCV1)			Prepared & Analyzed: 07/17/14					
Phosphorus - ortho as P	0.497	mg/L	0.5000		99	90-110		
Matrix Spike (B411936-MS1)			Prepared & Analyzed: 07/17/14					
Phosphorus - ortho as P	0.548	mg/L	0.5000	0.0480	100	80-120		
Matrix Spike Dup (B411936-MSD1)			Prepared & Analyzed: 07/17/14					
Phosphorus - ortho as P	0.507	mg/L	0.5000	0.0480	92	80-120	8	20

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411874 - 04 EPA 200.2 R2.8								
Blank (B411874-BLK1)			Prepared: 07/17/14 Analyzed: 07/18/14					
Arsenic	< 0.010	mg/L						
Calcium	Q4 < 0.19	mg/L						
Magnesium	Q4 < 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B411874-BS1)			Prepared: 07/17/14 Analyzed: 07/18/14					
Arsenic	0.200	mg/L	0.2000		100	85-115		
Calcium	Q4 0.209	mg/L	0.2000		105	85-115		
Magnesium	Q4 0.219	mg/L	0.2000		110	85-115		
Zinc	0.204	mg/L	0.2000		102	85-115		
Matrix Spike (B411874-MS1)			Prepared: 07/17/14 Analyzed: 07/18/14					
Arsenic	0.850	mg/L	0.5000	0.392	91	70-130		
Calcium	Q4 865	mg/L	0.5000	1080	NR	70-130		
Magnesium	Q4 151	mg/L	0.5000	180	NR	70-130		
Zinc	3.56	mg/L	0.5000	3.19	74	70-130		
Matrix Spike Dup (B411874-MSD1)			Prepared: 07/17/14 Analyzed: 07/18/14					
Arsenic	0.867	mg/L	0.5000	0.392	95	70-130	2	20
Calcium	Q4 884	mg/L	0.5000	1080	NR	70-130	2	20
Magnesium	Q4 156	mg/L	0.5000	180	NR	70-130	3	20
Zinc	3.65	mg/L	0.5000	3.19	92	70-130	3	20

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Laboratory Results**Soluble Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411874 - 04 EPA 200.2 R2.8								
Blank (B411874-BLK1)			Prepared: 07/17/14 Analyzed: 07/18/14					
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						
LCS (B411874-BS1)			Prepared: 07/17/14 Analyzed: 07/18/14					
Arsenic	0.200	mg/L	0.2000		100	85-115		
Zinc	0.204	mg/L	0.2000		102	85-115		

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411937 - 04-IC No Prep								
Calibration Blank (B411937-CCB1)			Prepared & Analyzed: 07/18/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.376	mg/L						
Calibration Check (B411937-CCV1)			Prepared & Analyzed: 07/18/14					
Nitrite-N	2.06	mg/L	2.000		103	90-110		
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Matrix Spike (B411937-MS1)			Source: 4072648-01			Prepared & Analyzed: 07/18/14		
Nitrite-N	Q1	76.6	mg/L	125.0	ND	61	80-120	
Nitrate-N	Q1	50	mg/L	56.48	5.9	79	80-120	
Matrix Spike Dup (B411937-MSD1)			Source: 4072648-01			Prepared & Analyzed: 07/18/14		
Nitrate-N		61	mg/L	56.48	5.9	98	80-120	19
Nitrite-N	Q2	83.6	mg/L	125.0	ND	67	80-120	9



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Laboratory Results

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UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

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Missouri Department of Natural Resources

- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.
- Q3 MS/MSD both failed %R
- Q2 MSD failed %R
- Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

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Laboratory Results

Sample No: **4072974-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/18/14 06:04**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		07/18/14 12:30	DAW	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/18/14 12:47	DAW	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	4800 mg/L		07/18/14 13:02	DAW	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/18/14 13:02	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	7500 mg/L		07/18/14 10:55	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3400 mg/L		07/18/14 14:13	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.64 mg/L		07/18/14 12:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4072974-02**
Sample Description: **T4 Startup**

Collect Date: **07/18/14 06:07**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	7100 mg/L		07/18/14 10:55	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3100 mg/L		07/18/14 14:13	DAS	SM 2540E 18Ed*

Sample No: **4072974-03**
Sample Description: **T206 Startup-Short List**

Collect Date: **07/18/14 06:12**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	61000 mg/L		07/18/14 13:02	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	38000 mg/L		07/19/14 10:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	8500 mg/L		07/18/14 10:55	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	610 mg/L		07/18/14 12:30	ACV	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411959 - 04-No Prep WC								
Blank (B411959-BLK1)			Prepared & Analyzed: 07/18/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B411959-BS1)			Prepared & Analyzed: 07/18/14					
Solids - total suspended solids (TSS)	103	mg/L	100.0	103	82.9-110			
Duplicate (B411959-DUP1)			Prepared & Analyzed: 07/18/14					
Solids - total suspended solids (TSS)	6.80	mg/L		5.60			19	5
Duplicate (B411959-DUP2)			Prepared & Analyzed: 07/18/14					
Solids - total suspended solids (TSS)	8300	mg/L		8500			2	5
Batch B411984 - 04-No Prep WC								
Calibration Blank (B411984-CCB1)			Prepared & Analyzed: 07/18/14					
COD	-0.00477	mg/L						
Calibration Blank (B411984-CCB2)			Prepared & Analyzed: 07/18/14					
COD	-5.07	mg/L						
Calibration Check (B411984-CCV1)			Prepared & Analyzed: 07/18/14					
COD	97.9	mg/L	100.0	98	95-105			
Calibration Check (B411984-CCV2)			Prepared & Analyzed: 07/18/14					
COD	482	mg/L	500.0	96	95-105			
Duplicate (B411984-DUP1)			Prepared & Analyzed: 07/18/14					
COD	36.0	mg/L		36.0			0	20
Duplicate (B411984-DUP2)			Prepared & Analyzed: 07/18/14					
COD	44100	mg/L		44300			0.5	20
Duplicate (B411984-DUP3)			Prepared & Analyzed: 07/18/14					
COD - soluble	1110	mg/L		1120			0.8	20
Batch B411999 - 04-No Prep WC								
Blank (B411999-BLK1)			Prepared & Analyzed: 07/19/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B411999-BS1)			Prepared & Analyzed: 07/19/14					
Solids - total dissolved solids (TDS)	976	mg/L	1000	98	75.1-119			
Duplicate (B411999-DUP1)			Prepared & Analyzed: 07/19/14					
Solids - total dissolved solids (TDS)	38200	mg/L		37800			0.9	5

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412005 - 04-No Prep WC								
Blank (B412005-BLK1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	< 0.10	mg/L						
LCS (B412005-BS1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B412005-MS1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	27.4	mg/L	10.00	17.9	95	80-120		
Matrix Spike Dup (B412005-MSD1)			Prepared & Analyzed: 07/18/14					
Ammonia-N	27.6	mg/L	10.00	17.9	97	80-120	0.7	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411937 - 04-IC No Prep								
Calibration Blank (B411937-CCB1)			Prepared & Analyzed: 07/18/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.376	mg/L						
Calibration Check (B411937-CCV1)			Prepared & Analyzed: 07/18/14					
Nitrite-N	2.06	mg/L	2.000		103	90-110		
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Matrix Spike (B411937-MS1)			Prepared & Analyzed: 07/18/14					
Nitrite-N	Q1 76.6	mg/L	125.0	ND	61	80-120		
Nitrate-N	Q1 50	mg/L	56.48	5.9	79	80-120		
Matrix Spike Dup (B411937-MSD1)			Prepared & Analyzed: 07/18/14					
Nitrite-N	Q2 83.6	mg/L	125.0	ND	67	80-120	9	20
Nitrate-N	61	mg/L	56.48	5.9	98	80-120	19	20



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Laboratory Results

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EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

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Missouri Department of Natural Resources

Q2 MSD failed %R

Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

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Laboratory Results

Sample No: **4073134-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/19/14 05:07**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	5.3 mg/L		07/19/14 10:13	DAW	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/19/14 10:30	DAW	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	6600 mg/L		07/19/14 12:13	DAW	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/19/14 12:14	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	8800 mg/L		07/19/14 10:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4100 mg/L		07/21/14 10:06	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.38 mg/L		07/19/14 11:15	DAW	SM(18) 4500 NH3 04KS F

Sample No: **4073134-02**
Sample Description: **T4 Startup**

Collect Date: **07/19/14 05:11**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	6700 mg/L		07/19/14 10:50	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	2900 mg/L		07/21/14 10:06	DAW	SM 2540E 18Ed*

Sample No: **4073134-03**
Sample Description: **T206 Startup-Short List**

Collect Date: **07/19/14 05:00**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	58000 mg/L		07/19/14 12:13	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	39000 mg/L		07/21/14 13:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	5100 mg/L		07/19/14 10:50	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	460 mg/L		07/19/14 11:15	DAW	SM(18) 4500 NH3 04KS F

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412003 - 04-No Prep WC								
Calibration Blank (B412003-CCB1)			Prepared: 07/18/14 Analyzed: 07/19/14					
COD	-0.800	mg/L						
Calibration Blank (B412003-CCB2)			Prepared: 07/18/14 Analyzed: 07/19/14					
COD	-5.10	mg/L						
Calibration Check (B412003-CCV1)			Prepared: 07/18/14 Analyzed: 07/19/14					
COD	99.5	mg/L	100.0		100	95-105		
Calibration Check (B412003-CCV2)			Prepared: 07/18/14 Analyzed: 07/19/14					
COD	506	mg/L	500.0		101	95-105		
Duplicate (B412003-DUP1)			Prepared: 07/18/14 Analyzed: 07/19/14					
COD	4.40	mg/L		4.20			5	20
Duplicate (B412003-DUP2)			Prepared: 07/18/14 Analyzed: 07/19/14					
COD	24300	mg/L		24300			0.4	20
Duplicate (B412003-DUP3)			Prepared & Analyzed: 07/19/14					
COD - soluble	1300	mg/L		1300			0.3	20
Batch B412008 - 04-No Prep WC								
Blank (B412008-BLK1)			Prepared & Analyzed: 07/19/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412008-BS1)			Prepared & Analyzed: 07/19/14					
Solids - total suspended solids (TSS)	98.0	mg/L	100.0		98	82.9-110		
Duplicate (B412008-DUP1)			Prepared & Analyzed: 07/19/14					
Solids - total suspended solids (TSS)	3.60	mg/L		3.20			12	5
Duplicate (B412008-DUP2)			Prepared & Analyzed: 07/19/14					
Solids - total suspended solids (TSS)	8780	mg/L		8760			0.2	5
Batch B412053 - 04-No Prep WC								
Duplicate (B412053-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total volatile suspended solids	4080	mg/L		4080			0	5
Batch B412066 - 04-No Prep WC								
Blank (B412066-BLK1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412066-BS1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	1050	mg/L	1000		105	75.1-119		
Duplicate (B412066-DUP1)			Prepared & Analyzed: 07/21/14					

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 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/21/14 9:07
 Report Date: 07/22/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412066 - 04-No Prep WC								
Duplicate (B412066-DUP1)	Source: 4073034-03	Prepared and Analyzed: 07/21/14						
Solids - total dissolved solids (TDS)	437	mg/L		441			0.9	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412050 - 04-No Prep WC								
Blank (B412050-BLK1)	Prepared and Analyzed: 07/19/14							
Ammonia-N	< 0.10	mg/L						
LCS (B412050-BS1)	Prepared and Analyzed: 07/19/14							
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B412050-MS1)	Source: 4073134-03	Prepared and Analyzed: 07/19/14						
Ammonia-N	567	mg/L	100.0	461	106	80-120		
Matrix Spike Dup (B412050-MSD1)	Source: 4073134-03	Prepared and Analyzed: 07/19/14						
Ammonia-N	571	mg/L	100.0	461	110	80-120	0.7	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B411937 - 04-IC No Prep								
Calibration Blank (B411937-CCB1)	Prepared and Analyzed: 07/18/14							
Nitrite-N	0.00	mg/L						
Nitrate-N	0.376	mg/L						
Calibration Check (B411937-CCV1)	Prepared and Analyzed: 07/18/14							
Nitrite-N	2.06	mg/L	2.000		103	90-110		
Nitrate-N	1.19	mg/L	1.130		105	90-110		
Matrix Spike (B411937-MS1)	Source: 4072648-01	Prepared and Analyzed: 07/18/14						
Nitrite-N	Q1 76.6	mg/L	125.0	ND	61	80-120		
Nitrate-N	Q1 50	mg/L	56.48	5.9	79	80-120		
Matrix Spike Dup (B411937-MSD1)	Source: 4072648-01	Prepared and Analyzed: 07/18/14						
Nitrite-N	Q2 83.6	mg/L	125.0	ND	67	80-120	9	20
Nitrate-N	61	mg/L	56.48	5.9	98	80-120	19	20



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Laboratory Results

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NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
STL PDC Laboratories - St. Louis, MO
TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050
Drinking Water Certifications: Missouri (1050)
Missouri Department of Natural Resources

Q2 MSD failed %R
Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

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(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)											
1 CLIENT ADDRESS CITY STATE ZIP CONTACT PERSON		PROJECT NUMBER PHONE NUMBER SAMPLER'S SIGNATURE		P.O. NUMBER FAX NUMBER MATRIX TYPES: WW-WASTEWATER DW-DRINKING WATER GW-GROUND WATER WWSL-SLUDGE NAS-SOLID LCHT-LEACHATE NAL-NON-AQUEOUS SOIL-SOILS							
				3 ANALYSIS REQUESTED COD + AMMONIA TSS/VSS + NITRATE/NITRITE TSS/VSS D/VSS COD (FF)							
2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT		DATE COLLECTED TIME COLLECTED SAMPLE TYPE MATRIX TYPE Bottle Count		4 (FOR LAB USE ONLY) LOGIN # LOGGED BY: LAB PROJ. # TEMPLATE: PROJ. MGR.: REMARKS							
T3 STARTUP		7/19/14	0507	✓	LCHT 3	✓	✓				
T4 STARTUP		7/19/14	0511	✓	LCHT 1			✓			
T206 STARTUP		7/19/14	0500	✓	LCHT 2	✓	✓				
5 TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) NORMAL (8-10 Bus. Days) RUSH (5 Bus. Days) <i>Fastrak™</i> (3 Bus. Days) 1-2 Bus. Days Same Day DATE DUE _____ RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE											
The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature. 6											
7 RELINQUISHED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE)		DATE TIME RECEIVED BY: DATE TIME RECEIVED BY: DATE TIME RECEIVED BY:		COMMENTS:(FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE PROPER BOTTLES RECEIVED IN GOOD CONDITION BOTTLES FILLED WITH ADEQUATE VOLUME SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE							
				24 °C YORN YORN YORN YORN							

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Bridgeton Landfill
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St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/21/14 10:55
Report Date: 07/22/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073172-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/20/14 06:26**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		07/21/14 12:34	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/21/14 12:51	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	6600 mg/L		07/21/14 13:53	DAW	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/21/14 13:52	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	7500 mg/L		07/21/14 12:35	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3000 mg/L		07/21/14 14:15	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.66 mg/L		07/21/14 11:30	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4073172-02**
Sample Description: **T4 Startup**

Collect Date: **07/20/14 06:32**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	7100 mg/L		07/21/14 12:35	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3000 mg/L		07/21/14 14:15	DAW	SM 2540E 18Ed*

Sample No: **4073172-03**
Sample Description: **T206 Startup-Short List**

Collect Date: **07/20/14 06:17**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	61000 mg/L		07/21/14 13:53	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	38000 mg/L		07/21/14 13:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	10000 mg/L		07/21/14 12:35	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	1000 mg/L		07/21/14 11:30	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/21/14 10:55
 Report Date: 07/22/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412066 - 04-No Prep WC								
Blank (B412066-BLK1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412066-BS1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	1050	mg/L	1000		105	75.1-119		
Duplicate (B412066-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	437	mg/L		441			0.9	5
Batch B412075 - 04-No Prep WC								
Blank (B412075-BLK1)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412075-BS1)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	104	mg/L	100.0		104	82.9-110		
Duplicate (B412075-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	1440	mg/L		1420			1	5
Duplicate (B412075-DUP2)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	7440	mg/L		7540			1	5
Batch B412098 - 04-No Prep WC								
Calibration Blank (B412098-CCB1)			Prepared & Analyzed: 07/21/14					
COD	-5.10	mg/L						
Calibration Check (B412098-CCV1)			Prepared & Analyzed: 07/21/14					
COD	487	mg/L	500.0		97	95-105		
Duplicate (B412098-DUP1)			Prepared & Analyzed: 07/21/14					
COD	6650	mg/L		6650			0	20
Duplicate (B412098-DUP2)			Prepared & Analyzed: 07/21/14					
COD - soluble	1270	mg/L		1270			0.3	20
Batch B412109 - 04-No Prep WC								
Duplicate (B412109-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total volatile suspended solids	3020	mg/L		3040			0.7	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit

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Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412119 - 04-No Prep WC								
Calibration Blank (B412119-CCB1)			Prepared & Analyzed: 07/21/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B412119-CCV1)			Prepared & Analyzed: 07/21/14					
Ammonia-N	9.98	mg/L	10.00		100	90-110		
Matrix Spike (B412119-MS1)			Prepared & Analyzed: 07/21/14					
Ammonia-N	1460	mg/L	200.0	1270	96	80-120		
Matrix Spike Dup (B412119-MSD1)			Prepared & Analyzed: 07/21/14					
Ammonia-N	1460	mg/L	200.0	1270	95	80-120	0.1	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412148 - 04-IC No Prep								
Calibration Blank (B412148-CCB1)			Prepared & Analyzed: 07/21/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B412148-CCV1)			Prepared: 07/21/14 Analyzed: 07/22/14					
Nitrate-N	1.20	mg/L	1.130		106	90-110		
Nitrite-N	2.05	mg/L	2.000		103	90-110		
Matrix Spike (B412148-MS1)			Prepared & Analyzed: 07/21/14					
Nitrate-N	Q1 3.5	mg/L	1.130	2.6	77	80-120		
Nitrite-N	Q4 81.0	mg/L	2.500	83.2	NR	80-120		
Matrix Spike Dup (B412148-MSD1)			Prepared & Analyzed: 07/21/14					
Nitrite-N	Q4 80.0	mg/L	2.500	83.2	NR	80-120	1	20
Nitrate-N	Q2 3.5	mg/L	1.130	2.6	75	80-120	0.7	20



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Laboratory Results

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.
- Q2 MSD failed %R
- Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

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Attn: Bill Abernathy

Date Received: 07/21/14 11:04
Report Date: 07/28/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073175-01**
Sample Description: **T3 Startup-Long List**

Collect Date: **07/21/14 07:22**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	5.5 mg/L		07/21/14 13:09	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/21/14 13:26	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
Alkalinity - total as CaCO ₃	1500 mg/L		07/22/14 11:00	ACV	SM 2320B 18Ed*
BOD - soluble	< 80 mg/L		07/21/14 12:05	DAS	SM 5210B 18Ed*
COD	6300 mg/L		07/21/14 13:53	DAW	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/21/14 13:53	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	7000 mg/L		07/21/14 13:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	8900 mg/L		07/21/14 12:35	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4100 mg/L		07/21/14 14:15	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	3.4 mg/L		07/21/14 11:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.22 mg/L		07/22/14 09:22	WPS	200.7 04KS
Zinc	0.13 mg/L		07/22/14 09:22	WPS	200.7 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	< 0.050 mg/L		07/21/14 14:15	ACV	SM 4500P B E 18ed*
<u>Total Metals - STL</u>					
Arsenic	0.54 mg/L		07/22/14 09:23	WPS	200.7 04KS
Hardness	4300 mg/L		07/22/14 09:18	WPS	SM 2340B
Calcium	1400 mg/L		07/22/14 09:18	WPS	200.7 04KS
Magnesium	210 mg/L		07/22/14 09:18	WPS	200.7 04KS
Zinc	4.0 mg/L		07/22/14 09:23	WPS	200.7 04KS

Sample No: **4073175-02**
Sample Description: **T4 Startup**

Collect Date: **07/21/14 07:27**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	7700 mg/L		07/21/14 12:35	DAW	SM 2540D 18Ed 04KS



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Date Received: 07/21/14 11:04
Report Date: 07/28/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073175-02**
Sample Description: **T4 Startup**

Collect Date: **07/21/14 07:27**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total volatile suspended solids	3500 mg/L		07/21/14 14:15	DAW	SM 2540E 18Ed*

Sample No: **4073175-03**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/21/14 07:06**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	2100 mg/L		07/22/14 11:00	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	5500 mg/L		07/22/14 11:00	ACV	SM 2320B 18Ed*
COD	66000 mg/L		07/21/14 13:53	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	39000 mg/L		07/21/14 13:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	10000 mg/L		07/21/14 12:35	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	1300 mg/L		07/21/14 11:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.95 mg/L		07/22/14 09:25	WPS	200.7 04KS
Zinc	6.5 mg/L		07/22/14 09:25	WPS	200.7 04KS
<u>Total Metals - STL</u>					
Arsenic	1.4 mg/L		07/22/14 09:35	WPS	200.7 04KS
Hardness	13000 mg/L		07/22/14 09:20	WPS	SM 2340B
Calcium	4500 mg/L		07/22/14 09:20	WPS	200.7 04KS
Magnesium	500 mg/L		07/22/14 09:20	WPS	200.7 04KS
Zinc	8.0 mg/L		07/22/14 09:35	WPS	200.7 04KS

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Date Received: 07/21/14 11:04
 Report Date: 07/28/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412066 - 04-No Prep WC								
Blank (B412066-BLK1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412066-BS1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	1050	mg/L	1000		105	75.1-119		
Duplicate (B412066-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total dissolved solids (TDS)	437	mg/L		441			0.9	5
Batch B412070 - 04-No Prep WC								
Duplicate (B412070-DUP2)			Prepared & Analyzed: 07/21/14					
BOD - soluble	< 80	mg/L		ND				20
Batch B412075 - 04-No Prep WC								
Blank (B412075-BLK1)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412075-BS1)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	104	mg/L	100.0		104	82.9-110		
Duplicate (B412075-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	1440	mg/L		1420			1	5
Duplicate (B412075-DUP2)			Prepared & Analyzed: 07/21/14					
Solids - total suspended solids (TSS)	7440	mg/L		7540			1	5
Batch B412098 - 04-No Prep WC								
Calibration Blank (B412098-CCB1)			Prepared & Analyzed: 07/21/14					
COD	-5.10	mg/L						
Calibration Check (B412098-CCV1)			Prepared & Analyzed: 07/21/14					
COD	487	mg/L	500.0		97	95-105		
Duplicate (B412098-DUP1)			Prepared & Analyzed: 07/21/14					
COD	6650	mg/L		6650			0	20
Duplicate (B412098-DUP2)			Prepared & Analyzed: 07/21/14					
COD - soluble	1270	mg/L		1270			0.3	20
Batch B412109 - 04-No Prep WC								
Duplicate (B412109-DUP1)			Prepared & Analyzed: 07/21/14					
Solids - total volatile suspended solids	3020	mg/L		3040			0.7	5
Batch B412177 - 04-No Prep WC								

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 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/21/14 11:04
 Report Date: 07/28/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412177 - 04-No Prep WC								
Duplicate (B412177-DUP1)	Source: 4073175-03		Prepared & Analyzed: 07/22/14					
Acidity	2180	mg/L		2100			4	20
Batch B412178 - 04-No Prep WC								
Blank (B412178-BLK1)			Prepared & Analyzed: 07/22/14					
Alkalinity - total as CaCO ₃	< 20	mg/L						
LCS (B412178-BS1)			Prepared & Analyzed: 07/22/14					
Alkalinity - total as CaCO ₃	996	mg/L	1000		100	90-110		
Duplicate (B412178-DUP1)	Source: 4073175-03		Prepared & Analyzed: 07/22/14					
Alkalinity - total as CaCO ₃	5440	mg/L		5460			0.4	20

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412119 - 04-No Prep WC								
Calibration Blank (B412119-CCB1)			Prepared & Analyzed: 07/21/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B412119-CCV1)			Prepared & Analyzed: 07/21/14					
Ammonia-N	9.98	mg/L	10.00		100	90-110		
Matrix Spike (B412119-MS1)	Source: 4073175-03		Prepared & Analyzed: 07/21/14					
Ammonia-N	1460	mg/L	200.0	1270	96	80-120		
Matrix Spike Dup (B412119-MSD1)	Source: 4073175-03		Prepared & Analyzed: 07/21/14					
Ammonia-N	1460	mg/L	200.0	1270	95	80-120	0.1	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412118 - 04-No Prep WC								
Calibration Blank (B412118-CCB1)			Prepared & Analyzed: 07/21/14					
Phosphorus - ortho as P	0.00	mg/L						
Calibration Check (B412118-CCV1)			Prepared & Analyzed: 07/21/14					
Phosphorus - ortho as P	0.497	mg/L	0.5000		99	90-110		
Matrix Spike (B412118-MS1)	Source: 4073175-01		Prepared & Analyzed: 07/21/14					
Phosphorus - ortho as P	0.532	mg/L	0.5000	0.0140	104	80-120		

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Laboratory Results**Soluble Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412118 - 04-No Prep WC								
Matrix Spike Dup (B412118-MSD1)	Source: 4073175-01		Prepared & Analyzed: 07/21/14					
Phosphorus - ortho as P	0.507	mg/L	0.5000	0.0140	99	80-120	5	20

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412078 - 04 EPA 200.2 R2.8								
Blank (B412078-BLK1)	Prepared: 07/21/14 Analyzed: 07/22/14							
Arsenic	< 0.010	mg/L						
Calcium	< 0.19	mg/L						
Magnesium	< 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412078-BS1)	Prepared: 07/21/14 Analyzed: 07/22/14							
Arsenic	0.199	mg/L	0.2000		99	85-115		
Calcium	0.221	mg/L	0.2000		111	85-115		
Magnesium	0.230	mg/L	0.2000		115	85-115		
Zinc	0.208	mg/L	0.2000		104	85-115		
Matrix Spike (B412078-MS1)	Source: 4073175-03		Prepared: 07/21/14 Analyzed: 07/22/14					
Arsenic	1.52	mg/L	0.5000	1.38	28	70-130		
Magnesium	Q4 392	mg/L	0.5000	501	NR	70-130		
Zinc	7.06	mg/L	0.5000	8.02	NR	70-130		
Matrix Spike Dup (B412078-MSD1)	Source: 4073175-03		Prepared: 07/21/14 Analyzed: 07/22/14					
Arsenic	1.54	mg/L	0.5000	1.38	33	70-130	2	20
Magnesium	Q4 393	mg/L	0.5000	501	NR	70-130	0.3	20
Zinc	6.95	mg/L	0.5000	8.02	NR	70-130	1	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412078 - 04 EPA 200.2 R2.8								
Blank (B412078-BLK1)	Prepared: 07/21/14 Analyzed: 07/22/14							
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412078-BS1)	Prepared: 07/21/14 Analyzed: 07/22/14							
Arsenic	0.199	mg/L	0.2000		99	85-115		

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 Customer #: 277310
 PO#: 4468816

Laboratory Results**Soluble Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412078 - 04 EPA 200.2 R2.8								
LCS (B412078-BS1)			Prepared: 07/21/14 Analyzed: 07/22/14					
Zinc	0.208	mg/L	0.2000		104	85-115		
Matrix Spike (B412078-MS1)			Source: 4073175-03 Prepared: 07/21/14 Analyzed: 07/22/14					
Arsenic	1.52	mg/L	0.5000	0.951	114	70-130		
Zinc	7.06	mg/L	0.5000	6.47	118	70-130		
Matrix Spike Dup (B412078-MSD1)			Source: 4073175-03 Prepared: 07/21/14 Analyzed: 07/22/14					
Arsenic	1.54	mg/L	0.5000	0.951	119	70-130	2	20
Zinc	6.95	mg/L	0.5000	6.47	98	70-130	1	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412148 - 04-IC No Prep								
Calibration Blank (B412148-CCB1)			Prepared & Analyzed: 07/21/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B412148-CCV1)			Prepared: 07/21/14 Analyzed: 07/22/14					
Nitrite-N	2.05	mg/L	2.000		103	90-110		
Nitrate-N	1.20	mg/L	1.130		106	90-110		
Matrix Spike (B412148-MS1)			Source: 4073064-04 Prepared & Analyzed: 07/21/14					
Nitrate-N	Q1 3.5	mg/L	1.130	2.6	77	80-120		
Nitrite-N	Q4 81.0	mg/L	2.500	83.2	NR	80-120		
Matrix Spike Dup (B412148-MSD1)			Source: 4073064-04 Prepared & Analyzed: 07/21/14					
Nitrate-N	Q2 3.5	mg/L	1.130	2.6	75	80-120	0.7	20
Nitrite-N	Q4 80.0	mg/L	2.500	83.2	NR	80-120	1	20



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Customer #: 277310
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Laboratory Results

Notes

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Q2 MSD failed %R

Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488
Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1

CLIENT

BARR/BRIDGETON LF

PROJECT NUMBER

P.O. NUMBER

MEANS SHIPPED

ADDRESS

PHONE NUMBER

FAX NUMBER

EMAIL ADDRESS

CITY

STATE

ZIP

CONTACT PERSON

SAMPLER

SAMPLER'S SIGNATURE

MATRIX TYPES:

WW-WASTEWATER

DW-DRINKING WATER

GW-GROUND WATER

WWSL-SLUDGE

NAS-SOLID

L'CHT-LEACHATE

NAL-NONAQUEOUS

SOIL-SOILS

3

ANALYSIS REQUESTED

COD+AMMONIA

DSS COD (FF)

TSS/BS

DISS AS+ZN (FF)

TOTAL AS+ZN

TSS, TDS, ALK, TOTAL ACIDITY, HARDNESS

TSS/SS, NITRATE, NITRITE, TDS, ALK, HARDNESS

DISS BOD (FF)

DISS PH (FF)

4

(FOR LAB USE ONLY)

LOGIN #

4073175

LOGGED BY:

HE

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

2

SAMPLE DESCRIPTION AS YOU WANT ON REPORT

DATE COLLECTED

TIME COLLECTED

SAMPLE TYPE

MATRIX TYPE

Bottle Count

T3 STARTUP

7/21/14

0722

✓

LCHT

8

T4 STARTUP

7/21/14

0727

✓

LCHT

1

T206 STARTUP

7/21/14

0706

✓

LCHT

5

REMARKS

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days)

RUSH (5 Bus. Days)

Fastrak™ (3 Bus. Days)

1-2 Bus. Days

Same Day

DATE DUE

7/22/14

RESULTS BY:

E-MAIL

FAX

PHONE CALL

PHONE/FAX# IF DIFFERENT FROM ABOVE

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

7

RELINQUISHED BY: (SIGNATURE)

DATE

7-21-14

TIME

10:05

RECEIVED BY:

[Signature]

DATE

7-21-14

TIME

10:30

RECEIVED BY:

[Signature]

DATE

TIME

RECEIVED BY:

DATE

TIME

RECEIVED BY:

DATE

TIME

RECEIVED BY:

DATE

TIME

RECEIVED BY:

8

COMMENTS (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

5.0 °C

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLE(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/22/14 13:53
Report Date: 07/23/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073392-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/22/14 08:37**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		07/23/14 11:45	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/23/14 11:58	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	6600 mg/L		07/23/14 08:12	DAW	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/23/14 08:12	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	9000 mg/L		07/22/14 14:40	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3800 mg/L		07/23/14 08:45	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.75 mg/L		07/23/14 10:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4073392-02**
Sample Description: **T4 Startup**

Collect Date: **07/22/14 08:44**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	8800 mg/L		07/22/14 14:40	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3600 mg/L		07/23/14 08:45	DAW	SM 2540E 18Ed*

Sample No: **4073392-03**
Sample Description: **T206 Startup-Short List**

Collect Date: **07/22/14 08:29**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	62000 mg/L		07/23/14 08:12	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	38000 mg/L		07/22/14 14:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	9000 mg/L		07/22/14 14:40	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	700 mg/L		07/23/14 10:00	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/22/14 13:53
 Report Date: 07/23/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B412186 - 04-No Prep WC

Blank (B412186-BLK1)			Prepared & Analyzed: 07/22/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412186-BS1)			Prepared & Analyzed: 07/22/14					
Solids - total dissolved solids (TDS)	1000	mg/L	1000		100	75.1-119		
Duplicate (B412186-DUP1)			Prepared & Analyzed: 07/22/14					
Solids - total dissolved solids (TDS)	39100	mg/L		38000			3	5

Batch B412187 - 04-No Prep WC

Blank (B412187-BLK1)			Prepared & Analyzed: 07/22/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412187-BS1)			Prepared & Analyzed: 07/22/14					
Solids - total suspended solids (TSS)	97.0	mg/L	100.0		97	82.9-110		
Duplicate (B412187-DUP1)			Prepared & Analyzed: 07/22/14					
Solids - total suspended solids (TSS)	9040	mg/L		9000			0.4	5

Batch B412219 - 04-No Prep WC

Calibration Blank (B412219-CCB1)			Prepared: 07/22/14 Analyzed: 07/23/14					
COD	-5.10	mg/L						
Calibration Check (B412219-CCV1)			Prepared: 07/22/14 Analyzed: 07/23/14					
COD	491	mg/L	500.0		98	95-105		
Duplicate (B412219-DUP1)			Prepared: 07/22/14 Analyzed: 07/23/14					
COD	61300	mg/L		61700			0.7	20
Duplicate (B412219-DUP2)			Prepared & Analyzed: 07/23/14					
COD - soluble	1290	mg/L		1300			0.7	20

Batch B412239 - 04-No Prep WC

Blank (B412239-BLK1)			Prepared & Analyzed: 07/23/14					
Solids - total volatile suspended solids	< 4.0	mg/L						
Duplicate (B412239-DUP1)			Prepared & Analyzed: 07/23/14					
Solids - total volatile suspended solids	3860	mg/L		3840			0.5	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

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 Customer #: 277310
 PO#: 4468816

Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412275 - 04-No Prep WC								
Blank (B412275-BLK1)			Prepared & Analyzed: 07/23/14					
Ammonia-N	< 0.10	mg/L						
LCS (B412275-BS1)			Prepared & Analyzed: 07/23/14					
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B412275-MS1)			Prepared & Analyzed: 07/23/14					
Ammonia-N	10.8	mg/L	10.00	0.926	99	80-120		
Matrix Spike Dup (B412275-MSD1)			Prepared & Analyzed: 07/23/14					
Ammonia-N	10.4	mg/L	10.00	0.926	95	80-120	4	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412248 - 04-IC No Prep								
Calibration Blank (B412248-CCB1)			Prepared & Analyzed: 07/23/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.295	mg/L						
Calibration Check (B412248-CCV1)			Prepared & Analyzed: 07/23/14					
Nitrate-N	1.24	mg/L	1.130		110	90-110		
Nitrite-N	2.05	mg/L	2.000		103	90-110		



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Laboratory Results

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UST Certification; Iowa (240)

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EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry

No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

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State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

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1

CLIENT

BARR/BROGETON LF

PROJECT NUMBER

P.O. NUMBER

MEANS SHIPPED

ADDRESS

PHONE NUMBER

FAX NUMBER

EMAIL ADDRESS

CITY

STATE

ZIP

SAMPLER

SAMPLER'S SIGNATURE

MATRIX TYPES:

WW-WASTEWATER

DW-DRINKING WATER

GW-GROUND WATER

WWSL-SLUDGE

NAS-SOLID

L'CHT-LEACHATE

NAL-NONAQUEOUS

SOIL-SOILS

CONTACT PERSON

3

ANALYSIS REQUESTED

COD+AMMONIA

TSS/VSS+L'CHT/NITRATE

DISS COD (FF)

TSS/VSS

TSS/TDS

4

(FOR LAB USE ONLY)

LOGIN #

4073296

LOGGED BY:

HE

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

2

SAMPLE DESCRIPTION

AS YOU WANT ON REPORT

DATE

TIME

SAMPLE TYPE

MATRIX

Bottle

COLLECTED

COLLECTED

GRAB

COMP

TYPE

Count

T3 STARTUP

7/22/14

0837

✓

LCHT

3

T4 STARTUP

7/22/14

0844

✓

LCHT

1

T206 STARTUP

7/22/14

0829

✓

LCHT

2

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days)

RUSH (5 Bus. Days)

Fastrak™ (3 Bus. Days)

1-2 Bus. Days

Same Day

DATE DUE

7/23/14

RESULTS BY:

E-MAIL

FAX

PHONE CALL

PHONE/FAX# IF DIFFERENT FROM ABOVE

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

7

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

8

COMMENTS:(FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLE(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/23/14 10:02
Report Date: 07/24/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073489-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/23/14 06:34**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		07/23/14 12:20	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/23/14 12:37	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	5900 mg/L		07/24/14 08:05	DAW	SM 5220D 18Ed 04KS
COD - soluble	1300 mg/L		07/24/14 08:04	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	9600 mg/L		07/23/14 15:35	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4200 mg/L		07/23/14 15:35	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.76 mg/L		07/23/14 13:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4073489-02**
Sample Description: **T4 Startup**

Collect Date: **07/23/14 06:38**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	8600 mg/L		07/23/14 15:35	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3800 mg/L		07/23/14 15:35	DAS	SM 2540E 18Ed*

Sample No: **4073489-03**
Sample Description: **T206 Startup-Short List**

Collect Date: **07/23/14 06:27**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	67000 mg/L		07/24/14 08:05	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	39000 mg/L		07/23/14 11:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	6200 mg/L		07/23/14 15:35	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	720 mg/L		07/23/14 13:00	ACV	SM(18) 4500 NH3 04KS F

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 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/23/14 10:02
 Report Date: 07/24/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412246 - 04-No Prep WC								
Blank (B412246-BLK1)			Prepared & Analyzed: 07/23/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412246-BS1)			Prepared & Analyzed: 07/23/14					
Solids - total dissolved solids (TDS)	1010	mg/L	1000		101	75.1-119		
Duplicate (B412246-DUP1)			Prepared & Analyzed: 07/23/14					
Solids - total dissolved solids (TDS)	38200	mg/L		39000			2	5
Batch B412279 - 04-No Prep WC								
Blank (B412279-BLK1)			Prepared & Analyzed: 07/23/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412279-BS1)			Prepared & Analyzed: 07/23/14					
Solids - total suspended solids (TSS)	103	mg/L	100.0		103	82.9-110		
Duplicate (B412279-DUP1)			Prepared & Analyzed: 07/23/14					
Solids - total suspended solids (TSS)	9620	mg/L		9580			0.4	5
Duplicate (B412279-DUP2)			Prepared & Analyzed: 07/23/14					
Solids - total suspended solids (TSS)	1660	mg/L		1600			4	5
Batch B412283 - 04-No Prep WC								
Calibration Blank (B412283-CCB1)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD	-1.30	mg/L						
Calibration Blank (B412283-CCB2)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD	-5.10	mg/L						
Calibration Check (B412283-CCV1)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD	97.4	mg/L	100.0		97	95-105		
Calibration Check (B412283-CCV2)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD	493	mg/L	500.0		99	95-105		
Duplicate (B412283-DUP1)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD	10.7	mg/L		11.0			3	20
Duplicate (B412283-DUP2)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD	934	mg/L		925			0.9	20
Duplicate (B412283-DUP3)			Prepared: 07/23/14 Analyzed: 07/24/14					
COD - soluble	1320	mg/L		1300			1	20
Batch B412331 - 04-No Prep WC								
Duplicate (B412331-DUP1)			Source: 4073489-01 Prepared & Analyzed: 07/23/14					

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Bridgeton Landfill
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 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/23/14 10:02
 Report Date: 07/24/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B412331 - 04-No Prep WC

Duplicate (B412331-DUP1)	Source: 4073489-01	Prepared & Analyzed: 07/23/14						
Solids - total volatile suspended solids	3980	mg/L		4160			4	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B412275 - 04-No Prep WC

Blank (B412275-BLK1)	Prepared & Analyzed: 07/23/14							
Ammonia-N	< 0.10	mg/L						
LCS (B412275-BS1)	Prepared & Analyzed: 07/23/14							
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B412275-MS1)	Source: 4073286-02	Prepared & Analyzed: 07/23/14						
Ammonia-N	10.8	mg/L	10.00	0.926	99	80-120		
Matrix Spike Dup (B412275-MSD1)	Source: 4073286-02	Prepared & Analyzed: 07/23/14						
Ammonia-N	10.4	mg/L	10.00	0.926	95	80-120	4	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B412248 - 04-IC No Prep

Calibration Blank (B412248-CCB1)	Prepared & Analyzed: 07/23/14							
Nitrite-N	0.295	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B412248-CCV1)	Prepared & Analyzed: 07/23/14							
Nitrite-N	2.05	mg/L	2.000		103	90-110		
Nitrate-N	1.24	mg/L	1.130		110	90-110		
Matrix Spike (B412248-MS1)	Source: 4073298-03	Prepared & Analyzed: 07/23/14						
Nitrite-N	28.4	mg/L	25.00	ND	113	80-120		
Nitrate-N	48	mg/L	11.30	37	94	80-120		
Matrix Spike Dup (B412248-MSD1)	Source: 4073298-03	Prepared & Analyzed: 07/23/14						
Nitrate-N	47	mg/L	11.30	37	91	80-120	0.8	20
Nitrite-N	28.5	mg/L	25.00	ND	114	80-120	0.4	20



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Date Received: 07/23/14 10:02
Report Date: 07/24/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Notes

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NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry

No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Certified by: Roxann Shull, Client Services Supervisor

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1

CLIENT

GARRY BRIDGETON LF

PROJECT NUMBER

P.O. NUMBER

MEANS SHIPPED

3

ANALYSIS REQUESTED

COD + AMMONIA

TSS/VSS + NITRATE/NITRITE

DISS COD (FF)

TSS/VSS

TSS/TDS

4

(FOR LAB USE ONLY)

LOGIN #

407348

LOGGED BY:

HE

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

2

SAMPLE DESCRIPTION

AS YOU WANT ON REPORT

DATE

TIME

SAMPLE TYPE

MATRIX

Bottle

COLLECTED

COLLECTED

GRAB

COMP

TYPE

Count

T3 STARTUP

7/23/14

0634

✓

LCHT

3

T4 STARTUP

7/23/14

0638

✓

LCHT

1

T206 STARTUP

7/23/14

0627

✓

LCHT

2

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days)

RUSH (5 Bus. Days)

Fastrak™ (3 Bus. Days)

1-2 Bus. Days

Same Day

DATE DUE

7/24/14

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

7

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

8

COMMENTS: (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLES(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/24/14 11:30
Report Date: 08/01/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073740-01**
Sample Description: **T3 Startup-Long List**

Collect Date: **07/24/14 06:45**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	6.7 mg/L		07/24/14 13:34	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/24/14 13:51	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
Alkalinity - total as CaCO ₃	4300 mg/L		07/24/14 14:00	ACV	SM 2320B 18Ed*
BOD - soluble	14 mg/L		07/24/14 13:30	DAS	SM 5210B 18Ed*
COD	7000 mg/L		07/25/14 07:43	DAW	SM 5220D 18Ed 04KS
COD - soluble	1400 mg/L		07/25/14 07:43	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	7400 mg/L		07/24/14 13:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	8900 mg/L		07/24/14 15:30	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	3800 mg/L		07/25/14 10:15	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	2.0 mg/L		07/25/14 11:00	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.22 mg/L		07/25/14 09:19	WPS	200.7 04KS
Zinc	0.079 mg/L		07/25/14 09:19	WPS	200.7 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	< 0.050 mg/L		07/24/14 13:30	ACV	SM 4500P B E 18ed*
<u>Total Metals - STL</u>					
Arsenic	0.54 mg/L		07/25/14 09:21	WPS	200.7 04KS
Hardness	4600 mg/L		07/25/14 09:15	WPS	SM 2340B
Calcium	1500 mg/L	Q4	07/25/14 09:15	WPS	200.7 04KS
Magnesium	220 mg/L	Q4	07/25/14 09:15	WPS	200.7 04KS
Zinc	4.2 mg/L		07/25/14 09:21	WPS	200.7 04KS

Sample No: **4073740-02**
Sample Description: **T4 Startup**

Collect Date: **07/24/14 06:47**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	8500 mg/L		07/24/14 15:30	DAW	SM 2540D 18Ed 04KS

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Attn: Bill Abernathy

Date Received: 07/24/14 11:30
Report Date: 08/01/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073740-02**
Sample Description: **T4 Startup**

Collect Date: **07/24/14 06:47**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - STL					
Solids - total volatile suspended solids	3700 mg/L		07/25/14 10:15	DAW	SM 2540E 18Ed*

Sample No: **4073740-03**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/24/14 06:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - STL					
Acidity	3300 mg/L		07/24/14 14:00	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	5100 mg/L		07/24/14 14:00	ACV	SM 2320B 18Ed*
COD	75000 mg/L		07/25/14 07:43	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	35000 mg/L		07/24/14 13:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	41000 mg/L		07/24/14 15:30	DAW	SM 2540D 18Ed 04KS
Nutrients - STL					
Ammonia-N	590 mg/L		07/25/14 11:00	ACV	SM(18) 4500 NH ₃ F 04KS
Soluble Metals - STL					
Arsenic	1.0 mg/L		07/25/14 09:26	WPS	200.7 04KS
Zinc	7.0 mg/L		07/25/14 09:26	WPS	200.7 04KS
Total Metals - STL					
Arsenic	2.0 mg/L		07/25/14 09:33	WPS	200.7 04KS
Hardness	19000 mg/L		07/25/14 09:17	WPS	SM 2340B
Calcium	6600 mg/L	Q4	07/25/14 09:17	WPS	200.7 04KS
Magnesium	540 mg/L	Q4	07/25/14 09:17	WPS	200.7 04KS
Zinc	23 mg/L		07/25/14 09:33	WPS	200.7 04KS

Sample No: **4073740-03RE1**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/24/14 06:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - STL					



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13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/24/14 11:30
Report Date: 08/01/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073740-03RE1**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/24/14 06:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	6600 mg/L	Xb	07/30/14 14:00	ACV	SM 2310B 18Ed*

Sample No: **4073740-03RE2**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/24/14 06:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Alkalinity - total as CaCO ₃	9600 mg/L	Xb	07/30/14 14:00	ACV	SM 2320B 18Ed*

Sample No: **4073740-03RE3**
Sample Description: **T206 Startup-Long List**

Collect Date: **07/24/14 06:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	-1800 mg/L	Xa	07/31/14 14:00	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	18000 mg/L	X	07/31/14 14:00	ACV	SM 2320B 18Ed*

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13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill AbernathyDate Received: 07/24/14 11:30
Report Date: 08/01/14
Customer #: 277310
PO#: 4468816***Laboratory Results*****General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412358 - 04-No Prep WC								
Blank (B412358-BLK1)			Prepared & Analyzed: 07/24/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412358-BS1)			Prepared & Analyzed: 07/24/14					
Solids - total dissolved solids (TDS)	965	mg/L	1000		96	75.1-119		
Duplicate (B412358-DUP1)			Prepared & Analyzed: 07/24/14					
Solids - total dissolved solids (TDS)	33900	mg/L		34500			2	5
Batch B412378 - 04-No Prep WC								
Blank (B412378-BLK1)			Prepared & Analyzed: 07/24/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412378-BS1)			Prepared & Analyzed: 07/24/14					
Solids - total suspended solids (TSS)	101	mg/L	100.0		101	82.9-110		
Duplicate (B412378-DUP1)			Prepared & Analyzed: 07/24/14					
Solids - total suspended solids (TSS)	8900	mg/L		8920			0.2	5
Duplicate (B412378-DUP2)			Prepared & Analyzed: 07/24/14					
Solids - total suspended solids (TSS)	2660	mg/L		2760			4	5
Batch B412392 - 04-No Prep WC								
Duplicate (B412392-DUP1)			Prepared & Analyzed: 07/24/14					
Acidity	3160	mg/L		3280			4	20
Batch B412393 - 04-No Prep WC								
Calibration Blank (B412393-CCB1)			Prepared & Analyzed: 07/24/14					
Alkalinity - total as CaCO ₃	0.00	mg/L						
Calibration Check (B412393-CCV1)			Prepared & Analyzed: 07/24/14					
Alkalinity - total as CaCO ₃	1000	mg/L	1000		100	90-110		
Duplicate (B412393-DUP1)			Prepared & Analyzed: 07/24/14					
Alkalinity - total as CaCO ₃	5140	mg/L		5100			0.8	20
Batch B412401 - 04-No Prep WC								
Calibration Blank (B412401-CCB1)			Prepared: 07/24/14 Analyzed: 07/25/14					
COD	-5.10	mg/L						
Calibration Check (B412401-CCV1)			Prepared: 07/24/14 Analyzed: 07/25/14					
COD	498	mg/L	500.0		100	95-105		
Duplicate (B412401-DUP1)			Prepared: 07/24/14 Analyzed: 07/25/14					
COD	6960	mg/L		6980			0.3	20

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Bridgeton Landfill
 13570 St Charles Rock Road
 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/24/14 11:30
 Report Date: 08/01/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B412401 - 04-No Prep WC

Duplicate (B412401-DUP2)	Source: 4073740-01	Prepared: 07/24/14 Analyzed: 07/25/14						
COD - soluble	1340	mg/L		1360			1	20

Batch B412437 - 04-No Prep WC

Blank (B412437-BLK1)	Prepared & Analyzed: 07/25/14							
Solids - total volatile suspended solids	< 4.0	mg/L						
Duplicate (B412437-DUP1)	Source: 4073740-01	Prepared & Analyzed: 07/25/14						
Solids - total volatile suspended solids	3780	mg/L		3800			0.5	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B412465 - 04-No Prep WC

Calibration Blank (B412465-CCB1)	Prepared & Analyzed: 07/25/14							
Ammonia-N	0.00	mg/L						
Calibration Blank (B412465-CCB2)	Prepared & Analyzed: 07/25/14							
Ammonia-N	0.00	mg/L						
Calibration Check (B412465-CCV1)	Prepared & Analyzed: 07/25/14							
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Calibration Check (B412465-CCV2)	Prepared & Analyzed: 07/25/14							
Ammonia-N	9.97	mg/L	10.00		100	90-110		
Matrix Spike (B412465-MS1)	Source: 4073548-04	Prepared & Analyzed: 07/25/14						
Ammonia-N	35.0	mg/L	10.00	25.3	97	80-120		
Matrix Spike (B412465-MS2)	Source: 4073548-10	Prepared & Analyzed: 07/25/14						
Ammonia-N	13.0	mg/L	10.00	3.23	98	80-120		
Matrix Spike Dup (B412465-MSD1)	Source: 4073548-04	Prepared & Analyzed: 07/25/14						
Ammonia-N	35.2	mg/L	10.00	25.3	99	80-120	0.6	20
Matrix Spike Dup (B412465-MSD2)	Source: 4073548-10	Prepared & Analyzed: 07/25/14						
Ammonia-N	12.8	mg/L	10.00	3.23	96	80-120	2	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-------	-------------	---------------	------	-------------	-----	-----------

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 Report Date: 08/01/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**Soluble Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412369 - 04-No Prep WC								
Calibration Blank (B412369-CCB1)			Prepared & Analyzed: 07/24/14					
Phosphorus - ortho as P	0.00	mg/L						
Calibration Check (B412369-CCV1)			Prepared & Analyzed: 07/24/14					
Phosphorus - ortho as P	0.514	mg/L	0.5000		103	90-110		
Matrix Spike (B412369-MS1)			Prepared & Analyzed: 07/24/14					
Phosphorus - ortho as P	0.538	mg/L	0.5000	0.0360	100	80-120		
Matrix Spike Dup (B412369-MSD1)			Prepared & Analyzed: 07/24/14					
Phosphorus - ortho as P	0.545	mg/L	0.5000	0.0360	102	80-120	1	20

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412361 - 04 EPA 200.2 R2.8								
Blank (B412361-BLK1)			Prepared: 07/24/14 Analyzed: 07/25/14					
Arsenic	< 0.010	mg/L						
Calcium	Q4 < 0.19	mg/L						
Magnesium	Q4 < 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412361-BS1)			Prepared: 07/24/14 Analyzed: 07/25/14					
Arsenic	0.205	mg/L	0.2000		103	85-115		
Calcium	Q4 0.209	mg/L	0.2000		104	85-115		
Magnesium	Q4 0.226	mg/L	0.2000		113	85-115		
Zinc	0.212	mg/L	0.2000		106	85-115		
Matrix Spike (B412361-MS1)			Prepared: 07/24/14 Analyzed: 07/25/14					
Arsenic	1.10	mg/L	0.5000	0.539	113	70-130		
Calcium	Q4 1250	mg/L	0.5000	1490	NR	70-130		
Magnesium	Q4 172	mg/L	0.5000	223	NR	70-130		
Zinc	4.70	mg/L	0.5000	4.20	100	70-130		
Matrix Spike Dup (B412361-MSD1)			Prepared: 07/24/14 Analyzed: 07/25/14					
Arsenic	1.08	mg/L	0.5000	0.539	109	70-130	2	20
Calcium	Q4 1220	mg/L	0.5000	1490	NR	70-130	2	20
Magnesium	Q4 168	mg/L	0.5000	223	NR	70-130	3	20
Zinc	4.62	mg/L	0.5000	4.20	84	70-130	2	20

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 St. Louis, MO 63044
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 Report Date: 08/01/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**Soluble Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412361 - 04 EPA 200.2 R2.8								
Blank (B412361-BLK1)			Prepared: 07/24/14 Analyzed: 07/25/14					
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412361-BS1)			Prepared: 07/24/14 Analyzed: 07/25/14					
Arsenic	0.205	mg/L	0.2000		103	85-115		
Zinc	0.212	mg/L	0.2000		106	85-115		

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412410 - 04-IC No Prep								
Calibration Blank (B412410-CCB1)			Prepared & Analyzed: 07/24/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.322	mg/L						
Calibration Check (B412410-CCV1)			Prepared & Analyzed: 07/24/14					
Nitrate-N	1.08	mg/L	1.130		96	90-110		
Nitrite-N	2.00	mg/L	2.000		100	90-110		
Matrix Spike (B412410-MS1)			Source: 4073548-08 Prepared & Analyzed: 07/24/14					
Nitrite-N	257	mg/L	250.0	ND	103	80-120		
Nitrate-N	110	mg/L	113.0	ND	96	80-120		
Matrix Spike Dup (B412410-MSD1)			Source: 4073548-08 Prepared & Analyzed: 07/24/14					
Nitrite-N	255	mg/L	250.0	ND	102	80-120	0.9	20
Nitrate-N	110	mg/L	113.0	ND	96	80-120	0.6	20



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Attn: Bill Abernathy

Date Received: 07/24/14 11:30
Report Date: 08/01/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Notes

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PIA PDC Laboratories - Peoria, IL

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry

No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

- Xb Sample was re-analyzed because of questionable results on initial analysis.
Xa An apparent reaction is continuing to take place in this sample based on this series of runs.
X An apparent reaction is continuing to take place in this sample based on this series of runs.
Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488

Fax (314) 432-4977

State where samples collected MC

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1

CLIENT

Buell/Bridgeton LF

PROJECT NUMBER

P.O. NUMBER

MEANS SHIPPED

ADDRESS

PHONE NUMBER

FAX NUMBER

EMAIL ADDRESS

CITY

STATE

ZIP

CONTACT PERSON

SAMPLER

SAMPLER'S SIGNATURE

MATRIX TYPES:
WW-WASTEWATER
DW-DRINKING WATER
GW-GROUND WATER
WWSL-SLUDGE
NAS-SOLID
LCHT-LEACHATE
NAL-NONAQUEOUS
SOIL-SOILS

2

SAMPLE DESCRIPTION
AS YOU WANT ON REPORT

DATE COLLECTED

TIME COLLECTED

SAMPLE TYPE

MATRIX TYPE

Bottle Count

3

ANALYSIS REQUESTED

LOG IN #

LOGGED BY:

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

4

(FOR LAB USE ONLY)

REMARKS

DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	MATRIX TYPE	Bottle Count	LOG IN #	LOGGED BY:	LAB PROJ. #	TEMPLATE:	PROJ. MGR.:	REMARKS
7/24/14	645	✓	LCHT	8	✓	✓				
7/24/14	647	✓	LCHT	1						
7/24/14	636	✓	LCHT	5	✓					

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days) RUSH (5 Bus. Days) Fastrak™ (3 Bus. Days) 1-2 Bus. Days Same Day

DATE DUE 7/25/14

RESULTS BY: E-MAIL FAX PHONE CALL PHONE/FAX# IF DIFFERENT FROM ABOVE

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

7

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

8

COMMENTS:(FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLE(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/25/14 11:14
Report Date: 07/28/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4073930-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/25/14 06:40**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	7.5 mg/L	Q3	07/25/14 12:38	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L	Q3	07/25/14 13:30	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	4600 mg/L		07/25/14 14:37	DAW	SM 5220D 18Ed 04KS
COD - soluble	1500 mg/L		07/25/14 14:37	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	9600 mg/L		07/25/14 12:00	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4300 mg/L		07/25/14 12:00	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	0.61 mg/L		07/25/14 11:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4073930-02**
Sample Description: **T4 Startup**

Collect Date: **07/25/14 06:44**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	9700 mg/L		07/25/14 12:00	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4100 mg/L		07/25/14 12:00	DAS	SM 2540E 18Ed*

Sample No: **4073930-03**
Sample Description: **T205 Startup-Short List**

Collect Date: **07/25/14 07:08**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	48000 mg/L		07/25/14 14:38	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	33000 mg/L		07/25/14 16:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	5500 mg/L		07/25/14 12:00	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	510 mg/L		07/25/14 11:00	ACV	SM(18) 4500 NH3 04KS F

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 Attn: Bill Abernathy

Date Received: 07/25/14 11:14
 Report Date: 07/28/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412440 - 04-No Prep WC								
Blank (B412440-BLK1)			Prepared & Analyzed: 07/25/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412440-BS1)			Prepared & Analyzed: 07/25/14					
Solids - total suspended solids (TSS)	93.0	mg/L	100.0		93	82.9-110		
Duplicate (B412440-DUP1)			Prepared & Analyzed: 07/25/14					
Solids - total suspended solids (TSS)	9360	mg/L		9700			4	5
Batch B412456 - 04-No Prep WC								
Blank (B412456-BLK1)			Prepared & Analyzed: 07/25/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412456-BS1)			Prepared & Analyzed: 07/25/14					
Solids - total dissolved solids (TDS)	1020	mg/L	1000		102	75.1-119		
Duplicate (B412456-DUP1)			Prepared & Analyzed: 07/25/14					
Solids - total dissolved solids (TDS)	33400	mg/L		33200			0.6	5
Batch B412466 - 04-No Prep WC								
Calibration Blank (B412466-CCB1)			Prepared & Analyzed: 07/25/14					
COD	-5.10	mg/L						
Calibration Check (B412466-CCV1)			Prepared & Analyzed: 07/25/14					
COD	500	mg/L	500.0		100	95-105		
Duplicate (B412466-DUP1)			Prepared & Analyzed: 07/25/14					
COD - soluble	1470	mg/L		1460			0.6	20
Duplicate (B412466-DUP2)			Prepared & Analyzed: 07/25/14					
COD	48400	mg/L		48200			0.5	20
Batch B412468 - 04-No Prep WC								
Duplicate (B412468-DUP1)			Prepared & Analyzed: 07/25/14					
Solids - total volatile suspended solids	4120	mg/L		4120			0	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412465 - 04-No Prep WC								
Calibration Blank (B412465-CCB1)			Prepared & Analyzed: 07/25/14					

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 Report Date: 07/28/14
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 PO#: 4468816

Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412465 - 04-No Prep WC								
Calibration Blank (B412465-CCB1)			Prepared & Analyzed: 07/25/14					
Ammonia-N	0.00	mg/L						
Calibration Blank (B412465-CCB2)			Prepared & Analyzed: 07/25/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B412465-CCV1)			Prepared & Analyzed: 07/25/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Calibration Check (B412465-CCV2)			Prepared & Analyzed: 07/25/14					
Ammonia-N	9.97	mg/L	10.00		100	90-110		
Matrix Spike (B412465-MS1)			Prepared & Analyzed: 07/25/14					
Ammonia-N	35.0	mg/L	10.00	25.3	97	80-120		
Matrix Spike (B412465-MS2)			Prepared & Analyzed: 07/25/14					
Ammonia-N	13.0	mg/L	10.00	3.23	98	80-120		
Matrix Spike Dup (B412465-MSD1)			Prepared & Analyzed: 07/25/14					
Ammonia-N	35.2	mg/L	10.00	25.3	99	80-120	0.6	20
Matrix Spike Dup (B412465-MSD2)			Prepared & Analyzed: 07/25/14					
Ammonia-N	12.8	mg/L	10.00	3.23	96	80-120	2	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412464 - 04-IC No Prep								
Calibration Blank (B412464-CCB1)			Prepared & Analyzed: 07/25/14					
Nitrite-N	0.313	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B412464-CCV1)			Prepared & Analyzed: 07/25/14					
Nitrite-N	2.03	mg/L	2.000		101	90-110		
Nitrate-N	1.15	mg/L	1.130		102	90-110		
Matrix Spike (B412464-MS1)			Prepared & Analyzed: 07/25/14					
Nitrate-N	Q1 12	mg/L	11.30	7.5	38	80-120		
Nitrite-N	Q1 < 5.0	mg/L	25.00	ND		80-120		
Matrix Spike Dup (B412464-MSD1)			Prepared & Analyzed: 07/25/14					
Nitrate-N	Q2 9.4	mg/L	11.30	7.5	17	80-120	23	20
Nitrite-N	Q2 < 5.0	mg/L	25.00	ND		80-120		20



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Laboratory Results

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UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Q3 MS/MSD both failed %R

Q2 MSD failed %R

Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

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Fax (314) 432-4977

State where samples collected _____

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1

CLIENT

Barr/Bridgeton LA

PROJECT NUMBER

P.O. NUMBER

MEANS SHIPPED

ADDRESS

PHONE NUMBER

FAX NUMBER

EMAIL ADDRESS

CITY

STATE

ZIP

SAMPLER

SAMPLER'S SIGNATURE

MATRIX TYPES:

WW-WASTEWATER

DW-DRINKING WATER

GW-GROUND WATER

WWSL-SLUDGE

NAS-SOLID

LCHT-LEACHATE

NAL-NONAQUEOUS

SOIL-SOILS

CONTACT PERSON

SAMPLER'S SIGNATURE

2

SAMPLE DESCRIPTION

AS YOU WANT ON REPORT

DATE

TIME

SAMPLE TYPE

MATRIX

Bottle

COLLECTED

COLLECTED

GRAB

COMP

TYPE

Count

3

ANALYSIS REQUESTED

LOG + Ammonia

TSS/VSS + Nitrate/Nitrite

Diss COD (FF)

TSS/VSS

TSS / TDS

4

(FOR LAB USE ONLY)

LOGIN #

4073930

LOGGED BY:

HG

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days)

RUSH (5 Bus. Days)

Fastrak™ (3 Bus. Days)

1-2 Bus. Days

Same Day

DATE DUE

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

6

7

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

DATE

TIME

8

COMMENTS (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLES(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

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Bridgeton Landfill
13570 St Charles Rock Road
St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/28/14 8:57
Report Date: 07/28/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074066-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/26/14 06:30**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	5.6 mg/L		07/26/14 09:39	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/26/14 09:56	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	8000 mg/L		07/26/14 13:00	DAW	SM 5220D 18Ed 04KS
COD - soluble	1500 mg/L		07/26/14 12:59	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	11000 mg/L		07/26/14 10:45	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4600 mg/L		07/28/14 08:10	DAW	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	1.5 mg/L		07/28/14 10:45	DAW	SM(18) 4500 NH3 04KS F

Sample No: **4074066-02**
Sample Description: **T4 Startup**

Collect Date: **07/26/14 06:25**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	10000 mg/L		07/26/14 10:45	DAW	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	4400 mg/L		07/28/14 08:10	DAW	SM 2540E 18Ed*

Sample No: **4074066-03**
Sample Description: **T205 Startup-Short List**

Collect Date: **07/26/14 06:20**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	8700 mg/L		07/26/14 13:00	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	11000 mg/L		07/26/14 12:00	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	7600 mg/L		07/26/14 10:45	DAW	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	4.4 mg/L		07/28/14 10:45	DAW	SM(18) 4500 NH3 04KS F

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 Attn: Bill Abernathy

Date Received: 07/28/14 8:57
 Report Date: 07/28/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412490 - 04-No Prep WC								
Blank (B412490-BLK1)			Prepared & Analyzed: 07/26/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412490-BS1)			Prepared & Analyzed: 07/26/14					
Solids - total suspended solids (TSS)	103	mg/L	100.0	103	82.9-110			
Duplicate (B412490-DUP1)			Prepared & Analyzed: 07/26/14					
Solids - total suspended solids (TSS)	4.00	mg/L		3.60			11	5
Duplicate (B412490-DUP2)			Prepared & Analyzed: 07/26/14					
Solids - total suspended solids (TSS)	10700	mg/L		10600			0.2	5
Batch B412497 - 04-No Prep WC								
Calibration Blank (B412497-CCB1)			Prepared & Analyzed: 07/26/14					
COD	-0.500	mg/L						
Calibration Blank (B412497-CCB2)			Prepared & Analyzed: 07/26/14					
COD	-5.10	mg/L						
Calibration Check (B412497-CCV1)			Prepared & Analyzed: 07/26/14					
COD	103	mg/L	100.0	103	95-105			
Calibration Check (B412497-CCV2)			Prepared & Analyzed: 07/26/14					
COD	482	mg/L	500.0	96	95-105			
Duplicate (B412497-DUP1)			Prepared & Analyzed: 07/26/14					
COD	33.2	mg/L		34.2			3	20
Duplicate (B412497-DUP2)			Prepared & Analyzed: 07/26/14					
COD	2170	mg/L		2190			0.8	20
Duplicate (B412497-DUP3)			Prepared & Analyzed: 07/26/14					
COD - soluble	1540	mg/L		1540			0.3	20
Batch B412530 - 04-No Prep WC								
Blank (B412530-BLK1)			Prepared & Analyzed: 07/26/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412530-BS1)			Prepared & Analyzed: 07/26/14					
Solids - total dissolved solids (TDS)	1010	mg/L	1000	101	75.1-119			
Duplicate (B412530-DUP1)			Prepared & Analyzed: 07/26/14					
Solids - total dissolved solids (TDS)	10800	mg/L		10800			0.7	5
Batch B412539 - 04-No Prep WC								
Blank (B412539-BLK1)			Prepared & Analyzed: 07/28/14					

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Date Received: 07/28/14 8:57
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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412539 - 04-No Prep WC								
Blank (B412539-BLK1)			Prepared & Analyzed: 07/28/14					
Solids - total volatile suspended solids	< 4.0	mg/L						
Duplicate (B412539-DUP1)			Prepared & Analyzed: 07/28/14					
Solids - total volatile suspended solids	4580	mg/L		4560			0.4	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412528 - 04-No Prep WC								
Blank (B412528-BLK1)			Prepared & Analyzed: 07/28/14					
Ammonia-N	< 0.10	mg/L						
LCS (B412528-BS1)			Prepared & Analyzed: 07/28/14					
Ammonia-N	10.3	mg/L	10.00		103	80-120		
Matrix Spike (B412528-MS1)			Prepared & Analyzed: 07/28/14					
Ammonia-N	10.1	mg/L	10.00	0.142	100	80-120		
Matrix Spike Dup (B412528-MSD1)			Prepared & Analyzed: 07/28/14					
Ammonia-N	10.3	mg/L	10.00	0.142	102	80-120	2	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412464 - 04-IC No Prep								
Calibration Blank (B412464-CCB1)			Prepared & Analyzed: 07/25/14					
Nitrite-N	0.313	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B412464-CCV1)			Prepared & Analyzed: 07/25/14					
Nitrite-N	2.03	mg/L	2.000		101	90-110		
Nitrate-N	1.15	mg/L	1.130		102	90-110		
Matrix Spike (B412464-MS1)			Prepared & Analyzed: 07/25/14					
Nitrite-N	Q1 < 5.0	mg/L	25.00	ND		80-120		
Nitrate-N	Q1 12	mg/L	11.30	7.5	38	80-120		
Matrix Spike Dup (B412464-MSD1)			Prepared & Analyzed: 07/25/14					



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Report Date: 07/28/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412464 - 04-IC No Prep								
Matrix Spike Dup (B412464-MSD1)			Source: 4073930-01		Prepared & Analyzed: 07/25/14			
Nitrite-N	Q2	< 5.0	mg/L	25.00	ND	80-120		20
Nitrate-N	Q2	9.4	mg/L	11.30	7.5	17	80-120	23



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Laboratory Results

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Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

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UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Q2 MSD failed %R

Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

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State where samples collected _____

(Instructions/Sample Acceptance Policy on Reverse)

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St. Louis, MO 63044
Attn: Bill Abernathy

Date Received: 07/28/14 11:48
Report Date: 08/04/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074101-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/27/14 07:30**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		07/28/14 13:57	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/28/14 14:15	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	8200 mg/L		07/28/14 15:23	DAW	SM 5220D 18Ed 04KS
COD - soluble	1500 mg/L		07/28/14 15:22	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	13000 mg/L		07/28/14 13:10	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	5700 mg/L		07/28/14 14:30	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	2.9 mg/L		07/28/14 12:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4074101-02**
Sample Description: **T4 Startup**

Collect Date: **07/27/14 07:25**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	12000 mg/L		07/28/14 13:10	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	5500 mg/L	M	07/28/14 14:30	DAS	SM 2540E 18Ed*

Sample No: **4074101-03**
Sample Description: **T205 Startup-Short List**

Collect Date: **07/27/14 07:20**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	7800 mg/L		07/28/14 15:23	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	8000 mg/L		07/28/14 15:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	17000 mg/L		07/28/14 13:10	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	6.1 mg/L		07/28/14 12:00	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/28/14 11:48
 Report Date: 08/04/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412561 - 04-No Prep WC								
Blank (B412561-BLK1)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412561-BS1)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	100	mg/L	100.0		100	82.9-110		
Duplicate (B412561-DUP1)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	1600	mg/L		1560			3	5
Duplicate (B412561-DUP2)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	12500	mg/L		12300			1	5
Batch B412571 - 04-No Prep WC								
Blank (B412571-BLK1)			Prepared & Analyzed: 07/28/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412571-BS1)			Prepared & Analyzed: 07/28/14					
Solids - total dissolved solids (TDS)	1020	mg/L	1000		102	75.1-119		
Duplicate (B412571-DUP1)			Prepared & Analyzed: 07/28/14					
Solids - total dissolved solids (TDS)	9480	mg/L		9200			3	5
Batch B412577 - 04-No Prep WC								
Calibration Blank (B412577-CCB1)			Prepared & Analyzed: 07/28/14					
COD	-0.300	mg/L						
Calibration Blank (B412577-CCB2)			Prepared & Analyzed: 07/28/14					
COD	-5.10	mg/L						
Calibration Check (B412577-CCV1)			Prepared & Analyzed: 07/28/14					
COD	97.6	mg/L	100.0		98	95-105		
Calibration Check (B412577-CCV2)			Prepared & Analyzed: 07/28/14					
COD	502	mg/L	500.0		100	95-105		
Duplicate (B412577-DUP1)			Prepared & Analyzed: 07/28/14					
COD	< 5.0	mg/L		ND				20
Duplicate (B412577-DUP2)			Prepared & Analyzed: 07/28/14					
COD	12900	mg/L		12800			1	20
Duplicate (B412577-DUP3)			Prepared & Analyzed: 07/28/14					
COD - soluble	1450	mg/L		1460			0.3	20
Batch B412583 - 04-No Prep WC								
Duplicate (B412583-DUP1)			Prepared & Analyzed: 07/28/14					
Source: 4074101-02								

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Date Received: 07/28/14 11:48
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 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B412583 - 04-No Prep WC

Duplicate (B412583-DUP1)		Source: 4074101-02		Prepared & Analyzed: 07/28/14				
Solids - total volatile suspended solids	M	6060	mg/L	5500			10	5

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B412586 - 04-No Prep WC

Blank (B412586-BLK1)		Prepared & Analyzed: 07/28/14						
Ammonia-N	< 0.10	mg/L						
LCS (B412586-BS1)		Prepared & Analyzed: 07/28/14						
Ammonia-N	10.1	mg/L	10.00		101	80-120		
Matrix Spike (B412586-MS1)		Prepared & Analyzed: 07/28/14						
Ammonia-N	9.96	mg/L	10.00	ND	100	80-120		
Matrix Spike Dup (B412586-MSD1)		Prepared & Analyzed: 07/28/14						
Ammonia-N	10.0	mg/L	10.00	ND	100	80-120	0.4	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B412576 - 04-IC No Prep

Calibration Blank (B412576-CCB1)		Prepared & Analyzed: 07/28/14						
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B412576-CCV1)		Prepared & Analyzed: 07/28/14						
Nitrate-N	0.187	mg/L				90-110		
Nitrite-N	1.99	mg/L				90-110		
Matrix Spike (B412576-MS1)		Prepared & Analyzed: 07/28/14						
Nitrate-N	57	mg/L	56.48	4.8	92	80-120		
Nitrite-N	Q1 164	mg/L	125.0	ND	131	80-120		
Matrix Spike Dup (B412576-MSD1)		Prepared & Analyzed: 07/28/14						
Nitrate-N	57	mg/L	56.48	4.8	92	80-120	0.3	20
Nitrite-N	Q2 164	mg/L	125.0	ND	131	80-120	0.2	20



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Customer #: 277310
PO#: 4468816

Laboratory Results

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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
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Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
STL PDC Laboratories - St. Louis, MO
TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050
Drinking Water Certifications: Missouri (1050)
Missouri Department of Natural Resources

Q2 MSD failed %R
Q1 MS Failed %R
M Analyte failed to meet the required acceptance criteria for duplicate analysis.

Certified by: Roxann Shull, Client Services Supervisor

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Attn: Bill Abernathy

Date Received: 07/28/14 11:55
Report Date: 08/04/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074105-01**
Sample Description: **T3 Startup-Long List**

Collect Date: **07/28/14 07:18**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		07/28/14 14:32	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L	Q3	07/28/14 14:45	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
Alkalinity - total as CaCO ₃	4700 mg/L		07/29/14 12:00	ACV	SM 2320B 18Ed*
BOD - soluble	10 mg/L		07/28/14 13:30	DAW	SM 5210B 18Ed*
COD	8500 mg/L		07/28/14 15:23	DAW	SM 5220D 18Ed 04KS
COD - soluble	1400 mg/L		07/28/14 15:23	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	8100 mg/L		07/28/14 15:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	14000 mg/L		07/28/14 13:10	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	6200 mg/L		07/28/14 14:30	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	1.0 mg/L		07/28/14 12:00	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.24 mg/L		07/29/14 08:59	WPS	200.7 04KS
Zinc	0.060 mg/L		07/29/14 08:59	WPS	200.7 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	1.4 mg/L		07/28/14 15:00	ACV	SM 4500P B E 18ed*
<u>Total Metals - STL</u>					
Arsenic	0.77 mg/L		07/29/14 09:00	WPS	200.7 04KS
Hardness	6900 mg/L		07/29/14 08:55	WPS	SM 2340B
Calcium	2300 mg/L		07/29/14 08:55	WPS	200.7 04KS
Magnesium	260 mg/L		07/29/14 08:55	WPS	200.7 04KS
Zinc	6.4 mg/L		07/29/14 09:00	WPS	200.7 04KS

Sample No: **4074105-02**
Sample Description: **T4 Startup**

Collect Date: **07/28/14 07:12**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	13000 mg/L		07/28/14 13:10	DAS	SM 2540D 18Ed 04KS



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Attn: Bill Abernathy

Date Received: 07/28/14 11:55
Report Date: 08/04/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074105-02**
Sample Description: **T4 Startup**

Collect Date: **07/28/14 07:12**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total volatile suspended solids	5600 mg/L		07/28/14 14:30	DAS	SM 2540E 18Ed*

Sample No: **4074105-03**
Sample Description: **T205 Startup-Long List**

Collect Date: **07/28/14 07:27**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	-8100 mg/L		07/29/14 12:00	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	12000 mg/L		07/29/14 12:00	ACV	SM 2320B 18Ed*
COD	13000 mg/L		07/28/14 15:23	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	9200 mg/L		07/28/14 15:30	DAW	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	19000 mg/L		07/28/14 13:10	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	20 mg/L		07/28/14 12:00	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.39 mg/L		07/29/14 09:02	WPS	200.7 04KS
Zinc	0.081 mg/L		07/29/14 09:02	WPS	200.7 04KS
<u>Total Metals - STL</u>					
Arsenic	1.0 mg/L		07/29/14 09:04	WPS	200.7 04KS
Hardness	9400 mg/L		07/29/14 08:57	WPS	SM 2340B
Calcium	3300 mg/L		07/29/14 08:57	WPS	200.7 04KS
Magnesium	310 mg/L		07/29/14 08:57	WPS	200.7 04KS
Zinc	10 mg/L	Q4	07/29/14 09:04	WPS	200.7 04KS

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412561 - 04-No Prep WC								
Blank (B412561-BLK1)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412561-BS1)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	100	mg/L	100.0		100	82.9-110		
Duplicate (B412561-DUP1)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	1600	mg/L		1560			3	5
Duplicate (B412561-DUP2)			Prepared & Analyzed: 07/28/14					
Solids - total suspended solids (TSS)	12500	mg/L		12300			1	5
Batch B412571 - 04-No Prep WC								
Blank (B412571-BLK1)			Prepared & Analyzed: 07/28/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412571-BS1)			Prepared & Analyzed: 07/28/14					
Solids - total dissolved solids (TDS)	1020	mg/L	1000		102	75.1-119		
Duplicate (B412571-DUP1)			Prepared & Analyzed: 07/28/14					
Solids - total dissolved solids (TDS)	9480	mg/L		9200			3	5
Batch B412577 - 04-No Prep WC								
Calibration Blank (B412577-CCB1)			Prepared & Analyzed: 07/28/14					
COD	-0.300	mg/L						
Calibration Blank (B412577-CCB2)			Prepared & Analyzed: 07/28/14					
COD	-5.10	mg/L						
Calibration Check (B412577-CCV1)			Prepared & Analyzed: 07/28/14					
COD	97.6	mg/L	100.0		98	95-105		
Calibration Check (B412577-CCV2)			Prepared & Analyzed: 07/28/14					
COD	502	mg/L	500.0		100	95-105		
Duplicate (B412577-DUP1)			Prepared & Analyzed: 07/28/14					
COD	< 5.0	mg/L		ND				20
Duplicate (B412577-DUP2)			Prepared & Analyzed: 07/28/14					
COD	12900	mg/L		12800			1	20
Duplicate (B412577-DUP3)			Prepared & Analyzed: 07/28/14					
COD - soluble	1450	mg/L		1460			0.3	20
Batch B412583 - 04-No Prep WC								
Duplicate (B412583-DUP1)			Prepared & Analyzed: 07/28/14					
Source: 4074101-02								

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B412583 - 04-No Prep WC

Duplicate (B412583-DUP1)		Source: 4074101-02		Prepared & Analyzed: 07/28/14				
Solids - total volatile suspended solids	M	6060	mg/L	5500			10	5

Batch B412666 - 04-No Prep WC

Duplicate (B412666-DUP1)		Source: 4074105-03		Prepared & Analyzed: 07/29/14				
Acidity		-8060	mg/L	ND				20

Batch B412667 - 04-No Prep WC

Calibration Blank (B412667-CCB1)		Prepared & Analyzed: 07/29/14						
Alkalinity - total as CaCO ₃		0.00	mg/L					
Calibration Check (B412667-CCV1)		Prepared & Analyzed: 07/29/14						
Alkalinity - total as CaCO ₃		1000	mg/L	1000	100	90-110		
Duplicate (B412667-DUP1)		Source: 4074105-03		Prepared & Analyzed: 07/29/14				
Alkalinity - total as CaCO ₃		12400	mg/L	12300			0.3	20

Batch B412717 - 04-No Prep WC

Duplicate (B412717-DUP1)		Source: 4074105-01		Prepared & Analyzed: 07/28/14				
BOD - soluble		< 30	mg/L	10.0				20

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B412586 - 04-No Prep WC

Blank (B412586-BLK1)		Prepared & Analyzed: 07/28/14						
Ammonia-N		< 0.10	mg/L					
LCS (B412586-BS1)		Prepared & Analyzed: 07/28/14						
Ammonia-N		10.1	mg/L	10.00	101	80-120		
Matrix Spike (B412586-MS1)		Prepared & Analyzed: 07/28/14						
Ammonia-N		9.96	mg/L	10.00	ND	100	80-120	
Matrix Spike Dup (B412586-MSD1)		Prepared & Analyzed: 07/28/14						
Ammonia-N		10.0	mg/L	10.00	ND	100	80-120	0.4 20

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Laboratory Results**Total Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412566 - 04 EPA 200.2 R2.8								
Blank (B412566-BLK1)			Prepared: 07/28/14 Analyzed: 07/29/14					
Arsenic	< 0.010	mg/L						
Calcium	< 0.19	mg/L						
Magnesium	< 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412566-BS1)			Prepared: 07/28/14 Analyzed: 07/29/14					
Arsenic	0.207	mg/L	0.2000		104	85-115		
Calcium	0.229	mg/L	0.2000		114	85-115		
Magnesium	0.225	mg/L	0.2000		113	85-115		
Zinc	0.215	mg/L	0.2000		108	85-115		
Matrix Spike (B412566-MS1)			Source: 4074105-03		Prepared: 07/28/14 Analyzed: 07/29/14			
Arsenic	1.58	mg/L	0.5000	1.00	115	70-130		
Calcium	Q4 < 0.48	mg/L	0.5000	3260	NR	70-130		
Magnesium	Q4 237	mg/L	0.5000	305	NR	70-130		
Zinc	Q4 10.8	mg/L	0.5000	10.0	164	70-130		
Matrix Spike Dup (B412566-MSD1)			Source: 4074105-03		Prepared: 07/28/14 Analyzed: 07/29/14			
Arsenic	1.58	mg/L	0.5000	1.00	116	70-130	0.1	20
Calcium	Q4 < 0.48	mg/L	0.5000	3260	NR	70-130		20
Magnesium	Q4 235	mg/L	0.5000	305	NR	70-130	0.8	20
Zinc	Q4 10.8	mg/L	0.5000	10.0	160	70-130	0.2	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412566 - 04 EPA 200.2 R2.8								
Blank (B412566-BLK1)			Prepared: 07/28/14 Analyzed: 07/29/14					
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412566-BS1)			Prepared: 07/28/14 Analyzed: 07/29/14					
Arsenic	0.207	mg/L	0.2000		104	85-115		
Zinc	0.215	mg/L	0.2000		108	85-115		

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Laboratory Results

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412576 - 04-IC No Prep								
Calibration Blank (B412576-CCB1)			Prepared & Analyzed: 07/28/14					
Nitrite-N	0.00	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B412576-CCV1)			Prepared & Analyzed: 07/28/14					
Nitrite-N	1.99	mg/L				90-110		
Nitrate-N	0.187	mg/L				90-110		
Matrix Spike (B412576-MS1)			Source: 4074105-01		Prepared & Analyzed: 07/28/14			
Nitrate-N	57	mg/L	56.48	4.8	92	80-120		
Nitrite-N	Q1 164	mg/L	125.0	ND	131	80-120		
Matrix Spike Dup (B412576-MSD1)			Source: 4074105-01		Prepared & Analyzed: 07/28/14			
Nitrite-N	Q2 164	mg/L	125.0	ND	131	80-120	0.2	20
Nitrate-N	57	mg/L	56.48	4.8	92	80-120	0.3	20



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Laboratory Results

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UST Certification; Iowa (240)
SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
STL PDC Laboratories - St. Louis, MO
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Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050
Drinking Water Certifications: Missouri (1050)
Missouri Department of Natural Resources

- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.
Q3 MS/MSD both failed %R
Q2 MSD failed %R
Q1 MS Failed %R
M Analyte failed to meet the required acceptance criteria for duplicate analysis.

Certified by: Roxann Shull, Client Services Supervisor

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Attn: Bill Abernathy

Date Received: 07/29/14 10:58
Report Date: 07/31/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074241-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/29/14 07:08**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	14000 mg/L		07/29/14 16:00	DAS	SM 2540D 18Ed 04KS

Sample No: **4074241-02**
Sample Description: **T4 Startup**

Collect Date: **07/29/14 07:04**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	13000 mg/L		07/29/14 16:00	DAS	SM 2540D 18Ed 04KS

Sample No: **4074241-03**
Sample Description: **T205 Startup-Short List**

Collect Date: **07/29/14 07:13**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	1100 mg/L		07/29/14 16:00	DAS	SM 2540D 18Ed 04KS



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Report Date: 07/31/14
Customer #: 277310
PO#: 4468816

Laboratory Results

General Chemistry - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412672 - 04-No Prep WC								
Blank (B412672-BLK1)			Prepared & Analyzed: 07/29/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412672-BS1)			Prepared & Analyzed: 07/30/14					
Solids - total suspended solids (TSS)	93.0	mg/L	100.0		93	82.9-110		
Duplicate (B412672-DUP1)			Prepared & Analyzed: 07/29/14					
Solids - total suspended solids (TSS)	13000	mg/L		13400			3	5
Duplicate (B412672-DUP2)			Prepared & Analyzed: 07/29/14					
Solids - total suspended solids (TSS)	1580	mg/L		1560			1	5



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Laboratory Results

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UST Certification; Iowa (240)

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No. 171050

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Missouri Department of Natural Resources

Certified by: Roxann Shull, Client Services Supervisor

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Date Received: 07/30/14 10:31
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Laboratory Results

Sample No: **4074370-01**
Sample Description: **T3 Startup-Short List**

Collect Date: **07/30/14 06:54**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	14 mg/L		07/30/14 13:09	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		07/30/14 15:14	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
COD	8000 mg/L		07/31/14 07:41	DAW	SM 5220D 18Ed 04KS
COD - soluble	1400 mg/L		07/31/14 07:41	DAW	SM 5220D 18Ed*
Solids - total suspended solids (TSS)	14000 mg/L		07/30/14 11:45	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	6700 mg/L		07/30/14 15:00	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	1.1 mg/L		07/30/14 12:00	ACV	SM(18) 4500 NH3 04KS F

Sample No: **4074370-02**
Sample Description: **T4 Startup**

Collect Date: **07/30/14 06:51**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	14000 mg/L		07/30/14 11:45	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	6500 mg/L		07/30/14 15:00	DAS	SM 2540E 18Ed*

Sample No: **4074370-03**
Sample Description: **T205 Startup-Short List**

Collect Date: **07/30/14 07:08**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	25000 mg/L		07/31/14 07:41	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	21000 mg/L		07/30/14 15:15	DAS	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	1800 mg/L		07/30/14 11:45	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	270 mg/L		07/30/14 12:00	ACV	SM(18) 4500 NH3 04KS F

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Date Received: 07/30/14 10:31
 Report Date: 08/05/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412714 - 04-No Prep WC								
Blank (B412714-BLK1)			Prepared & Analyzed: 07/30/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412714-BS1)			Prepared & Analyzed: 07/30/14					
Solids - total suspended solids (TSS)	91.0	mg/L	100.0		91	82.9-110		
Duplicate (B412714-DUP1)			Prepared & Analyzed: 07/30/14					
Solids - total suspended solids (TSS)	14200	mg/L		14300			0.7	5
Duplicate (B412714-DUP2)			Prepared & Analyzed: 07/30/14					
Solids - total suspended solids (TSS)	1780	mg/L		1760			1	5
Batch B412731 - 04-No Prep WC								
Blank (B412731-BLK1)			Prepared & Analyzed: 07/30/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412731-BS1)			Prepared & Analyzed: 07/30/14					
Solids - total dissolved solids (TDS)	958	mg/L	1000		96	75.1-119		
Duplicate (B412731-DUP1)			Prepared & Analyzed: 07/30/14					
Solids - total dissolved solids (TDS)	20900	mg/L		21400			2	5
Duplicate (B412731-DUP2)			Prepared & Analyzed: 07/30/14					
Solids - total dissolved solids (TDS)	3160	mg/L		3190			0.9	5
Batch B412760 - 04-No Prep WC								
Duplicate (B412760-DUP1)			Prepared & Analyzed: 07/30/14					
Solids - total volatile suspended solids	6580	mg/L		6660			1	5
Batch B412761 - 04-No Prep WC								
Calibration Blank (B412761-CCB1)			Prepared: 07/30/14 Analyzed: 07/31/14					
COD	-5.10	mg/L						
Calibration Check (B412761-CCV1)			Prepared: 07/30/14 Analyzed: 07/31/14					
COD	511	mg/L	500.0		102	95-105		
Duplicate (B412761-DUP1)			Prepared: 07/30/14 Analyzed: 07/31/14					
COD	24700	mg/L		24800			0.4	20
Duplicate (B412761-DUP2)			Prepared: 07/30/14 Analyzed: 07/31/14					
COD - soluble	1420	mg/L		1400			1	20

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 (314) 432-0550 • (800) 333-FAST • FAX (314) 432-4977



Bridgeton Landfill
 13570 St Charles Rock Road
 St. Louis, MO 63044
 Attn: Bill Abernathy

Date Received: 07/30/14 10:31
 Report Date: 08/05/14
 Customer #: 277310
 PO#: 4468816

Laboratory Results**Nutrients - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412740 - 04-No Prep WC								
Calibration Blank (B412740-CCB1)			Prepared & Analyzed: 07/30/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B412740-CCV1)			Prepared & Analyzed: 07/30/14					
Ammonia-N	10.2	mg/L	10.00		102	90-110		
Matrix Spike (B412740-MS1)			Prepared & Analyzed: 07/30/14					
Ammonia-N	10.4	mg/L	10.00	0.450	100	80-120		
Matrix Spike Dup (B412740-MSD1)			Prepared & Analyzed: 07/30/14					
Ammonia-N	10.3	mg/L	10.00	0.450	98	80-120	1	20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412710 - 04-IC No Prep								
Calibration Blank (B412710-CCB1)			Prepared & Analyzed: 07/30/14					
Nitrite-N	0.271	mg/L						
Nitrate-N	0.00	mg/L						
Calibration Check (B412710-CCV1)			Prepared & Analyzed: 07/30/14					
Nitrate-N	1.21	mg/L	1.130		107	90-110		
Nitrite-N	1.98	mg/L	2.000		99	90-110		
Matrix Spike (B412710-MS1)			Prepared & Analyzed: 07/30/14					
Nitrate-N	600	mg/L	564.8	ND	107	80-120		
Nitrite-N	1280	mg/L	1250	ND	102	80-120		
Matrix Spike Dup (B412710-MSD1)			Prepared & Analyzed: 07/30/14					
Nitrate-N	600	mg/L	564.8	ND	107	80-120	0	20
Nitrite-N	1280	mg/L	1250	ND	102	80-120	0.2	20



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Laboratory Results

Notes

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PIA PDC Laboratories - Peoria, IL

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Iowa (240)

Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry

No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488
Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1

CLIENT

BARR/BRIDGETON LF

PROJECT NUMBER

P.O. NUMBER

MEANS SHIPPED

3

ANALYSIS REQUESTED

COO + AMMONIA

TSS/VSS + NITRATE / NITRITE

DISS COD (FE)

TSS/VSS

TSS/TDS

4

(FOR LAB USE ONLY)

LOGIN #

4074370

LOGGED BY:

HE

LAB PROJ. #

TEMPLATE:

PROJ. MGR.:

2

SAMPLE DESCRIPTION AS YOU WANT ON REPORT

DATE COLLECTED

TIME COLLECTED

SAMPLE TYPE

MATRIX TYPE

Bottle Count

7/30/14

0654

✓

LCAT

3

7/30/14

0651

✓

LCAT

1

7/30/14

0708

✓

LCAT

2

5

TURNAROUND TIME (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)

NORMAL (8-10 Bus. Days)

RUSH (5 Bus. Days)

Fastrak™ (3 Bus. Days)

1-2 Bus. Days

Same Day

DATE DUE

7/31/14

6

The sample temperature will be measured upon receipt at the lab. By initialing this area, you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area, you allow the lab to proceed with analytical testing regardless of the sample temperature.

7

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY:

7-30-14

0935

Heather Carlhart

8

COMMENTS: (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT

CHILL PROCESS STARTED PRIOR TO RECEIPT

SAMPLE(S) RECEIVED ON ICE

PROPER BOTTLES RECEIVED IN GOOD CONDITION

BOTTLES FILLED WITH ADEQUATE VOLUME

SAMPLES RECEIVED WITHIN HOLD TIME(S)

(EXCLUDES TYPICAL FIELD PARAMETERS)

DATE AND TIME TAKEN FROM SAMPLE BOTTLE

Thank you for using PDC Laboratories, Inc. Locations in Peoria, IL; St. Louis, MO; and St. Paul, MN.

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Attn: Bill Abernathy

Date Received: 07/31/14 11:19
Report Date: 08/05/14
Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074567-01**
Sample Description: **T3 Startup-Long List**

Collect Date: **07/31/14 05:39**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Anions - STL</u>					
Nitrate-N	< 5.0 mg/L		08/01/14 14:03	DWM	EPA 300.0 R2.1 04KS
Nitrite-N	< 25 mg/L		08/01/14 14:20	DWM	EPA 300.0 R2.1 04KS
<u>General Chemistry - STL</u>					
Alkalinity - total as CaCO ₃	21000 mg/L		07/31/14 10:30	ACV	SM 2320B 18Ed*
BOD - soluble	25 mg/L		07/31/14 13:00	DAS	SM 5210B 18Ed*
COD	8800 mg/L		07/31/14 15:06	DAW	SM 5220D 18Ed 04KS
COD - soluble	1500 mg/L		07/31/14 15:05	DAW	SM 5220D 18Ed*
Solids - total dissolved solids (TDS)	8100 mg/L		07/31/14 15:00	DAS	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	15000 mg/L		07/31/14 13:00	DAS	SM 2540D 18Ed 04KS
Solids - total volatile suspended solids	6500 mg/L		07/31/14 13:00	DAS	SM 2540E 18Ed*
<u>Nutrients - STL</u>					
Ammonia-N	1.5 mg/L		08/01/14 12:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.15 mg/L		08/01/14 09:17	WPS	200.7 04KS
Zinc	0.070 mg/L		08/01/14 09:17	WPS	200.7 04KS
<u>Soluble Nutrients - STL</u>					
Phosphorus - ortho as P	0.98 mg/L		07/31/14 16:00	ACV	SM 4500P B E 18ed*
<u>Total Metals - STL</u>					
Arsenic	0.77 mg/L		08/01/14 09:19	WPS	200.7 04KS
Hardness	6900 mg/L		08/01/14 09:13	WPS	SM 2340B
Calcium	2300 mg/L	Q4	08/01/14 09:13	WPS	200.7 04KS
Magnesium	290 mg/L	Q4	08/01/14 09:13	WPS	200.7 04KS
Zinc	6.1 mg/L		08/01/14 09:19	WPS	200.7 04KS

Sample No: **4074567-02**
Sample Description: **T4 Startup**

Collect Date: **07/31/14 05:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total suspended solids (TSS)	14000 mg/L		07/31/14 13:00	DAS	SM 2540D 18Ed 04KS



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Customer #: 277310
PO#: 4468816

Laboratory Results

Sample No: **4074567-02**
Sample Description: **T4 Startup**

Collect Date: **07/31/14 05:36**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Solids - total volatile suspended solids	6200 mg/L		07/31/14 13:00	DAS	SM 2540E 18Ed*

Sample No: **4074567-03**
Sample Description: **T205 Startup-Long List**

Collect Date: **07/31/14 05:52**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
Acidity	-4700 mg/L		07/31/14 10:30	ACV	SM 2310B 18Ed*
Alkalinity - total as CaCO ₃	5100 mg/L		07/31/14 10:30	ACV	SM 2320B 18Ed*
COD	7500 mg/L		07/31/14 15:06	DAW	SM 5220D 18Ed 04KS
Solids - total dissolved solids (TDS)	8100 mg/L		07/31/14 15:00	DAS	SM 2540C 18Ed*
Solids - total suspended solids (TSS)	10000 mg/L		07/31/14 13:00	DAS	SM 2540D 18Ed 04KS
<u>Nutrients - STL</u>					
Ammonia-N	7.2 mg/L		08/01/14 12:30	ACV	SM(18) 4500 NH ₃ F 04KS
<u>Soluble Metals - STL</u>					
Arsenic	0.20 mg/L		08/01/14 09:24	WPS	200.7 04KS
Zinc	< 0.050 mg/L		08/01/14 09:24	WPS	200.7 04KS
<u>Total Metals - STL</u>					
Arsenic	0.64 mg/L		08/01/14 09:31	WPS	200.7 04KS
Hardness	5500 mg/L		08/01/14 09:15	WPS	SM 2340B
Calcium	1800 mg/L	Q4	08/01/14 09:15	WPS	200.7 04KS
Magnesium	260 mg/L	Q4	08/01/14 09:15	WPS	200.7 04KS
Zinc	4.6 mg/L		08/01/14 09:31	WPS	200.7 04KS

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412819 - 04-No Prep WC								
Blank (B412819-BLK1)			Prepared & Analyzed: 07/31/14					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B412819-BS1)			Prepared & Analyzed: 07/31/14					
Solids - total suspended solids (TSS)	95.0	mg/L	100.0		95	82.9-110		
Duplicate (B412819-DUP1)			Prepared & Analyzed: 07/31/14					
Solids - total suspended solids (TSS)	14600	mg/L		14500			0.7	5
Batch B412833 - 04-No Prep WC								
Blank (B412833-BLK1)			Prepared & Analyzed: 07/31/14					
Solids - total dissolved solids (TDS)	< 17	mg/L						
LCS (B412833-BS1)			Prepared & Analyzed: 07/31/14					
Solids - total dissolved solids (TDS)	954	mg/L	1000		95	75.1-119		
Duplicate (B412833-DUP1)			Prepared & Analyzed: 07/31/14					
Solids - total dissolved solids (TDS)	8320	mg/L		8060			3	5
Batch B412840 - 04-No Prep WC								
Calibration Blank (B412840-CCB1)			Prepared & Analyzed: 07/31/14					
COD	-0.300	mg/L						
Calibration Blank (B412840-CCB2)			Prepared & Analyzed: 07/31/14					
COD	-5.10	mg/L						
Calibration Check (B412840-CCV1)			Prepared & Analyzed: 07/31/14					
COD	99.7	mg/L	100.0		100	95-105		
Calibration Check (B412840-CCV2)			Prepared & Analyzed: 07/31/14					
COD	489	mg/L	500.0		98	95-105		
Duplicate (B412840-DUP1)			Prepared & Analyzed: 07/31/14					
COD	20.4	mg/L		19.6			4	20
Duplicate (B412840-DUP2)			Prepared & Analyzed: 07/31/14					
COD	7500	mg/L		7500			0	20
Duplicate (B412840-DUP3)			Prepared & Analyzed: 07/31/14					
COD - soluble	1470	mg/L		1470			0.3	20
Batch B412889 - 04-No Prep WC								
Duplicate (B412889-DUP1)			Prepared & Analyzed: 07/31/14					
Solids - total volatile suspended solids	6140	mg/L		6160			0.3	5

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Laboratory Results**General Chemistry - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412980 - 04-No Prep WC								
Blank (B412980-BLK1)			Prepared & Analyzed: 07/31/14					
Alkalinity - total as CaCO ₃	< 20	mg/L						
LCS (B412980-BS1)			Prepared & Analyzed: 07/31/14					
Alkalinity - total as CaCO ₃	996	mg/L	1000		100	90-110		
Duplicate (B412980-DUP1)			Prepared & Analyzed: 07/31/14					
Alkalinity - total as CaCO ₃	21400	mg/L		21300			0.5	20

Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412921 - 04-No Prep WC								
Calibration Blank (B412921-CCB1)			Prepared & Analyzed: 08/01/14					
Ammonia-N	0.00	mg/L						
Calibration Check (B412921-CCV1)			Prepared & Analyzed: 08/01/14					
Ammonia-N	10.1	mg/L	10.00		101	90-110		
Matrix Spike (B412921-MS1)			Prepared & Analyzed: 08/01/14					
Ammonia-N	26.2	mg/L	10.00	16.8	94	80-120		
Matrix Spike Dup (B412921-MSD1)			Prepared & Analyzed: 08/01/14					
Ammonia-N	26.4	mg/L	10.00	16.8	96	80-120	0.8	20

Soluble Nutrients - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412897 - 04-No Prep WC								
Blank (B412897-BLK1)			Prepared & Analyzed: 07/31/14					
Phosphorus - ortho as P	< 0.050	mg/L						
LCS (B412897-BS1)			Prepared & Analyzed: 07/31/14					
Phosphorus - ortho as P	0.504	mg/L	0.5000		101	80-120		
Matrix Spike (B412897-MS1)			Prepared & Analyzed: 07/31/14					
Phosphorus - ortho as P	Q1 1.59	mg/L	0.5000	0.980	122	80-120		
Matrix Spike Dup (B412897-MSD1)			Prepared & Analyzed: 07/31/14					
Phosphorus - ortho as P	1.49	mg/L	0.5000	0.980	102	80-120	6	20

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Laboratory Results**Total Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412812 - 04 EPA 200.2 R2.8								
Blank (B412812-BLK1)			Prepared: 07/31/14 Analyzed: 08/01/14					
Arsenic	< 0.010	mg/L						
Calcium	< 0.19	mg/L						
Magnesium	< 0.10	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412812-BS1)			Prepared: 07/31/14 Analyzed: 08/01/14					
Arsenic	0.219	mg/L	0.2000		109	85-115		
Calcium	0.224	mg/L	0.2000		112	85-115		
Magnesium	0.230	mg/L	0.2000		115	85-115		
Zinc	0.217	mg/L	0.2000		108	85-115		
Matrix Spike (B412812-MS1)			Source: 4074567-01		Prepared: 07/31/14 Analyzed: 08/01/14			
Arsenic	1.36	mg/L	0.5000	0.768	119	70-130		
Calcium	Q4 1870	mg/L	0.5000	2310	NR	70-130		
Magnesium	Q4 229	mg/L	0.5000	285	NR	70-130		
Zinc	6.75	mg/L	0.5000	6.10	130	70-130		
Matrix Spike Dup (B412812-MSD1)			Source: 4074567-01		Prepared: 07/31/14 Analyzed: 08/01/14			
Arsenic	1.36	mg/L	0.5000	0.768	119	70-130	0.2	20
Calcium	Q4 1860	mg/L	0.5000	2310	NR	70-130	0.6	20
Magnesium	Q4 227	mg/L	0.5000	285	NR	70-130	0.9	20
Zinc	6.68	mg/L	0.5000	6.10	117	70-130	1	20

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412812 - 04 EPA 200.2 R2.8								
Blank (B412812-BLK1)			Prepared: 07/31/14 Analyzed: 08/01/14					
Arsenic	< 0.010	mg/L						
Zinc	< 0.020	mg/L						
LCS (B412812-BS1)			Prepared: 07/31/14 Analyzed: 08/01/14					
Arsenic	0.219	mg/L	0.2000		109	85-115		
Zinc	0.217	mg/L	0.2000		108	85-115		
Matrix Spike (B412812-MS1)			Source: 4074567-01		Prepared: 07/31/14 Analyzed: 08/01/14			
Arsenic	< 0.025	mg/L	0.5000	0.147	NR	70-130		
Zinc	< 0.050	mg/L	0.5000	0.0703	NR	70-130		
Matrix Spike Dup (B412812-MSD1)			Source: 4074567-01		Prepared: 07/31/14 Analyzed: 08/01/14			
Arsenic	< 0.025	mg/L	0.5000	0.147	NR	70-130		20



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Laboratory Results

Soluble Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412812 - 04 EPA 200.2 R2.8								
Matrix Spike Dup (B412812-MSD1)			Source: 4074567-01		Prepared: 07/31/14 Analyzed: 08/01/14			
Zinc	< 0.050	mg/L	0.5000	0.0703	NR	70-130		20

Anions - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B412937 - 04-IC No Prep								
Calibration Blank (B412937-CCB1)			Prepared & Analyzed: 08/01/14					
Nitrate-N	0.00	mg/L						
Nitrite-N	0.00	mg/L						
Calibration Check (B412937-CCV1)			Prepared & Analyzed: 08/01/14					
Nitrite-N	1.93	mg/L				90-110		
Nitrate-N	1.19	mg/L				90-110		
Matrix Spike (B412937-MS1)			Prepared & Analyzed: 08/01/14					
Nitrite-N	249	mg/L	250.0	ND	99	80-120		
Nitrate-N	120	mg/L	113.0	ND	105	80-120		
Matrix Spike Dup (B412937-MSD1)			Prepared & Analyzed: 08/01/14					
Nitrite-N	253	mg/L	250.0	ND	101	80-120	2	20
Nitrate-N	120	mg/L	113.0	ND	106	80-120	0.9	20



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Laboratory Results

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Hazardous/Solid Waste Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)

UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050

Drinking Water Certifications: Missouri (1050)

Missouri Department of Natural Resources

Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Q1 MS Failed %R

Certified by: Roxann Shull, Client Services Supervisor

CHAIN OF CUSTODY RECORD

Phone (314) 432-0550 or (314) 921-4488
Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

[illegible]