



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: Bryan Sehie

Date Received: 12/18/13 9:15
Report Date: 12/20/13
Customer #: 277310

Laboratory Results

Sample No: **3122312-01**
Sample Description: **96-SW01**

Collect Date: **12/18/13 07:00**
Matrix: **Waste Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	3400 mg/L		12/18/13 10:15	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	260 mg/L		12/18/13 09:45	DAW	SM 2540D 18Ed 04KS
<u>Total Metals - STL</u>					
Aluminum	4.0 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4*
Mercury	< 0.0004 mg/L		12/19/13 12:07	WPS	EPA 245.1 R3.0 / SW 7470A 04KS
Antimony	0.030 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Arsenic	0.065 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Beryllium	< 0.0020 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Cadmium	0.0046 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Chromium	0.035 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Copper	0.020 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Iron	68 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Lead	0.029 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Nickel	0.034 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Selenium	< 0.020 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Silver	< 0.0040 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Thallium	< 0.040 mg/L		12/20/13 10:55	WPS	EPA 200.7 R4.4 04KS
Zinc	2.4 mg/L		12/20/13 10:55	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 B321483 - 04-No Prep WC								
Blank (B321483-BLK1)			Prepared & Analyzed: 12/18/13					
COD	< 5.0	mg/L						
Blank (B321483-BLK2)			Prepared & Analyzed: 12/18/13					
COD	< 100	mg/L						
LCS (B321483-BS1)			Prepared & Analyzed: 12/18/13					
COD	97.5	mg/L	100.0		98	95-105		
LCS (B321483-BS2)			Prepared & Analyzed: 12/18/13					
COD	477	mg/L	500.0		95	95-105		
Duplicate (B321483-DUP1)			Prepared & Analyzed: 12/18/13					
COD	4.60	mg/L		4.60			0	20
Duplicate (B321483-DUP2)			Prepared & Analyzed: 12/18/13					
COD	1390	mg/L		1380			0.7	20

Batch B321499 - 04-No Prep WC

Blank (B321499-BLK1)			Prepared & Analyzed: 12/18/13					
Solids - total suspended solids (TSS)	< 2.0	mg/L						
LCS (B321499-BS1)			Prepared & Analyzed: 12/18/13					
Solids - total suspended solids (TSS)	100	mg/L	100.0		100	82.9-110		
Duplicate (B321499-DUP1)			Prepared & Analyzed: 12/18/13					
Solids - total suspended solids (TSS)	1.20	mg/L		1.20			0	5

Total Metals - Quality Control

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B321559 - 04 EPA 200.2 R2.8								
Blank (B321559-BLK1)			Prepared: 12/19/13 Analyzed: 12/20/13					
Aluminum	< 0.015	mg/L						
Antimony	< 0.010	mg/L						
Arsenic	< 0.015	mg/L						
Beryllium	< 0.0010	mg/L						
Cadmium	< 0.0020	mg/L						
Chromium	< 0.0020	mg/L						
Copper	< 0.0020	mg/L						
Iron	< 0.010	mg/L						
Lead	< 0.010	mg/L						

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Laboratory Results**Total Metals - Quality Control**

Analyte	Result	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B321559 - 04 EPA 200.2 R2.8								
Blank (B321559-BLK1)			Prepared: 12/19/13 Analyzed: 12/20/13					
Nickel	< 0.0020	mg/L						
Selenium	< 0.010	mg/L						
Silver	< 0.0020	mg/L						
Thallium	< 0.020	mg/L						
Zinc	< 0.010	mg/L						
LCS (B321559-BS1)			Prepared: 12/19/13 Analyzed: 12/20/13					
Aluminum	0.111	mg/L	0.1000		111	85-115		
Antimony	0.0997	mg/L	0.1000		100	85-115		
Arsenic	0.106	mg/L	0.1000		106	85-115		
Beryllium	0.114	mg/L	0.1000		114	85-115		
Cadmium	0.102	mg/L	0.1000		102	85-115		
Chromium	0.0999	mg/L	0.1000		100	85-115		
Copper	0.101	mg/L	0.1000		101	85-115		
Iron	0.107	mg/L	0.1000		107	85-115		
Lead	0.0996	mg/L	0.1000		100	85-115		
Nickel	0.0992	mg/L	0.1000		99	85-115		
Selenium	0.0960	mg/L	0.1000		96	85-115		
Silver	0.0275	mg/L	0.02500		110	85-115		
Thallium	0.0986	mg/L	0.1000		99	85-115		
Zinc	0.103	mg/L	0.1000		103	85-115		
Matrix Spike (B321559-MS1)			Source: 3121825-01		Prepared: 12/19/13 Analyzed: 12/20/13			
Aluminum	0.237	mg/L	0.1000	0.139	97	70-130		
Antimony	0.105	mg/L	0.1000	0.0123	93	70-130		
Arsenic	0.111	mg/L	0.1000	ND	111	70-130		
Beryllium	0.122	mg/L	0.1000	ND	122	70-130		
Cadmium	0.107	mg/L	0.1000	ND	107	70-130		
Chromium	0.106	mg/L	0.1000	0.00107	105	70-130		
Copper	0.108	mg/L	0.1000	0.00886	99	70-130		
Iron	0.417	mg/L	0.1000	0.333	84	70-130		
Lead	0.0985	mg/L	0.1000	ND	98	70-130		
Nickel	0.101	mg/L	0.1000	0.00132	100	70-130		
Selenium	0.0905	mg/L	0.1000	ND	91	70-130		
Silver	0.0281	mg/L	0.02500	0.00102	108	70-130		
Thallium	0.0880	mg/L	0.1000	ND	88	70-130		
Zinc	0.291	mg/L	0.1000	0.179	113	70-130		
Matrix Spike Dup (B321559-MSD1)			Source: 3121825-01		Prepared: 12/19/13 Analyzed: 12/20/13			
Aluminum	0.240	mg/L	0.1000	0.139	100	70-130	1	20
Antimony	0.110	mg/L	0.1000	0.0123	97	70-130	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 B321559 - 04 EPA 200.2 R2.8								
Matrix Spike Dup (B321559-MSD1)	Source: 3121825-01		Prepared: 12/19/13 Analyzed: 12/20/13					
Arsenic	0.107	mg/L	0.1000	ND	107	70-130	4	20
Beryllium	0.126	mg/L	0.1000	ND	126	70-130	3	20
Cadmium	0.108	mg/L	0.1000	ND	108	70-130	0.7	20
Chromium	0.106	mg/L	0.1000	0.00107	105	70-130	0.5	20
Copper	0.109	mg/L	0.1000	0.00886	100	70-130	0.6	20
Iron	0.407	mg/L	0.1000	0.333	75	70-130	2	20
Lead	0.0988	mg/L	0.1000	ND	99	70-130	0.4	20
Nickel	0.102	mg/L	0.1000	0.00132	101	70-130	1	20
Selenium	0.0995	mg/L	0.1000	ND	100	70-130	9	20
Silver	0.0285	mg/L	0.02500	0.00102	110	70-130	1	20
Thallium	0.0921	mg/L	0.1000	ND	92	70-130	5	20
Zinc	0.292	mg/L	0.1000	0.179	113	70-130	0.3	20

Batch B321573 - 04-SW 7470A/245.1

Blank (B321573-BLK1)			Prepared & Analyzed: 12/19/13						
Mercury	< 0.0002	mg/L							
Blank (B321573-BLK2)			Prepared & Analyzed: 12/19/13						
Mercury	< 0.0002	mg/L							
LCS (B321573-BS1)			Prepared & Analyzed: 12/19/13						
Mercury	0.00208	mg/L	0.002000	104	85-115				
Matrix Spike (B321573-MS1)			Source: 3122006-01		Prepared & Analyzed: 12/19/13				
Mercury	0.00201	mg/L	0.002000	ND	100	70-130			
Matrix Spike (B321573-MS2)			Source: 3122467-01		Prepared & Analyzed: 12/19/13				
Mercury	0.00200	mg/L	0.002000	ND	100	70-130			
Matrix Spike Dup (B321573-MSD1)			Source: 3122006-01		Prepared & Analyzed: 12/19/13				
Mercury	0.00221	mg/L	0.002000	ND	110	70-130	9	20	
Matrix Spike Dup (B321573-MSD2)			Source: 3122467-01		Prepared & Analyzed: 12/19/13				
Mercury	0.00203	mg/L	0.002000	ND	102	70-130	1	20	



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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); Indiana (C-IL-040); 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

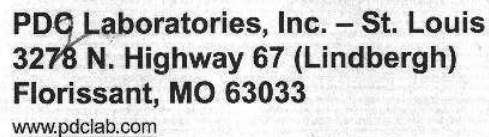
EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing

Drinking Water Certifications: Kansas (E-10389)

Certified by: Roxann Shull, Client Services Supervisor



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Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

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

Roxann Shull

From: Ed Galbraith <EGalbraith@barr.com>
Sent: Wednesday, December 18, 2013 2:00 PM
To: Roxann Shull
Cc: PDC Lab Messenger; Bill Abernathy
Subject: Re: Notification from PDC Laboratories, Inc. for Bridgeton Landfill - Bridgeton Landfill 1 - 3122312

Yes ASAP. All that you listed plus aluminum.

Ed Galbraith
Barr Engineering
EGalbraith@barr.com
573-418-5562

Sent from my iPhone

On Dec 18, 2013, at 1:56 PM, "Roxann Shull" <rshull@pdclab.com> wrote:

> Sure - we should have plenty of sample - I have metals in my project
> listed for:
> Ag, As, Be, Cd, Cr, Cu, Fe, Hg, Ni, Pb, Sb, Se, Tl, Zn - do you want
> all or do you have a specific list of metals needed, and I take you
> need ASAP?
> Thanks Roxann

> -----Original Message-----

> From: Ed Galbraith [<mailto:EGalbraith@barr.com>]
> Sent: Wednesday, December 18, 2013 1:53 PM
> To: PDC Lab Messenger
> Cc: Roxann Shull; Bill Abernathy
> Subject: Re: Notification from PDC Laboratories, Inc. for Bridgeton
> Landfill - Bridgeton Landfill 1 - 3122312

> Roxann Do you have enough sample remaining to run a metals scan?

> Ed Galbraith
> Barr Engineering
> EGalbraith@barr.com
> 573-418-5562

> Sent from my iPhone

> On Dec 18, 2013, at 12:31 PM, "pdcmessenger@pdclab.com"
> <pdcmessenger@pdclab.com> wrote:

>> Please do not reply to this email. If you have any question, email
> Roxann Shull at rshull@pdclab.com.

>> This communication including any attachments is for the exclusive and
> confidential use of the designated recipient and any other



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Attn: Bill Abernathy

Date Received: 12/23/13 9:12
Report Date: 12/24/13
Customer #: 277310

Laboratory Results

Sample No: **3122919-01**
Sample Description: **96-SW026**

Collect Date: **12/22/13 10:14**
Matrix: **Storm Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - STL</u>					
COD	700 mg/L		12/23/13 11:30	DAW	SM 5220D 18Ed 04KS
Solids - total suspended solids (TSS)	140 mg/L		12/23/13 09:40	DAW	SM 2540D 18Ed 04KS
<u>Total Metals - STL</u>					
Aluminum	3.3 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4*
Mercury	0.0004 mg/L		12/24/13 14:26	KAE	EPA 245.1 R3.0 / 04KS SW 7470A
Antimony	< 0.40 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Arsenic	< 0.60 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Beryllium	< 0.040 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Cadmium	< 0.080 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Chromium	< 0.080 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Copper	< 0.080 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Iron	14 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Lead	< 0.40 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Nickel	< 0.080 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Selenium	< 0.40 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Silver	< 0.080 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Thallium	< 0.80 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS
Zinc	< 0.40 mg/L		12/23/13 18:16	WPS	EPA 200.7 R4.4 04KS



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UST Certification; Iowa (240)

SPM PDC Laboratories - Springfield, MO

EPA DMR-QA Program

STL PDC Laboratories - St. Louis, MO

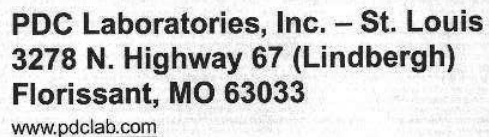
TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389

JER PDC Laboratories - Jerseyville, IL

Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17521
Drinking Water Certifications: Missouri (430)

* Not a TNI accredited analyte

Certified by: Roxann Shull, Client Services Supervisor



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Fax (314) 432-4977

State where samples collected MO

(Instructions/Sample Acceptance Policy on Reverse)

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