



December 20, 2017

City of New Buffalo- New Buffalo, MI  
224 W. Buffalo  
New Buffalo, MI 49117

Work Order No.: 17L1020

Re: CR6

Dear Ken Anderson:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 12/18/2017 12:20:00PM for the analyses presented in the following report as Work Order 17L1020.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Donna Ruokonen, Managing Director, at [donna.ruokonen@microbac.com](mailto:donna.ruokonen@microbac.com).

Sincerely,  
Microbac Laboratories, Inc.

A handwritten signature in black ink that reads "Carey Gadzala". The signature is written in a cursive, flowing style.

Carey Gadzala  
Project Manager

[Microbac Laboratories, Inc.](http://www.microbac.com)

250 West 84<sup>th</sup> Drive | Merrillville, IN 46410 | 800.536.8379 p | 219.769.8378 p | 219.769.1664 f | [www.microbac.com](http://www.microbac.com)



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**WORK ORDER SAMPLE SUMMARY****Date:** *Wednesday, December 20, 2017*

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**Client:** City of New Buffalo- New Buffalo, MI  
**Project:** CR6  
**Lab Order:** 17L1020

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Collection Date</b>	<b>Date Received</b>
17L1020-01	Chromium6-Dec-18-17-1		12/18/2017 09:30	12/18/2017 12:20:00PM
17L1020-02	Chromium6-Dec-18-17-2		12/18/2017 12:15	12/18/2017 12:20:00PM

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**CASE NARRATIVE****Date:** *Wednesday, December 20, 2017*

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**Client:** City of New Buffalo- New Buffalo, MI  
**Project:** CR6  
**Lab Order:** 17L1020

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The Matrix Spike and Matrix Spike Duplicate performed on the following sample failed the accuracy criteria for chromium +6 with a high bias. The precision criteria were met. This is considered insignificant, as the concentration in the sample was below the reporting limit. This failure affects the following sample:

<u>Laboratory ID</u>	<u>Sample Name</u>
17L1020-01	Chromium6-Dec-18-17-1

## Analytical Results

Date: Wednesday, December 20, 2017

<b>Client:</b>	City of New Buffalo- New Buffalo, MI	<b>Work Order/ID:</b>	17L1020-01
<b>Client Project:</b>	CR6	<b>Sampled:</b>	12/18/2017 9:30
<b>Client Sample ID:</b>	Chromium6-Dec-18-17-1	<b>Received:</b>	12/18/2017 12:20
<b>Sample Description:</b>			
<b>Matrix:</b>	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 7196A		Analyst: GRIEFF			
<b>Hexavalent Chromium</b>			Prep Date/Time: 12/18/2017 12:28					
Chromium, Hexavalent	dio	A	ND	0.010		mg/L	1	12/18/2017 12:35

## Analytical Results

Date: Wednesday, December 20, 2017

<b>Client:</b>	City of New Buffalo- New Buffalo, MI	<b>Work Order/ID:</b>	17L1020-02
<b>Client Project:</b>	CR6	<b>Sampled:</b>	12/18/2017 12:15
<b>Client Sample ID:</b>	Chromium6-Dec-18-17-2	<b>Received:</b>	12/18/2017 12:20
<b>Sample Description:</b>			
<b>Matrix:</b>	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 7196A			Analyst: GRIEFF		
<b>Hexavalent Chromium</b>			Prep Date/Time: 12/18/2017 12:28					
Chromium, Hexavalent	dio	A	ND	0.010		mg/L	1	12/18/2017 12:36

**FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)**

B = Detected in the associated method Blank at a concentration above the routine RL  
b- = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL  
b\* = Detected in the associated method Blank at a concentration greater than half the RL  
CFU = Colony forming units  
D = Dilution performed on sample  
DF = Dilution Factor  
g = Gram  
E = Value above quantitation range  
H = Analyte was prepared and/or analyzed outside of the analytical method holding time  
I = Matrix Interference  
J = Analyte concentration detected between RL and MDL (Metals / Organics)  
LOD = Limit of Detection  
LOQ = Limit of Quantitation  
m<sup>3</sup> = Meters cubed  
MDL = Method Detection Limit  
mg/Kg = Milligrams per Kilogram (ppm)  
mg/L = Milligrams per Liter (ppm)  
NA = Not Analyzed  
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)  
NR = Not Recovered  
R = RPD outside accepted recovery limits  
RL = Reporting Limit  
S = Spike recovery outside recovery limits  
Surr = Surrogate  
U = Undetected  
> = Greater than  
< = Less than  
% = Percent  
\* = Result exceeds project specific limits

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**ANALYTE TYPES: (AT)**

A,B = Target Analyte  
I = Internal Standard  
M = Summation Analyte  
S = Surrogate  
T = Tentatively Identified Compound (TIC, concentration estimated)

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**QC SAMPLE IDENTIFICATIONS**

BLK = Method Blank	ICSA = Interference Check Standard "A"
DUP = Method Duplicate	ICSAB = Interference Check Standard "AB"
BS = Method Blank Spike	BSD = Method Blank Spike Duplicate
MS = Matrix Spike	MSD = Matrix Spike Duplicate
ICB = Initial Calibration Blank	ICV = Initial Calibration Verification
CCB = Continuing Calibration Blank	CCV = Continuing Calibration Verification
CRL = Client Required Reporting Limit	OPR = Ongoing Precision and Recovery Standard
PDS = Post Digestion Spike	SD = Serial Dilution
QCS = Quality Control Standard	

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**CERTIFICATIONS (Certs)**

*Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.*

- <sup>d</sup> Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
- <sup>i</sup> Kansas Dept Health & Env. NELAP (#E-10397)
- <sup>o</sup> Virginia Department of General Services Division of Consolidated Laboratory Services (#7990)



**COOLER INSPECTION**

**Date:** Wednesday, December 20, 2017  
**Client Name:** City of New Buffalo- New Buffalo, MI **Date/Time Received:** 12/18/2017 12:20  
**Work Order Number:** 17L1020 **Received by:** Samantha Paulus  
**Checklist completed by:** 12/18/2017 12:14:00PM | Samantha Paulus **Reviewed by:** 12/20/2017 | CAG

Carrier Name: Microbac

Cooler ID: Default Cooler

Container/Temp Blank Temperature: 13.0° C

After-Hour Arrival?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>		
Shipping container/cooler in good condition?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Not Present	<input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Not Present	<input type="checkbox"/>
Custody seals intact on sample containers?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Not Present	<input checked="" type="checkbox"/>
COC present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC included sufficient client identification?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC included sufficient sample collector information?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC included a sample description?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC agrees with sample labels?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC identified the appropriate matrix?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC included date of collection?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC included time of collection?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
COC identified the appropriate number of containers?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Samples in proper container/bottle?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Sample containers intact?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
All samples received within holding time?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
If the samples are preserved, are the preservatives identified?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		

If No, adjusted by? \_\_\_\_\_

COC included the requested analyses?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC signed when relinquished and received?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Samples received on ice?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Samples properly preserved?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Voa vials for aqueous samples have zero headspace?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>

Cooler Comments: \_\_\_\_\_

**ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.**

Sample ID	Client Sample ID	Comments
17L1020-01	Chromium6-Dec-18-17-1	
17L1020-02	Chromium6-Dec-18-17-2	

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Fax: 219-769-1664

5713 West 85th Street  
Indianapolis, IN 46278  
Tel: 317-872-1375  
Fax: 317-872-1379

Chain of Custody Record  
Number 144043

Instructions on back

1711020  
City of New Buffalo  
Carey Gadzala  
Buffalo, MI  
12/18/2017

City of New Buffalo  
224 West Buffalo Street  
New Buffalo, MI 49117  
Kenneth A. Anderson  
(269) 469-0381

Project Chromium 6 Testing  
Location 300 Hwy 4 Drive  
PO # U-200  
Compliance Monitoring?  Yes  No  
 Agency/Program

Turnaround Time  
 Routine (5 to 7 business days)  
 RUSH\* (notify lab)  
(needed by)

Report Type  
 Results Only  
 Level II  
 Level III  
 Level III CLP-like  
 Level IV  
 Level IV CLP-like  
 EIDD

Client Sample ID  
Matrix\*  
Grab  
Composite  
Filtered  
Date Collected  
Time Collected  
No. of Containers  
Requested Analyses  
Preservative Types \*\*  
Chromium 6  
Chromium 9

Client Sample ID	Matrix*	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analyses Preservative Types **	For Lab Use Only
Chromium 6-Dec-18-17-1	SW	X			12-18-17	9:30 AM	1	Chromium 6	17L1020
Chromium 6-Dec-18-17-2	SW	X			12-18-17	12:15 PM	1	Chromium 9	-02

Possible Hazard Identification  
 Hazardous  Non-Hazardous  Radioactive  Sample Disposition  Dispose as appropriate  Return  Archive

To be completed by Microbac

Temperature Upon Receipt (°C) 13.5 0.5-13.0°C  
Samples Received on Ice?  Yes  No  
Custody Seals Intact?  Yes  No

Relinquished By (signature) Ken Anderson  
Date/Time 12-18-17/12:20 PM  
Received By (signature) [Signature]  
Date/Time 12-18-17 12:00

Relinquished By (signature)  
Date/Time  
Received By (signature)  
Date/Time