



Protecting, Maintaining and Improving the Health of All Minnesotans

To: Community Water Supply Owner/Operator

From: Community Water Supply Unit
Section of Drinking Water Protection

Subject: Sample Analysis Results for your Public Water Supply (PWS)

Your PWS is required by the Lead and Copper Rule of the Safe Drinking Water Act to monitor for Water Quality Parameters. Enclosed are the results of analyses performed on water samples collected from your PWS. These results must be kept in your files for a minimum of ten (10) years.

If you have any questions concerning these results, please contact Michael Bourland at 651-201-5928, or your Department of Health district engineer.

Bemidji

Todd Johnson 218/308-2110
Eric Weller 218/308-2107

Duluth

Todd Johnson 218/308-2110

Fergus Falls

Lucas Hoffman 218/332-5146

Mankato

Amy Lynch 507/344-2713

Marshall

Kim Larsen 320/223-7330

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Kate Novy 507/206-2724

St. Cloud

Hunter Blommer 320/223-7339
Kim Larsen 320/223-7330
Jennifer Soltys 320/223-7340

St. Paul

Lucas Martin 651/201-4144
Brian Noma 651/201-3971
Jessie Kolar 651/201-4562

06/06/2023

PWSID 1720006

PWS NAME: Henderson

Subject: Water Quality Parameters

The system is responsible for providing consistent orthophosphate residuals within the distribution system to maintain its corrosion control program. Currently, Henderson uses a blended phosphate treatment for corrosion control and sequestration. Minnesota Department of Health (MDH) has recommended the system maintain a minimum orthophosphate residual of 1.0 mg/L for optimal corrosion control treatment.

The most recent water quality parameter (WQP) results show an average orthophosphate level of 1.19 mg/L, and an average total phosphate level of 3.48 mg/L, and an average pH level of 7.6. Henderson has done well in adjusting its chemical feed. No further changes are required.

Please contact your Compliance Engineer, Michael Bourland at 651-201-5928 with questions on corrosion control treatment and pre-notify him of any treatment modifications or changes by emailing him at michael.bourland@state.mn.us



Final Report

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

PWSID: 1720006
System Name: Henderson
City: Henderson

Program Code: HZ

Type: B

Date Received: 05/10/23 10:20
Rep. Temp. (°C): 6.6

Collector Name: James Kroehler
Collector ID: None

MDH Sample Number: 23E0791-01

Location ID: 00024
Sampling Point: D-001

Collect Date: 05/10/23
Collect Time: 08:00
Matrix: Drinking Water

Field Residual Chlorine Result: None
Field Fluoride Result: None
Field pH Result: 7.6
Field PO₄ Result: None

Results were produced by the Minnesota Department of Health, except where noted.

General Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Batch	Prepared	Analyzed	Init.	Method	Qualifiers
Orthophosphate Phosphate	1.27	0.015	mg/L	B3E1144	05/10/23 13:34	05/10/23 15:39	INB	EPA 365.1	
Phosphorus as Phosphate, Total	3.86	0.027	mg/L	B3E1433	05/22/23 08:41	05/23/23 12:40	JNO	EPA 365.1	D1

MDH Sample Number: 23E0791-02

Location ID: 00025
Sampling Point: D-002

Collect Date: 05/10/23
Collect Time: 08:10
Matrix: Drinking Water

Field Residual Chlorine Result: None
Field Fluoride Result: None
Field pH Result: 7.7
Field PO₄ Result: None

Results were produced by the Minnesota Department of Health, except where noted.

General Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Batch	Prepared	Analyzed	Init.	Method	Qualifiers
Orthophosphate Phosphate	1.25	0.015	mg/L	B3E1144	05/10/23 13:34	05/10/23 15:40	INB	EPA 365.1	
Phosphorus as Phosphate, Total	3.81	0.027	mg/L	B3E1433	05/22/23 08:41	05/23/23 12:41	JNO	EPA 365.1	D1

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Authorized by:

Stefan Saravia, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

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PWSID: 1720006

MDH Sample Number: 23E0791-03

Location ID: 00026
Sampling Point: D-003

Collect Date: 05/10/23
Collect Time: 08:15
Matrix: Drinking Water

Field Residual Chlorine Result: None
Field Fluoride Result: None
Field pH Result: 7.6
Field PO4 Result: None

Results were produced by the Minnesota Department of Health, except where noted.

General Chemistry Parameters

Analyte	Result	Reporting Limit	Units	Batch	Prepared	Analyzed	Init.	Method	Qualifiers
Orthophosphate Phosphate	1.05	0.015	mg/L	B3E1144	05/10/23 13:34	05/10/23 15:41	INB	EPA 365.1	
Phosphorus as Phosphate, Total	2.79	0.027	mg/L	B3E1434	05/22/23 08:44	05/23/23 12:47	JNO	EPA 365.1	D1, Z-01

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Batch B3E1144 - Orthophosphate Prep

Blank (B3E1144-BLK1) Prepared: 05/10/23 13:34 Analyzed: 05/10/23 15:33

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Orthophosphate Phosphate	<	0.015	mg/L							INB	

LCS (B3E1144-BS1) Prepared: 05/10/23 13:34 Analyzed: 05/10/23 15:34

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Orthophosphate Phosphate	1.56	0.015	mg/L	1.5		104	90-110			INB	

Duplicate (B3E1144-DUP1) Prepared: 05/10/23 13:34 Analyzed: 05/10/23 15:36
 Source: 23E0776-01

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Orthophosphate Phosphate	0.966	0.015	mg/L		0.966			0	10	INB	

Matrix Spike (B3E1144-MS1) Prepared: 05/10/23 13:34 Analyzed: 05/10/23 15:38
 Source: 23E0776-02

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Orthophosphate Phosphate	2.81	0.015	mg/L	1.5	1.26	103	90-110			INB	

Matrix Spike (B3E1144-MS2) Prepared: 05/10/23 13:34 Analyzed: 05/10/23 15:48
 Source: 23E0793-01

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Orthophosphate Phosphate	2.51	0.015	mg/L	1.5	0.969	103	90-110			INB	

Batch B3E1433 - Phosphorus, Total Prep

Blank (B3E1433-BLK1) Prepared: 05/22/23 08:41 Analyzed: 05/23/23 12:13

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	<	0.009	mg/L							JNO	

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Batch B3E1433 - Phosphorus, Total Prep

LCS (B3E1433-BS1) Prepared: 05/22/23 08:41 Analyzed: 05/23/23 12:14

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	0.630	0.009	mg/L	0.6		105	90-110			JNO	

Duplicate (B3E1433-DUP1) Source: 23E0695-02 Prepared: 05/22/23 08:41 Analyzed: 05/23/23 12:16

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	0.363	0.027	mg/L		0.344			5	20	JNO	D1

Matrix Spike (B3E1433-MS1) Source: 23E0695-03 Prepared: 05/22/23 08:41 Analyzed: 05/23/23 12:18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	2.19	0.027	mg/L	1.79	0.313	104	90-110			JNO	D1

Matrix Spike (B3E1433-MS2) Source: 23E0699-04 Prepared: 05/22/23 08:41 Analyzed: 05/23/23 12:31

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	3.47	0.027	mg/L	1.79	1.59	105	90-110			JNO	D1

Batch B3E1434 - Phosphorus, Total Prep

Blank (B3E1434-BLK1) Prepared: 05/22/23 08:44 Analyzed: 05/23/23 12:44

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	0.014	0.009	mg/L							JNO	Z-01

LCS (B3E1434-BS1) Prepared: 05/22/23 08:44 Analyzed: 05/23/23 12:45

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	0.627	0.009	mg/L	0.6		104	90-110			JNO	Z-01

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Batch B3E1434 - Phosphorus, Total Prep

Duplicate (B3E1434-DUP1)		Source: 23E0791-03			Prepared: 05/22/23 08:44 Analyzed: 05/23/23 12:48						
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	2.78	0.027	mg/L		2.79			0.6	20	JNO	D1, Z-01

Matrix Spike (B3E1434-MS1)		Source: 23E0792-01			Prepared: 05/22/23 08:44 Analyzed: 05/23/23 12:50						
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	3.61	0.027	mg/L	1.79	1.83	99	90-110			JNO	D1, Z-01

Matrix Spike (B3E1434-MS2)		Source: 23E0819-03			Prepared: 05/22/23 08:44 Analyzed: 05/23/23 13:03						
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Init.	Qualifiers
Phosphorus as Phosphate, Total	3.42	0.027	mg/L	1.79	1.56	104	90-110			JNO	D1, Z-01

Data Qualifiers and Definitions

- D1 Sample required dilution due to matrix. Reporting limit has been raised.
- Z-01 Target analyte detected in blank at or above the method specific acceptance criteria and above the method reporting limit . Results below method reporting limit or result >10x blank.

Work Order Comments

Samples were received in proper condition.

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