



February 22, 2017

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency Updates

Dear Mr. Hardy:

Enclosed are the Notice of Deficiency updates for nine water systems; these updates were drafted in December 2016 but it was later discovered these were omitted from the December quarterly updates provided to you.

- i. Bayleaf Master System –
 - i. Barton Creek Bluffs Well #10, P67
 - ii. Woodvalley Well #11, P93
- ii. Bayleaf Master System –
 - i. Ethan's Glen Well #19 and #20, P97
- iii. Cotesworth Down/Kensington Manor Well #1, P04
- iv. Fairview Wooded Acres Well #2, P02
- v. Hampton Park Well #6, TP2
- vi. Holland Master System (Greenfield Manor) Well #2, P02
- vii. Jamison Park Well #6, P03
- viii. Red Mountain Well #3, P03
- ix. Tyndrum Well #1, P01

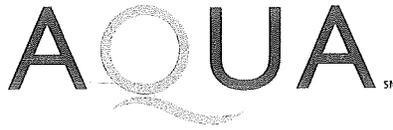
Please advise if you have any questions regarding the enclosed updates.

Sincerely,

A handwritten signature in black ink, appearing to read "Robyn E. Lambeth".

Robyn E. Lambeth
Senior Executive Assistant

Enclosures



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Avocet Subdivision, Wake County
 WSF ID No.: Well #1, P01
 Water System No: NC4092107

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Avocet Well #1, P01. The Avocet water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 135 and the system is approved to serve 155 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Avocet, Well #1, P01 (Samples collected on 4/26/16)	32	5.5	1.60	0.112

Page Two
Avocet Subdivision, Well #1, P01
December 21, 2016

System Flushing

The Avocet water system was flushed in July 2013 and July 2016. Aqua plans to flush the Avocet water system on an annual basis going forward.

Aqua began feeding SeaQuest in September 2015.

Discolored Water Complaints

Aqua has received three customer complaints from the Avocet water system between August 2015 and August 2016. Since the update provided in August 2016, Aqua has received zero complaints.

Corrective Action

Analysis of the sampling of the iron and manganese of Well #1 shows the levels to be elevated. The distribution system was flushed in July 2016 and will continue to be flush annually. Samples were collected on November 7, 2016, from the raw water and the point of entry and the results are as follows: 35 NTU, 16 NTU. Based on these results, Aqua will pursue the installation of a cartridge filter and will have this installed the first quarter 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and/or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely, _____



Shannon V. Becker
President

SVB/r1

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

January 6, 2017

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office
NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Bayleaf Master System
Wake County
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
Water System No: NC0392373

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Bayleaf Master System P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B. The Bayleaf Master water system is comprised of 122 active wells and 117 points of entry (POE). The current number of customers served is 6,112 and the system is approved to serve 6,356 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B.

UPDATED QUARTERLY STATUS
AS FOLLOWS:

TABLE 1. P12 - Martindale Well #2 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		FE (mg/L)	Mn (mg/L)
Martindale Well #2 P12 (Samples collected on 3/14/2013)	37	0	.1	1.53
Updated run time Aug. – Nov. 2016	37	0		

DECEMBER 2016 UPDATE:

Martindale Well #2 has been placed in the “inactive” status and therefore, is not being used.

The Fe and Mn results posted in the table above were part of the IOC sample collected on March 14, 2013. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016.

Aqua has received no customer complaints from the Martindale water system since the last update provided in August 2016.

Based on the updated information provided, Aqua requests that the requirement to submit further quarterly status reports for this well be discontinued.

TABLE 2. P16 - Swan's Mill Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Swans Mill Well #1 P16 (Samples collected on 3/24/2015)	80	0	7.8	0.02
Updated run time Aug. – Nov. 2016	80	13.5	Well Head Turbidity .18 (12/20/16)	Entry Point Turbidity .13 (12/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on March 24, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016, Aqua has received no customer complaints from Swan's Mill water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action:

Aqua plans to collect an IOC sample in September 2016. Based on those results, Aqua will take the necessary steps to install proper treatment, if necessary.

DECEMBER 2016 UPDATE:

Aqua inadvertently indicated an IOC sample would be collected in September; the next scheduled IOC sample is scheduled for 2018. Aqua collected special samples for turbidity from the wellhead and from the point of entry and the results are shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest; based on the result above this is less than 1.0 and appears the SeaQuest is effective.

Aqua received five customer complaints from the Swan's Mill water system since the last update provided in August 2016. All five calls were related to a water main break that occurred on August 29, 2016.

Based on the low turbidity results on December 20, 2016, and no customer complaints from August 2015 through August 2016, Aqua requests that the requirement to submit further quarterly status reports for Swan's Mill Well #1 be discontinued.

TABLE 3. P19 -Martindale Well #3 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Martindale Well #3 P19 (Samples collected on 1/7/2016)	60	0	1.17	.80
Updated run time Aug. – Nov. 2016	60	0	Well Head Turbidity 22 (12/20/16)	Entry Point Turbidity 20 (12/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 7, 2016. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from Martindale water system in the last 12 months.

Corrective Action:

This well has not run since February 2016. Due to a loss of production, Aqua plans to clean the well in an effort to regain well production. At that time, Aqua will collect raw water and point of entry turbidity and then plan a course of action based upon those results.

DECEMBER 2016 UPDATE:

Aqua has received no customer complaints from the Martindale water system since the last update provided in August 2016.

On December 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Martindale Well #3 is currently offline. Aqua anticipates cleaning this well by mid-2017 and will then assess the well's availability to be utilized in order to subsidize production and determine whether the well can be placed back into service.

TABLE 4: P28 – Shannon Woods Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Shannon Woods Well #1 P28 (Samples collected on 1/30/2015)	77	0	8.0	0.0
Updated run time Aug. – Nov. 2016	77	0		

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 30, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from Shannon Woods water system in the last 12 months.

Corrective Action:

This well is offline due to a loss of production and poor water quality. Aqua plans to clean the well in an effort to regain well production. At that time, Aqua will collect raw water and point of entry turbidity samples and then plan a course of action based upon results.

DECEMBER 2016 UPDATE:

Aqua received four discolored water complaints from customers in the Shannon Woods water system since the last update provided in August 2016. It should be noted that this well is not in production and is not a contributing factor to these complaints as this community is part of a larger interconnected system.

Shannon Woods Well # 1 is currently offline due to a loss of production and poor water quality. Therefore, no updated samples were taken.

Aqua anticipates cleaning this well by mid-2017 and will then assess the well’s availability to be utilized in order to subsidize production and determine whether the well can be placed back into service.

TABLE 5: P39 - Sheffield Manor Well #2 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Sheffield Manor Well #2 P39 (Samples collected on 1/29/15)	25	0	1.0	0
Updated run time Aug. – Nov. 2016	25	0		

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 29, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received two customer complaints from Sheffield Manor water system in the last 12 months.

Corrective Action:

This well has been offline since 2013 due to a loss of production and poor water quality. Aqua plans to clean the well in an effort to regain well production. At that time, Aqua will collect raw water and point of entry turbidity samples and then plan a course of action based upon results.

DECEMBER 2016 UPDATE:

Aqua has received four customer complaints from the Sheffield Manor water system since the last update provided in August 2016. These complaints were caused by aerated water from wells located in the Devon water system.

Sheffield Manor Well #2 is currently offline due to a loss of production and poor water quality. Therefore, no updated samples were taken.

Aqua anticipates cleaning this well by mid-2017 and will then assess the well's availability to be utilized in order to subsidize production and determine whether the well can be placed back into service.

TABLE 6: P63 – The Barony Well #5 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
The Barony Well #5 P63 (Samples collected on 1/6/14)	77	11.0	1.0	.47
Updated run time Aug. – Nov. 2016	77	14.9	Well Head Turbidity 4.4 (9/20/16)	Entry Point Turbidity 1.6 (9/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 6, 2014. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from The Barony water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action:

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing until a cartridge filter is installed, which is planned for the second quarter of 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

DECEMBER 2016 UPDATE:

Aqua has received no customer complaints from The Barony water system since the last update provided in August 2016.

On September 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly until the installation of the cartridge filter, which is scheduled for the second quarter of 2017.

TABLE 7: P75 - Enclave at Barton Creek Bluffs Well #18 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Enclave at Barton Creek Bluffs Well #18 P75 (Samples collected on 10/9/2013)	75	8.10	1.0	.29
Enclave at Barton Creek Bluffs Well #18 P75 (Samples collected on 10/12/2016, run time Aug – Nov 2016)	75	12.8	1.49	0.35
Updated run time Aug. – Nov. 2016	75	12.8	Well Head Turbidity 3.2 (12/20/16)	Entry Point Turbidity 1.5 (12/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on October 9, 2013. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016 of this year. Aqua has received eight customer complaints from the Enclave at Barton Creek Bluffs water system in the last 12 months.

Aqua began feeding SeaQuest in October 2015.

Corrective Action:

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing until a cartridge filter is installed, which is planned for the second quarter of 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. Aqua also plans to collect an IOC sample from this well in October 2016.

DECEMBER 2016 UPDATE:

Aqua received seven discolored water complaints from customers in The Enclave at Barton Creek Bluffs water system since the last update provided in August 2016.

On December 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly until the installation of the cartridge filter, which is scheduled for the second quarter of 2017.

TABLE 8: P76 – Hawthorne Wells #1 and #2 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Hawthorne Well#1 P76 (Samples collected on 5/19/16)	73	10.7	1.01	.53
Updated run time Aug. – Nov. 2016	73	14.2	Well Head Turbidity 22 (9/20/16)	Entry Point Turbidity 1.7 (9/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on May 19, 2016. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from the Hawthorne water system in the last 12 months.

Currently Well #2 is offline and there are no plans to bring this well back on line. Well #1 will continue to be used.

Aqua began feeding SeaQuest on Well #1 in February 2016.

Corrective Action:

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing until a cartridge filter is installed, which is planned for the second quarter of 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

DECEMBER 2016 UPDATE:

Aqua has received one customer complaint from the Hawthorne water system since the last update provided in August 2016. It should be noted that Well #1 may not be the sole contributing factor to these complaints as this community is part of a larger interconnected system (Well #2 is offline and is not a contributing factor).

On September 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly until the installation of the cartridge filter, which is scheduled for the second quarter of 2017.

TABLE 9: P92 - Woodvalley Well #9 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Woodvalley #9 P92 (Samples collected on 10/7/15)	38	8.39	.8	.5
Updated run time Aug. – Nov. 2016	38	12.9	Well Head Turbidity 4.0 (9/20/16)	Entry Point Turbidity .91 (9/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on October 7, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received two customer complaints from the Woodvalley water system in the last 12 months.

Aqua began feeding SeaQuest in February 2016.

Corrective Action

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing until a cartridge filter is installed, which is planned for the second quarter of 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

DECEMBER 2016 UPDATE:

Aqua has received two customer complaints from the Woodvalley water system since the last update provided in August 2016.

On September 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly until the installation of the cartridge filter, which is scheduled for the second quarter of 2017.

TABLE 10: P3B – Carlyle Manor Well #4 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime hrs/day	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Carlyle Manor Well #4 P3B (Samples collected on 10/7/15)	73	8.5	2.0	.67
Updated run time Aug. – Nov. 2016	73	11.7	Well Head Turbidity 18 (9/20/16)	Entry Point Turbidity 1.3 (9/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on October 7, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received four customer complaints from the Carlyle Manor water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing until a cartridge filter is installed, which is planned for the second quarter of 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NIU) or less as a measure to the effectiveness of the SeaQuest.

DECEMBER 2016 UPDATE:

Aqua has received three customer complaints from the Carlyle Manor water system since the last update provided in August 2016.

On September 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly until the installation of the cartridge filter, which is scheduled for the second quarter of 2017.

TABLE 11. P4B - Seville Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Seville Well#1, P4B (Samples collected on 1/9/16)	44	7.25	1.0	.50
Updated run time Aug. – Nov. 2016	44	14.1	Well Head Turbidity 3.8 (9/20/16)	Entry Point Turbidity .84 (9/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 9, 2016. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua received no customer complaints from the Seville water system in the last 12 months.

Aqua began feeding SeaQuest in August 2015.

Corrective Action:

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

DECEMBER 2016 UPDATE:

Aqua has received no customer complaints from the Seville water system since the last update provided in August 2016.

On September 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly.

TABLE 12: P7B - George's Grant Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
George's Grant Well #1 P7B (Samples collected on 4/23/15)	66	6.16	1.3	.63
Updated run time Aug. – Nov. 2016	66	15.0	Well Head Turbidity 15 (12/20/16)	Entry Point Turbidity 2.4 (12/20/16)

The Fe and Mn results posted in the table above were part of the IOC sample collected on April 23, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received Aqua received no customer complaints from the George's Grant water system in the last 12 months.

Aqua began feeding SeaQuest in October 2015.

Corrective Action:

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will ensure optimization of the SeaQuest and continue the quarterly turbidity testing until a cartridge filter is installed, which is planned for the second quarter of 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

DECEMBER 2016 UPDATE:

Aqua has received one customer complaint from the George's Grant water system since the last update provided in August 2016.

On December 20, 2016, Aqua collected special samples for turbidity and the results are shown in the table above.

Aqua will ensure optimization of the SeaQuest and continue to test turbidity quarterly until the installation of the cartridge filter, which is scheduled for the second quarter of 2017.

Related to all wells above using a sequestering treatment:

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being

oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

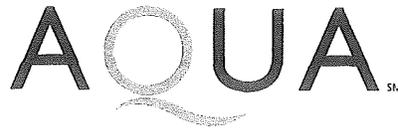
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency
 Iron and Manganese Concentration
 Bayleaf Master System
 WSF ID No.: Barton Creek Bluffs Well #10 - P67
 WSF ID No.: Woodvalley Well #11 - P93
 Water System No: NC0392373
 Wake County

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 24, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at the following wells in the Bayleaf Master System: Barton Creek Bluffs Well #10 – P67 and Woodvalley Well #11 – P93. The Bayleaf Master System/Barton Creek Bluffs/Ravenwood/Woodvalley water systems are comprised of 120 active wells and 109 points of entry (POE). The current number of customers served is 5,930 and the system is approved to serve 6,246 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #10 – P67 and Well #11 – P93.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Woodvalley Well #11 – P93 (Samples collected December 10, 2015)	29	7.3	0.18	0.285

Page Two
Barton Creek Bluffs Well #10 - P67
Woodvalley Well #11 - P93
December 21, 2016

Woodvalley Well #11 – P93 Well Head (Samples collected September 22, 2016)	29	9.7	ND	0.151
Barton Creek Bluffs Well #10 – P67 (Samples collected June 2013)	15	9.4	0	0.2
Barton Creek Bluffs IOC Well #10 – P67 (Samples collected May 31, 2016)	15	9.8	0	0.232
Barton Creek Bluffs Well Head Well #10 – P67 (Samples collected September 22, 2016)	15	9.8	1	0.102

Woodvalley Well #11, P93

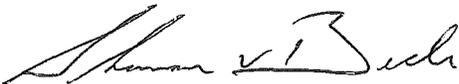
Updated samples were collected September 22, 2016, and the results are shown in the table above. Aqua will submit engineering plans and specifications for approval of a sequestering agent and plans to have this installed by December 30, 2016. Once the sequestering agent is installed, Aqua will evaluate its effectiveness by collecting monthly turbidity samples at the point of entry. It has been decided that a distribution is not reflective of the effectiveness of the success of treatment from Woodvalley #11.

Barton Creek Bluffs Well #10, P67

Updated samples were collected September 22, 2016, and the results are shown in the table above. SeaQuest is being fed at Well #10. We have ensured the optimal chemical feed rate of the sequestering agent is being fed, and will continue to flush the system on an annual basis. Samples from the wellhead and the point of entry were collected and the results are posted in the table above.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

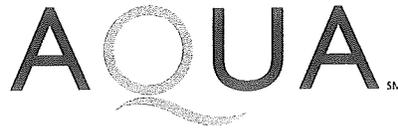


Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Status Report
 Iron and Manganese Concentration
 Bayleaf Master System / Ethan’s Glen Well #19 and #20, P97
 Wake County, Water System No: NC0392373

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 24, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Bayleaf Master System / Ethan’s Glen Well #19 and #20, P97. The Ethan’s Glen water system is comprised of nine active wells and four points of entry (POE). The current number of customers served is 170 and the system is part of the Bayleaf Master Water System. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #19 and #20, P97.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Ethan’s Glen Well #19 and #20, P97 (Samples collected September 17, 2014)	#19 – 18 gpm #20 – 11 gpm	#19 – 7.22 #20 – 9.6	1.87	0.0179
Ethan’s Glen Well #19 and #20, P97 (Samples collected September 22, 2016)	#19 – 18 gpm #20 – 11 gpm	#19 – 10.6 #20 – 10.6	#19 – .080 #20 – .38	#19 – .078 #20 – .035

Page Two
Bayleaf Master System Well #19 and #20, P97
December 21, 2016

Updated well head samples were collected September 22, 2016, and the results are shown in the table above.

Flushing

Aqua performed system-wide flushing in the Bayleaf Master System area, which includes Ethans Glen Well #19 and #20, P97, between January and April, 2016.

Customer Complaints

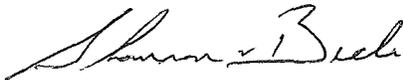
Aqua has received zero customer complaints from the Ethan's Glen water system since the last update provided in October 2016.

Corrective Action

Aqua will submit plans and specifications for the addition of a sequestering agent by December 30, 2016. Once this is approved and installed, Aqua will collect turbidity samples from the well and the point of entry and will evaluate the effectiveness of the sequestering agent.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

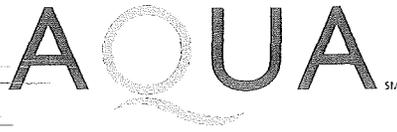


Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

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Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 28, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency
 Iron and Manganese Concentration
 Belle Ridge Subdivision, Wake County
 WSF ID No.: Well #2, P02
 Water System No: NC0392358

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Belle Ridge Well #2, P02. The Belle Ridge water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 55 and the system is approved to serve 55 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Belle Ridge, Well #2, P02 (sample collected on 10/23/13)	30	1.5	1.0	0.22
Belle Ridge, Well #2, P02 (sample collected on 7/27/16)	30	1.14	.48	.21
Belle Ridge, Well #2, PO2 (Samples collected on 12/22/16)	30	2.55	Well Head Turbidity 1.1	Entry Point Turbidity .71

Page Two
Belle Ridge Subdivision, Well #2, P02
December 28, 2016

System Flushing

The Belle Ridge water system was last flushed in July 2016 and will be flushed on an annual basis going forward.

Discolored Water Complaints

Aqua has received no customer complaints from the Belle Ridge water system for the last 18 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has high levels of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2015. Aqua has limited the use of this well and relies more on Well #1 for meeting system demand. Aqua collected special samples for turbidity from the wellhead and from the point of entry and the results are shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest; based on the result above this is less than 1.0 and appears the SeaQuest is effective.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the low turbidity results and no complaints, Aqua requests that the requirement to submit further quarterly status reports for this well be discontinued.

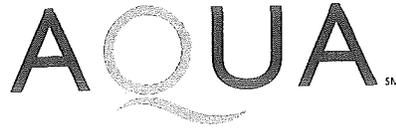
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Branston Subdivision, Wake County
 WSF ID No.: Well #2, TP1
 Water System No: NC4092076

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Branston Well #2, TP1. The Branston water system is comprised of one active well and one point of entry (POE). The current number of customers served is 43 and the system is approved to serve 44 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, TP1.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Branston, Well #2, TP1 (Samples collected on 1/5/16)	49	6.5	.70	0.30
Branston, Well #2, TP1 (Samples collected on 11/7/16)	49	3.0	0.73 NTU	

Page Two
Branston Subdivision, Well #2, TP1
December 21, 2016

System Flushing

The Branston Subdivision is flushed on an annual basis; listed below are dates for the past four years:

- September 2013
- August 2014
- November 2015
- September 2016

Discolored Water Complaints

Aqua has received three customer complaints from the Branston water system since the update provided in August 2016.

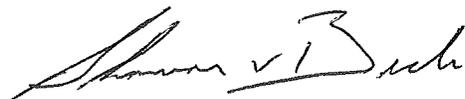
Corrective Actions

Analysis reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in July 2013. Since Aqua began feeding SeaQuest, the distribution system has been flushed annually and will continue to flush the distribution system at this reoccurring frequency. The next scheduled flushing is for October 2017. Aqua collected a special sample for turbidity from the entry point on November 7, 2016, and the results are shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest; based on the result above this is less than 1.0 and appears the SeaQuest is effective. Aqua will continue to sample quarterly for turbidity at this entry point to ensure its effectiveness.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Briarwood/Kildaire Subdivision, Wake County
 WSF ID No.: Well #1, P04
 Water System No: NC0392383

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Briarwood/Kildaire Well #1, P04. The Briarwood/Kildaire water system is comprised of five active wells and five points of entry (POE). The current number of customers served is 156 and the system is approved to serve 168 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P04.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Briarwood/Kildaire, Well #1, P04 (Samples collected on 1/6/16)	30	5.8	0.95	0.17
Briarwood/Kildaire, Well #1, PO4 (Samples collected on 11/8/16)	30	7.5	Raw = <0.50 NTU	POE = <.50 NTU

Page Two
Briarwood/Kildaire Subdivision, Well #1, P04
December 21, 2016

System Flushing

The Briarwood/Kildaire water system is flushed on an annual basis and was most recently flushed in July 2016.

Discolored Water Complaints

Aqua has received three customer complaints from the Briarwood/Kildaire water system since the update provided in August 2016.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in June 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua collected special turbidity samples on November 8, 2016, from the raw water and from the point of entry and the results are shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. Based on the results, it appears that SeaQuest is being effective.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the demonstrated effectiveness of SeaQuest and the corresponding low turbidity result as shown above, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost.

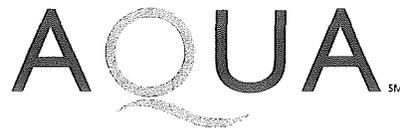
If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency - Quarterly Status Report
 Iron and Manganese Concentration,
 Cotesworth Down/Kensington Manor Well # 1, P04
 Wake County, Water System No: NC0392125

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 8, 2016, regarding elevated concentrations of iron (Fe) and manganese (Mn) at Cotesworth Down/Kensington Manor Well #1, P04. The Cotesworth Down/Kensington Manor master system is comprised of four wells and four points of entry (POE). The current number of customers served is 192 and the system is approved to serve 192 connections. The table below outlines the run time and the latest iron and manganese concentration collected as part of the ongoing Inorganic Chemical Analyses (IOC) at Well #1, P04.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Cotesworth Down/ Kensington Manor Well #1 (P04) (Sample collected 2/4/14)	33	5.0	2.0	0
Cotesworth Down/ Kensington Manor Well #1 (P04) (Sample collected 3/1/16)	33	6.2	.02	.012

Page Two
Mr. W. Allen Hardy
Cotesworth Down/Kensington Manor Well # 1, P04
December 21, 2016

Cotesworth Down/ Kensington Manor Well #1 (P04) (Sample collected 9/20/16)	33	9.60	.0	.0
Updated Information (Well run times from August November 2016 Sample collected 12/21/2016)	33	7.7	.01	.051

Currently there is no iron and manganese treatment at Cotesworth Down/Kensington Manor Well #1 (P04). Updated samples were collected December 21, 2016, and the results are shown in the table above.

Aqua postponed the cleaning and inspection of the 5,400 gallon hydropneumatic tank at Well #1 after the well head samples revealed no problems. The next IOC compliance sample is due in February 2017.

Flushing

The Cotesworth Downs water system was flushed in April 2016 and is scheduled to be flushed again in April 2017.

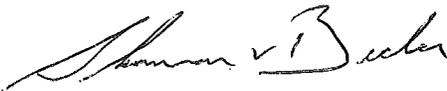
Customer Complaints

Aqua has received one water quality complaint since the last update provided in October 2016. The complaint was received December 2, 2016.

Based on the information provided above, Aqua requests that the requirement to submit further quarterly status reports for this well be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Crescent Ridge Subdivision, Wake County
 WSF ID No.: Well #5, P02
 Water System No: NC4092011

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Crescent Ridge Well #5, P02. The Crescent Ridge water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 95 and the system is approved to serve 95 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #5, P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Crescent Ridge, Well #5, P02 (Samples collected on 4/23/15)	43	3.68	.7	.3
Crescent Ridge, Well #5 and Well #6 Combined (Field samples collected on 12/19/16)	43	7.3 Aug – Nov 2016	0.0	0.040

Page Two
Crescent Ridge Subdivision, Well #5, P02
December 21, 2016

System Flushing

The Crescent Ridge water system is flushed on an annual basis with the most recent flushing occurring in March 2016. The hydropneumatic tank was cleaned in April 2014.

Discolored Water Complaints

Aqua received three customer complaints from the Crescent Ridge water system from August 1, 2015 through August 1, 2016. Aqua has received seven customer water quality complaints since the update provided in August 2016, with only one of those complaints being received after the greensand filter was put online.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some elevated concentration of iron and manganese at Well #5. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in September 2013. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. A cartridge filter was added in October 2013. By Order dated May 21, 2015, from the North Carolina Utilities Commission, Aqua received approval for the installation of a greensand filtration system at Well #5 and Well #6 (which was a combined entry). This filter was installed and placed online in October 2016.

Based on the updated information provided above, in particular the installation of the greensand filter, Aqua requests that the requirement to submit further quarterly status reports for this system be discontinued.

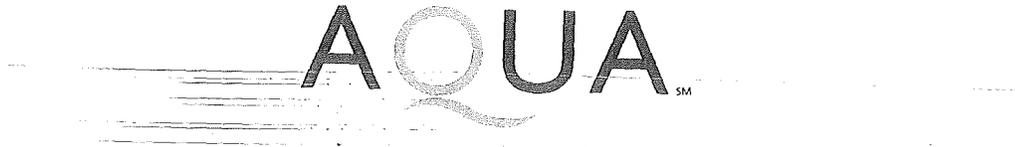
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Duncan Ridge Subdivision, Wake County
 WSF ID No.: Well #5, P05
 Water System No: NC4092063

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Duncan Ridge Well #5, P05. The Duncan Ridge water system is comprised of three active wells and two points of entry (POE). The current number of customers served is 87 and the system is approved to serve 90 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #5, P05.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Duncan Ridge, Well #5, P05 (Samples collected on 4/29/15)	33	2.8	1.08	0.3
Duncan Ridge, Well #5 PO5 (Samples collected on 11/8/16)	33	.97		POE = 6.3 NTU

Page Two
Duncan Ridge Subdivision, Well #5, P05
December 21, 2016

System Flushing

The Duncan Ridge water system is flushed on an annual basis. Below are the dates for the last three years:

- September 2014
- July 2015
- July 2016

Discolored Water Complaints

Aqua received two customer complaints from the Duncan Ridge water system since the last update in August 2016.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration levels of iron and manganese at Well #5. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in August 2014. Since then, Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. The use of Well #5 is limited in use due to system demand. Aqua will install an automatic blow-off at the wellhead, which will be equipped with a solenoid valve and actuator to discharge water at the beginning of each pump cycle.

On November 8, 2016, Aqua collected a special point of entry sample for turbidity and the result is shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. Aqua will continue to collect and monitor quarterly turbidity samples.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Eagle Creek Subdivision, Wake County
 WSF ID No.: Well #3, P03
 Water System No: NC4392128

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Eagle Creek Well #3, P03. The Eagle Creek water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 89 and the system is approved to serve 89 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Eagle Creek, Well #3, P03 (Samples collected on 2/19/14)	29	9.7	0.9	0.13
Eagle Creek, Well #3 (collected 11/11/2016)	29	6.75	<0.50 NTU	

Page Two
Eagle Creek Subdivision, Well #3, P03
December 21, 2016

System Flushing

Aqua flushes the Eagle Creek Subdivision on an annual basis. Below are the dates for the last three years:

- May 2014
- May 2015
- May 2016

Discolored Water Complaints

Aqua has received two customer complaints from the Eagle Creek water system since the update provided in August 2016.

Corrective Actions

Analysis reveals the well has elevated concentration levels of iron and manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Due to annual flushing and the switch to SeaQuest, the number of customer complaints has decreased over the last 18 months. Aqua collected a special sample for turbidity from the point of entry and the result is reflected in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the turbidity results above, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

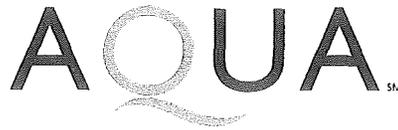
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Status Report
 Iron and Manganese Concentration
 Fairview Wooded Acres Subdivision, Wake County
 WSF ID No.: Well #2, P02
 Water System No: NC0392129

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 24, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Fairview Wooded Acres Well #2, P01. The Fairview Wooded Acres water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 119 and the system is approved to serve 134 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Fairview Well #2, P02 (Samples collected January 20, 2015)	16	0	1.24	.0642
Updated Information (Samples collected January 20, 2015)	16	0	Same as above	Same as above

Aqua collected IOC compliance samples on January 20, 2015, and the results are shown in the table above. Well #2 does not run on a regular basis because of system demand and operates in back-up mode. In the event a back-up well is needed, the well will be ready for use if it needs to be placed into service.

Page Two
Fairview Wooded Acres Subdivision Well #2, P02
December 21, 2016

Flushing

Fairview Wooded Acres was last flushed between June 13 and June 17, 2016.

Customer Complaints

Aqua has received zero customer complaints from the Fairview Wooded Acres water system since the last updated provided for Fairview Wooded Acres Well #1 P01 in October 2016.

Based on the information provided above, Aqua requests that this Notice of Deficiency be rescinded as well as the requirement to submit further quarterly status reports.

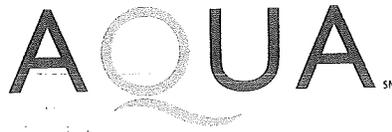
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Forrest Glen Subdivision, Wake County
 WSF ID No.: Well #1, P01
 Water System No: NC4392142

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Forrest Glen Well #1, P01. The Forrest Glen water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 108 and the system is approved to serve 109 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Forrest Glen Master, Well #1, P01 (Samples collected on 4/13/15)	34	0.9	1.39	0.155

Page Two
Forrest Glen Master System, Well #1, P01
December 21, 2016

System Flushing

At a minimum, Aqua flushes the Forrest Glen water system on an annual basis and has flushed the system five times over the last three years. The system was most recently flushed the week of November 28 through December 2, 2016.

The hydro-pneumatic tank was cleaned in February 2015.

Discolored Water Complaints

In the August 2016 update, Aqua reported receiving nineteen customer complaints from the Forrest Glen Master System over the last twelve months. Since September 2016, Aqua has received two customer complaints for discolored water.

Corrective Actions

Analysis reveals Well #1 has elevated concentration levels of iron and manganese. In an effort to ensure the drinking water is not discolored due to the presence of these minerals, Aqua began feeding SeaQuest in June 2014. Harmsco particulate filters were installed at both wells in February 2015. The amount of minerals collected on these filters caused each filter to collapse within one week of installation; therefore, we are unable to use the particulate filters. Aqua prepared a request to the Public Staff of the North Carolina Utilities Commission for a permanent filtration system at Well #2, which has the larger capacity of the two wells. This information was provided by Aqua on July 18, 2016, and as of the date of this letter, the Public Staff and Aqua have not reached agreement. Aqua intends to use Well #1 as a backup well, if the request for a permanent filtration system is approved for Well #2. Aqua will continue to flush the system at least annually, optimize the sequestration at Well #1 and #2, and will limit the use of Well #1 in Forrest Glen.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson (919)653-6964.

Sincerely,

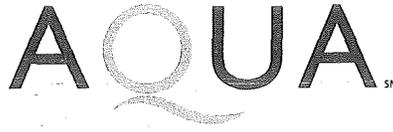


Shannon V. Becker
President

SVB/rl

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Galloway Subdivision, Wake County
 WSF ID No.: Well #2, P02
 Water System No: NC4092027

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Galloway Well #2, P02. The Galloway water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 91 and the system is approved to serve 91 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Galloway, Well #2, P02 (Samples collected on 4/23/15)	31	.25	1.7	.27
Well#2 PO2 (Samples collected 12/21/2016)			1.54	.34

Page Two
Galloway Well #2, P02
December 21, 2016

System Flushing

The Galloway water system is flushed on an annual basis with the most recent flushing being December 2015.

The hydropneumatic tank was cleaned in February 2016.

Discolored Water Complaints

Aqua received 30 customer complaints from the Galloway water system in the last 12 months and no customer complaints since the update provided in August 2016.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Aqua will continue to flush the distribution system annually. Aqua initially proposed the installation of a manganese oxide filter to address the water quality issues for Well #2, but have not reached an agreement for approval with the Public Staff and opted to install a cartridge filter on December 19, 2016. Well #2 only runs when there is very low pressure experienced at the Galloway water system. Aqua will collect quarterly samples for iron and manganese at the wellhead and at the point of entry to demonstrate the effectiveness of the cartridge filter.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl

OFFICIAL COPY

Sep 19 2018

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor Public
 Water Supply Section 1628
 Mail Service Center Raleigh,
 NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Glendale Master System Subdivision,
 WSF ID No.: Well #1 (Glendale) P01 and Well #1 (Chari Heights) P02
 Water System No: NC0392293

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Glendale Master System Well #1, (Glendale) P01 and Well 31 (Chari Heights) P02. The Glendale Master System is comprised of six active wells and six points of entry (POE). The current number of customers served is 250 and the system is approved to serve 253 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, (Glendale) P01 and Well #1 (Chari Heights) P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Glendale Master Well #1, P01 (Samples collected October 2014)	45	0	1.3	0.175
Chari Heights, Well #1, P02 (Samples collected October 2014)	40	3.5	1.99	0.024

Page Two
Mr. W. Allen Hardy
Glendale Master System, Well #1 (Glendale) P01 and Well #1 (Chari Heights) P02
December 21, 2016

Chari Heights, Well #1, P02 (Samples collected November 4, 2016)	40	5.0	Well Head <u>Turbidity</u> <0.5	
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Discolored Water Complaints

The Glendale Master System is flushed on an annual basis with the most recent flushing being March 2016. The next scheduled flushing is March 2017.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some manganese and an elevated concentration of iron at both wells. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency.

Aqua will limit the use of Glendale Well #1, which does not run on a regular basis and operates in back-up mode. In the event a back-up well is needed, the well will be ready for use if it needs to be placed into service. A particulate cartridge filter is scheduled to be installed at Chari Heights Well #1 by the end of the first quarter 2017. At these wells, samples will be collected from the raw water and from the point of entry on a quarterly basis. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the effectiveness of SeaQuest and the corresponding low turbidity result, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor Public
 Water Supply Section 1628
 Mail Service Center Raleigh,
 NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Glendale Master System Subdivision,
 Wake County WSF ID No.: Well # 1, TPI
 Water System No: NC0392293 Dear

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 24, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Glendale Master System Well #1, TPI. The Glendale Master System is comprised of six active wells and six points of entry (POE). The current number of customers served is 250 and the system is approved to serve 253 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, TPI.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (me/L)	Mn (me/L)
Glendale Master Hickory Creek Well # 1 (TP#1) (Samples collected October 2014)	45	0	1.3	0.175
Glendale Master Hickory Creek Well #1 (TP#1) (Samples collected October 6, 2016)	45	4.36	0.72	0.085

Page Two
Glendale Master System Well #1, TP1
December 21, 2016

Glendale Master Hickory Creek Well #1 (TP#1) (Samples collected 11/4/2016)	45	4.36		POE= \leq 0.5 NTU
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Discolored Water Complaints

Between August 2015 and August 2016, Aqua received four calls for cloudy, milky water but has not received any calls regarding discolored water due to iron or manganese. Since October 2016, Aqua has received no calls regarding discolored water.

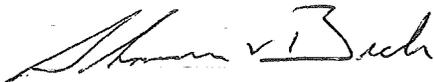
Corrective Actions

Glendale Well #1 exceeded the secondary maximum contaminant level (SMCL) for iron and manganese. Samples were collected at the entry point for Hickory Creek Well #1 on October 6, 2016, and the results are shown in the table above. Aqua also collected a special sample for turbidity from the point of entry and the result is shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Based on the effectiveness of SeaQuest and the corresponding low turbidity result, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

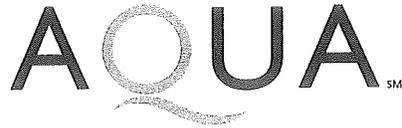
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency
 Iron and Manganese Concentration
 Hampton Park Subdivision, Wake County
 WSF ID No.: Well #6, TP2
 Water System No: NC4092084

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Hampton Park Well #6, TP2. The Hampton Park water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 101 and the system is approved to serve 101 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #6, TP2.

Updated Quarterly Status Report

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 1/12/15	
	Approved		Fe (mg/L)	Mn (mg/L)
Hampton Park, Well #6, TP2 (Samples collected on 1/12/15)	88	1.3	0.9	0.23
Hampton Park, Well #6, TP2 (Special raw samples collected on 5/26/16)	88	1.5	1.28	0.23

Page Two
Hampton Park Subdivision, Well #6, TP2
December 21, 2016

System Flushing

The Hampton Park water system is flushed on an annual basis with the most recent flushing being in November 2016. The next scheduled flushing is November 2017.

Discolored Water Complaints

In August 2016, Aqua received two water quality complaints, both from the same customer.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #6. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in October 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. In December 2016, Aqua will file for approval from the North Carolina Utilities Commission for the installation of a filtration system at Hampton Park Well #6. If this request is approved, anticipated completion date for the installation of the filtration system is March 2018.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 High Grove Subdivision, Wake County
 WSF ID No.: Well #1, P01
 Water System No: NC4092096

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at High Grove Well #1, P01. The High Grove water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 142 and the system is approved to serve 155 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
High Grove, Well #1, P01 (Samples collected on 5/4/2016)	48	3.2	0.369	0.177
High Grove, Well #1, PO1 (Samples collected on 10/13/16)	48	0	Raw <0.50 NTU	POE = 0.72 NTU

Page Two
High Grove Subdivision, Well #1, P01
December 21, 2016

System Flushing

The High Grove water system is flushed on an annual basis. The water system was flushed in September 2015 and June 2016.

Discolored Water Complaints

Aqua received eight customer complaints from the High Grove water system since the last update provided in August 2016.

Corrective Actions

Aqua believes this Notice of Deficiency was sent in error as the combined sampling results as of May 4, 2016 are 0.546 (Fe=0.369 and Mn=0.177).

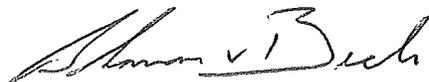
Analysis reveals the well has elevated concentration of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua collected special samples for turbidity from the wellhead and from the point of entry and the results are shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the turbidity results above, Aqua requests that the requirements to submit further quarterly status reports be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 High Meadows Subdivision, Wake County
 WSF ID No.: Well #2, TM1
 Water System No: NC0392334

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at High Meadows Well #2, TM1. The High Meadows water system is comprised of two active wells and one point of entry (POE). The current number of customers served is 133 and the system is approved to serve 149 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, TM1.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
High Meadows, Well #2, TM1 (Samples collected on 4/23/15)	64	4.7	.95	.13
High Meadows, Well #2, TM1 (Samples collected on 12/20/2016)	64	5.5 Aug – Nov.	Turbidity Well head 8.7	Turbidity Entry Point .95

Page Two
High Meadows Subdivision, Well #2, TM1
December 21, 2016

System Flushing

The High Meadows water system is flushed on an annual basis with the most recent flushing occurring in April 2016.

Discolored Water Complaints

Aqua received two customer complaints from the High Meadows water system from August 2015 to August 1, 2016. Aqua has received one customer complaint since the last update in August 2016.

Corrective Actions

Analysis reveals the well has elevated concentration of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in October 2013. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. A cartridge filter was installed in September 2014. Aqua collected special samples for turbidity from the wellhead and from the point of entry and the results are shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Based on the effectiveness of the SeaQuest and the cartridge filter and the corresponding turbidity result at the point of entry, Aqua proposes one more quarter of sampling and will then evaluate the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

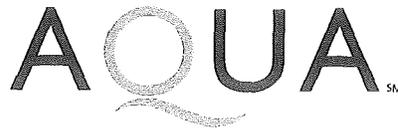
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency
 Iron and Manganese Concentration
 Holland Master System (Greenfield Manor) Subdivision, Wake County
 WSF ID No.: Well #2, P02
 Water System No: NC4392150

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Holland Master System (Greenfield Manor) Well #2, P02. The Holland Master System (Greenfield Manor) water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 129 and the system is approved to serve 129 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Holland Master System (Greenfield Manor) Well #2, P02 (Samples collected on 1/24/14)	27	1.4 Zero run time since 11/2015	1.0	0.12

Page Two
Holland Master System (Greenfield Manor) Well #2, P02
December 21, 2016

System Flushing

The Greenfield Manor water system is flushed on an annual basis with the most recent flushing being in August 2016. The next scheduled flushing is August 2017. The hydropneumatic tank was cleaned in January 2015.

Discolored Water Complaints

Aqua has received zero customer complaints since the updated provided in August 2016.

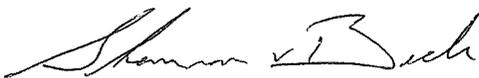
Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration levels of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in February 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Particulate filtration was installed at Greenfield Manor Well #2 on February 23, 2015, and has shown to be ineffective. Lake Rand Well #1 is equipped with a greensand filter and Aqua has minimized the run times at Greenfield Manor and Holland Ridge since the filter was put online at Lake Rand Well #1 in September 2015. Because system demand is adequately met consistently with the two other wells in the system, Aqua does not recommend any additional treatment at Well #2 at this time; Well #2 is currently offline. We will manage the run times at Well #2 to a minimum and continue to exercise the well regularly so in the event a back-up well is needed, the well will be ready for use if it needs to be placed into service.

Based on the updated information provided, Aqua requests that the requirement to submit further quarterly status reports for this system be discontinued.

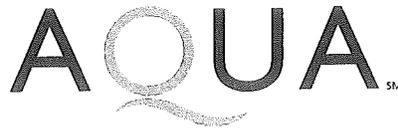
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919)653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Status Report
 Iron and Manganese Concentration
 Jamison Subdivision, Wake County
 WSF ID No.: Well #6, P03
 Water System No: NC4392188

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 24, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Jamison Park Well #6, P03. The Jamison Park water system is comprised of four active wells and four points of entry (POE). The current number of customers served is 209 and the system is approved to serve 220 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #6, P03.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Jamison Park Well #6, P03 (Samples collected 2/11/14)	150	4.9	0.6	0.02
Jamison Park Well #6, P03 (Samples collected 3/8/16)	150	5.5	0.28	0.000
Jamison Park Well #6, P03 (Samples collected 9/22/16)	150	4.4	0.13	0.055

Page Two
Jamison Park Subdivision Well #6, P03
December 21, 2016

Jamison Park Well #6, P03 (Samples collected 12/13/16)	150	4.3	0.24	0.074
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Updated field samples were collected on December 13, 2016, and the results are shown in the table above.

Flushing

The Jamison Park water system was last flushed December 19, 2016. The next scheduled flushing is December 2017.

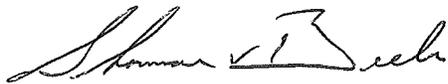
Customer Complaints

Aqua received zero customer complaints from the Jamison Park water system since the last update provided in October 2016.

Aqua has no current plans to add further treatment at Well #6. Therefore, based on the updated information provided above including the limited use of this well's supply in coordination with the remaining active wells serving this system, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

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Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Kennebec Farms Subdivision, Wake County
 WSF ID No.: Well #2, P01
 Water System No: NC4092064

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Kennebec Farms Well #2, P01. The Kennebec Farms water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 164 and the system is approved to serve 173 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Kennebec Farms, Well #2, P01 (Samples collected on 4/6/15)	20	1.6 Zero hours run time since May 2016	1.16	0.2

Page Two
Kennebec Farms Subdivision, Well #2, P01
December 21, 2016

System Flushing

The Kennebec Farms water system is flushed on an annual basis with the most recent flushing occurring in October 2016.

The hydropneumatic tank was cleaned in October 2015.

Discolored Water Complaints

In the update provided August 2016, Aqua reported one customer complaint from the Kennebec Farms water system between August 2015 and August 2016. Aqua has received no discolored water complaints since August 2016.

Corrective Actions

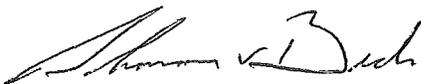
Analysis of the iron and manganese levels reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2013. Aqua has flushed the distribution system numerous times over the past three years and will continue to flush the distribution system on an annual basis and continue to optimize the sequestration at each well.

The Kennebec Master water system contains two other wells - Stamey's Walk Well #1 and Westmore Well #1, and both have greensand filtration. In addition, a Harmsco particulate filter was installed at Kennebec Well #2 in September 2015. Because system demand is adequately met consistently with the two other wells in the system, Aqua does not recommend any additional treatment at Well #2, which remains offline. Aqua will continue to manage the run times at Kennebec Well #2 to a minimum and continue to exercise the well regularly in the event a back-up well is needed, the well will be ready for use if it needs to be placed into service.

Aqua requests that the requirement to submit further quarterly status reports for this well be discontinued.

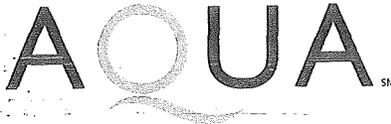
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919)653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
Iron and Manganese Concentration
Middle Creek Acres Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC0392370

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Middle Creek Acres Well #1, P01. The Middle Creek Acres water system is comprised of one active well and one point of entry (POE). The current number of customers served is 12 and the system is approved to serve 23 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Middle Creek Acres, Well #1, P01 (Samples collected on 11/12/14)	Not specified, currently 15 gpm.	1.6	1.13	ND

Middle Creek Acres Subdivision, Well #1, P01
December 21, 2016

TABLE 2: Turbidity Analyses

Well Name and No.	Date	Raw Turbidity (NTU)	Entry Point Turbidity (NTU)
Middle Creek Acres, Well #1, P01	7/29/16	26	17
Middle Creek Acres, Well #1, P01	9/14/16	27	8.5
Middle Creek Acres, Well #1, P01	11/10/16	20	17

System Flushing

The Middle Creek Acres water system is flushed on an annual basis with the most recent flushing being the week of October 6, 2016.

Discolored Water Complaints

As of the update provided August 10, 2016, Aqua had received no customer complaints from the Middle Creek Acres water system in the past 12 months. Aqua did receive one discolored water complaint on October 10, 2016, which occurred during the week the system was being flushed.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated levels of iron concentration and no manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Samples for turbidity were collected from the wellhead and from the point of entry and are shown in the table above. These samples will continue to be collected on a quarterly basis. Based on these results shown, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

In October 2016, Aqua installed an automatic blow off that flushes the water from the well to the ground for a period of time before the water enters the distribution system. Aqua continues to test the effectiveness of this flushing valve and adjusting the time to optimize the water quality. In addition, the SeaQuest feed rate has been increased, which is based on more recent inorganic analyses. Considering the lack of customer complaints, Aqua will continue to test turbidity and monitor the system for water quality complaints before pursuing cartridge filter installation.

Middle Creek Acres Subdivision, Well #1, P01
December 21, 2016

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919)653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Northgate Subdivision, Wake County
 WSF ID No.: Well #1, P01
 Water System No: NC0392217

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Northgate Well #1, P01. The Northgate water system is comprised of one active well and one point of entry (POE). The current number of customers served is 30 and the system is approved to serve 39 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Northgate, Well #1, P01 (Samples collected on 5/24/2016)	Not Specified	1.1	1.43	0.393
Northgate, Well #1 PO1 (Samples collected on 9/1/16)		.8		POE 0.75 NTU

Page Two
Northgate Subdivision, Well #1, P01
December 21, 2016

System Flushing

The Northgate water system is flushed on an annual basis. Below are dates the water system was flushed in the last three years:

- August 2014
- September 2015
- September 2016

Discolored Water Complaints

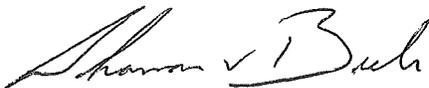
Aqua received one customer complaint from the Northgate water system since the update provided in August 2016.

Corrective Actions

Analysis reveals the well has elevated concentration levels of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua collected a special sample for turbidity from the point of entry and the result is show in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. However, Aqua is concerned that the GAC filter currently installed may be slowly becoming blinded by the insoluble iron. Aqua is planning to collect total/soluble analysis for iron and manganese early in the first quarter of 2017 and will use the results of these samples to properly size a cartridge filter, which Aqua intends to have installed and online by March 2017. Aqua will request approval from the North Carolina Utilities Commission for a manganese dioxide filter in December 2016.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

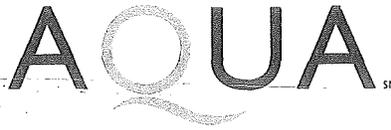


Shannon V. Becker
President

SVB/rl

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Sep 19 2018



Shannon V. Becker, President

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December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Northwood Subdivision, Durham County
 WSF ID No.: Well #2, P02
 Water System No: NC0368179

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Northwood Well #2, P02. The Northwood water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 81 and the system is approved to serve 82 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Northwood, Well #2, P02 (Samples collected on 4/08/2014)	41	0	2.26	0.281
Northwood, Well #2, PO2 (Samples collected on 10/13/16)	41	0	0.606	0.262

Page Two
Northwood Subdivision, Well #2, P02
December 21, 2016

System Flushing

The Northwood water system was most recently flushed in May 2016 and will be flushed on an annual basis.

Discolored Water Complaints

Aqua has received no customer complaints from the Northwood water system since last the update provided in August 2016.

Corrective Actions

Analysis reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in August 2015. Since August 2015, Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. We will manage the run times at this well to a minimum and continue to exercise the well regularly in the event a back-up well is needed, the well will be ready for use if it needs to be placed into service. Aqua has collected samples for iron and manganese and the results are shown in the table above. Aqua plans to install a cartridge filter by March 2017. Once the cartridge filter is installed, Aqua will collect quarterly turbidity samples to determine the effectiveness of SeaQuest. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Olde South Trace Subdivision, Wake County
 WSF ID No.: Well #1, P01
 Water System No: NC4392131

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Olde South Trace Well #1, P01. The Olde South Trace water system is comprised of one active well and one point of entry (POE). The current number of customers served is 30 and the system is approved to serve 32 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Olde South Trace, Well #1, P01 (Samples collected on 7/16/16)	34	1.9	1.33	0.3
Olde South Trace, Well #1, P01 (Samples collected on 11/11/16)	34	2		POE = 7.6 NTU

Page Two
Olde South Trace Subdivision, Well #1, P01
December 21, 2016

System Flushing

The Olde South Trace water system is flushed on an annual basis. Below are the dates the water system was flushed in the last three years. Also, the Olde South Trace water system is scheduled to be flushed the week of December 26, 2016.

- August 2014
- October 2014
- December 2015
- December 2016

Discolored Water Complaints

Aqua has received zero complaints from the Olde South Trace water system since the last update provided in August 2016.

Corrective Actions

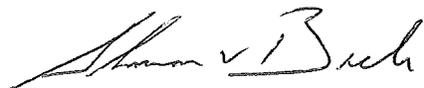
Analysis reveals the well has elevated concentrations of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in July 2014. Aqua has committed to flushing the distribution system annually and will continue to flush the distribution system at this reoccurring frequency.

Aqua collected a special sample for turbidity on November 11, 2016, from the point of entry and the result is shown in the table above. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. Based on these results, Aqua plans to install a cartridge filter by the end of the first quarter 2017. Once the filter is installed, we will collect samples for turbidity and evaluate the effectiveness of the cartridge filter and SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Red Mountain Subdivision, Durham County
 WSF ID No.: Well #2, P02
 Water System No: NC0332136

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated February 24, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Red Mountain Well #2, P02. The Red Mountain water system is comprised of 3 active well and 3 points of entry (POE). The current number of customers served is 64 and the system is approved to serve 117 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

UPDATE QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Red Mountain, Well #2 P02 (Samples collected April 22, 2014)	22	1.9	0	0.077
Red Mountain Well #2 P02 (Samples collected March 10, 2016)	22	2.11	0.022	0.0012

Page Two
Red Mountain Subdivision, Well #2, P02
December 21, 2016

Red Mountain, Well #2, P02 (Samples collected September 21, 2016)	22	2.14	.038	.06
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Updated samples were collected September 21, 2016 and the results are shown in the table above.

System Flushing

The Red Mountain water system was most recently flushed in July 2016 and will be flushed on a bi-annual basis.

Discolored Water Complaints

Aqua received one discolored water complaint since the updated provided in August 2016.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has very low concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua switched from OP37 to feeding SeaQuest in October 2015.

Based on the most recent sample results collected from Well #2, Aqua requests that the requirement to submit further quarterly status reports for this entry point be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

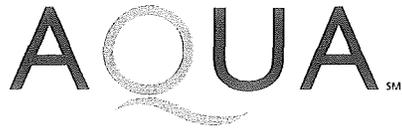


Shannon V. Becker
President

SVB/rl

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Red Mountain Subdivision, Durham County
 WSF ID No.: Well #3, P03
 Water System No: NC0332136

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Red Mountain Well #3, P03. The Red Mountain water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 64 and the system is approved to serve 117 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

UPDATE QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Red Mountain, Well #3 P03 (Samples collected April 20, 2014)	80	2.11	1.6	2.0
Red Mountain Well #3 P03 (Samples Collected Sept 20, 2016)	80	3.0	0.03	0.06

Page Two
Red Mountain Subdivision, Well #2, P02
December 21, 2016

Updated samples were collected September 20, 2016 and the results are shown in the table above.

System Flushing

The Red Mountain water system was flushed in July 2016 and will be flushed again in July 2017.

Discolored Water Complaints

Aqua has received zero discolored water complaints since the last update provided in August 2016.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua switched from OP37 to feeding SeaQuest in October 2015. A field test of raw and point of entry for Fe and Mn was performed on March 20, 2016 at Well #3. The raw water results showed Fe at 0.044 mg/L and Mn at 0.0033 mg/L. The point of entry results showed Fe at 0.019 mg/L and Mn at 0.0017 mg/L. Aqua collected an IOC sample on September 20, 2016 and the results are shown in the table above.

Based on the most recent sample results collected from Well #3 Aqua requests that the requirement to submit further quarterly status reports for this entry point be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

OFFICIAL COPY

Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 River Oaks Subdivision, Wake County
 WSF ID No.: Well #3, P02
 Water System No: NC0392096

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at River Oaks Well #3, P02. The River Oaks water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 47 and the system is approved to serve 47 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P02.

UPDATED QUARTERLY REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 5/31/16	
	Approved		Fe (mg/L)	Mn (mg/L)
River Oaks, Well #3, P02 (Samples collected Collected 05/31/2016)	50	0	1.0	.077
River Oaks, Well #3, P02 (Samples collected Collected 12/5/2016)	50	0.20	Raw 13 NTU	POE 13 NTU

Page Two
River Oaks Subdivision, Well #3 P02
December 21, 2016

System Flushing

The River Oaks water system is flushed on an annual basis with the most recent flushing being June 28 through June 30, 2016.

Discolored Water Complaints

Aqua received one customer complaint from the River Oaks water system between August 2015 and August 2016 and no customer complaints since the update provided in August 2016.

Corrective Actions

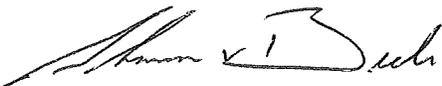
Analysis of the iron and manganese levels reveals the well has elevated concentrations of iron and manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Well #3 will operate in the lag mode and will only be used during heavy peak demand. Samples have been collected for turbidity from the raw water and from the point of entry. The results of the samples are reflected in the table above. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the well operating in a lag mode and the low customer complaints received since August 2015, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

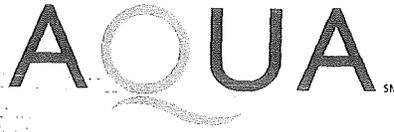
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Saddleridge Subdivision, Wake County
 WSF ID No.: Well #20, P20
 Water System No: NC4392103

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Saddleridge Well #20, P20. The Saddleridge water system is comprised of six active wells and five points of entry (POE). The current number of customers served is 169 and the system is approved to serve 194 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #20, P20.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Saddleridge, Well #20, P20 (Samples collected on 4/14/15)	5	8.14	4.5	.032
Saddleridge, Well #20, P20 (Samples collected on 11/11/2016)	5	5.5	Raw=38 NTU	POE=25 NTU

Page Two
Saddleridge Subdivision, Well # 20 P20
December 21, 2016

System Flushing

The Saddleridge water system is flushed on an annual basis with the most recent flushing occurring June 20 through June 24, 2016. Aqua will continue to flush the distribution system annually.

Discolored Water Complaints

Aqua received two customer complaints from the Saddleridge water system since August of 2015 and no water quality complaints since the last update in August 2016.

Corrective Actions

Analysis reveals the well has an elevated concentration of iron at Well #20. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in February 2016. The pressure settings at Well #20 has been changed to allow the well to operate in lag mode. A cartridge filter was installed at this well on December 20, 2016. Aqua will continue to flush the distribution system annually. We will continue to monitor quarterly turbidity samples to evaluate the effectiveness of this filter. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest and the cartridge filter.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

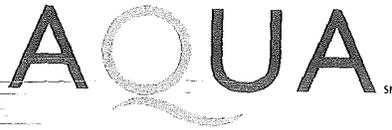


Shannon V. Becker
President

SVB/rl

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Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Shadow Lakes Subdivision, Johnston County
 WSF ID No.: Well #1, P01
 Water System No: NC0351167

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Shadow Lakes Well #1, P01. The Shadow Lakes water system is comprised of one active well and one point of entry (POE). The current number of customers served is 41 and the system is approved to serve 49 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Shadow Lakes Well #1, P01 (Samples collected on 10/7/2014)	68	4.0	1.06	0.267

Page Two
Shadow Lakes Well #1, P01
December 21, 2016

System Flushing

Below are dates the Shadow Lakes water system has been flushed in the last three years:

- October 2013
- June 2015
- June 2016

Discolored Water Complaints

As of the update provided August 10, 2016, Aqua had received no customer complaints from the Shadow Lakes water system in the last 12 months. There have been no customer complaints received since that update.

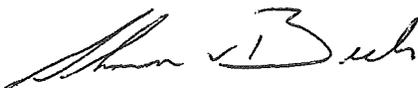
Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in August 2015. By Order dated March 1, 2016, from the North Carolina Utilities Commission, Aqua received approval to install a filtration system at Well #1, which is scheduled to be completed in December 2017. Aqua will continue to flush the Shadow Lakes water system on a regular basis until the installation of the filtration system is complete. Aqua will continue to optimize the sequestration treatment at the well and monitor the system for customer complaints.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919)653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Southwood-Surry Ridge Subdivision, Wake County
 WSF ID No.: Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03
 Water System No: NC0392338

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03. The Southwood-Surry Ridge water system is comprised of these two active wells and two points of entry (POE); a new Surry Point Well #3 was just re-drilled to serve this system, but is currently off-line. The current number of customers served is 121 and the system is approved to serve 154 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Southwood Well #1 P01 and Cary Oaks Well #3 P03.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Southwood Well #1 P01 (Samples collected in April 2014)	27	16.2	1.1	0.6

Southwood- Surry Ridge Subdivision, Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03
 December 21, 2016

Cary Oaks Well #3 P03 (Samples collected in April 2014)	40	2.5	1.39	0.1
Southwood Well #1 P01 (Samples collected 9/1/2016)	27	18	Raw = 1.1 NTU	
Cary Oaks Well #3 P03 (Samples collected 11/3/2016)	40	8.5		POE = 13.0 NTU

System Flushing

The Southwood-Surry Ridge water system was flushed most recently in June 2016. This system will be flushed on an annual basis going forward.

Discolored Water Complaints

Aqua received three customer complaints from the Southwood-Surry Ridge water system between August 2015 and August 2016. Since the August 2016 update, Aqua has received one complaint for discolored water.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #1 (Southwood) and Well #3 (Cary Oaks). In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in August 2013. Currently, Southwood Well #1 has a cartridge filter. Samples were collected from Well #1 on September 1, 2016, and from Well #3 on November 3, 2016, but the sample kit order was incorrect and only the raw sample for turbidity was collected at Well #1 and only a POE turbidity sample was collected from the entry point at Well #3. Aqua will continue to sample quarterly for turbidity at each well to optimize treatment. Aqua is using a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

In December 2016, Aqua is requesting approval from the North Carolina Utilities Commission for a manganese oxide filter to be installed on the Surry Point Well #3, which, if approved, should be online in 2017. Once this is complete Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03 will be placed in a backup mode of operation. In the event a back-up well is needed, both wells will be ready for use if there is a need for these to be placed in service.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Southwood- Surry Ridge Subdivision, Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03
December 21, 2016

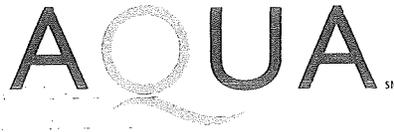
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Stagecoach Subdivision, Wake County
 WSF ID No.: Well #3, P03
 Water System No: NC0392087

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Stagecoach Well #3- P03. The Stagecoach water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 157 and the system is approved to serve 220 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3- P03.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Stagecoach Well #3 P03 (Samples collected on 1/20/15)	85	0	1.13	0.0861
Stagecoach Well #3 P03, (Samples collected on 3/23/16)	85	0	0.774	0.09

Page Two
Stagecoach Well #3, P03
December 21, 2016

System Flushing

The Stagecoach water system is flushed on a bi-annual basis. The water system was flushed in September 2014 and most recently in July 2016.

Discolored Water Complaints

As of the update provided in August 2016, Aqua had received two customer complaints from the Stagecoach water system in the last 12 months. Aqua received one discolored water quality complaint by email on October 17, 2016.

Corrective Actions

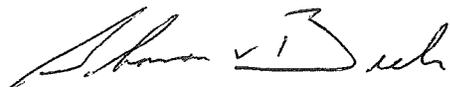
Analysis of the iron and manganese levels reveals the well has elevated concentrations of iron and manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in October 2015. Stagecoach Well #3 does not run on a regular basis because of system demand and is currently operating in back-up mode. Aqua will continue to exercise the well regularly and in the event a back-up well is needed the well will be ready to be placed into service. Field samples collected on March 17, 2016, after the well was adequately flushed showed iron at 0.63 mg/L and manganese at 0.093 mg/L. On March 23, 2016, Aqua collected a compliance IOC sample and the results are shown in the table above. Aqua proposes no further treatment at Well #3.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the updated information provided, Aqua requests that the requirement to submit further quarterly status reports for this well be discontinued.

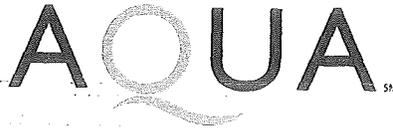
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919)653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency
 Iron and Manganese Concentration
 Trapper's Creek Subdivision, Durham County
 WSF ID No.: Well #2, P02
 Water System No: NC0332132

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Trapper's Creek Well #2, P02. The Trapper's Creek water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 63 and the system is approved to serve 84 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Trappers Creek, Well #2, P03 (Samples collected on 4/15/14)	75	2.4	0.8	0.29
Trappers Creek, Well #2, PO3 (Samples collected on 12/21/2016)	75	1.5	0.0392	0.0023

Page Two
Trapper's Creek Subdivision, Well #2, P02
December 21, 2016

System Flushing

The Trappers Creek water system is flushed on an annual basis with the most recent flushing being in May 2016.

Discolored Water Complaints

Aqua received seven discolored water complaints from Trapper's Creek water system since August 2015, two of which were received since the update in August 2016.

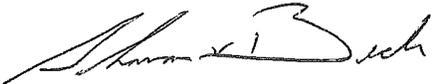
Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in February 2016. Since then Aqua has begun annual flushing of the distribution system and will continue to flush the distribution system at this reoccurring frequency while continuing to optimize the sequestration at each well and monitoring for customer complaints. On December 21, 2016, Aqua collected field measurements for iron and manganese at Well #2. As shown in the table above the results show low iron and manganese concentrations. Aqua will collect a new compliance IOC sample in April 2017.

Based on the low results received for iron and manganese, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

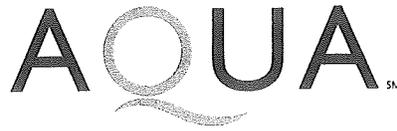
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency
 Iron and Manganese Concentration
 Tyndrum Subdivision, Durham County
 WSF ID No.: Well #1, P01
 Water System No: NC0332138

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Tyndrum Well #1, P01. The Tyndrum water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 37 and the system is approved to serve 49 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 4/10/14	
	Approved		Fe (mg/L)	Mn (mg/L)
Tyndrum, Well #1, P01 (Samples collected on 4/10/14)	17	1.4	1.3	0.4

System Flushing

The Tyndrum water system is flushed on an annual basis and was flushed in May 2016. The next scheduled flushing is May 2017.

Page Two
Tyndrum Subdivision, Well #1, P01
December 21, 2016

Discolored Water Complaints

Aqua has received zero customer complaints from the Tyndrum water system since the last update in August 2016.

Corrective Action

Analysis reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in February 2016. Since Aqua began feeding SeaQuest, the distribution system has been flushed annually and we will continue to flush the distribution system at this reoccurring frequency.

Aqua planned to collect special samples for turbidity beginning in September 2016; however the well has been offline. The well will be placed back into service in the first quarter of 2017 at which time the turbidity samples will be taken. An analysis of these samples will be used to properly install a cartridge filter which is expected to be installed near the end of the first quarter of 2017.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

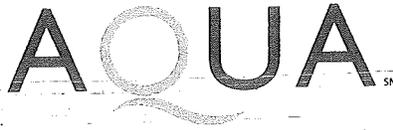


Shannon V. Becker
President
Aqua North Carolina, Inc.

SVB/rl

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Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Upchurch Place Subdivision, Wake County
 WSF ID No.: Wells #1 and Well #4, P01
 Water System No: NC4092038

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Upchurch Place Wells #1 and Well #4, P01. The Upchurch Place water system is comprised of two active wells and one point of entry (POE). The current number of customers served is 52 and the system is approved to serve 64 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Wells #1 and Well #4, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 3/13/2013	
	Approved		Fe (mg/L)	Mn (mg/L)
Upchurch Place, Well #1 and Well #4, P01 (Samples collected on 3/13/2013)	#1 – 62 #4 – 27	#1 – 1.7 #4 – 0	1.0	0.177

Page Two
Upchurch Place Subdivision, Wells # 1 & 4, P01
December 21, 2016

Special Sampling

- Well #1 – 10/26/2015 – total iron 0.263 mg/L, total manganese 0.128 mg/L
- Well #1 – 9/16/2015 – total iron 0.635 mg/L, total manganese 0.150 mg/L
- Well #4 – 9/16/2015 – total iron 0.891 mg/L, total manganese 0.176 mg/L
- Well #1 – 6/29/2016 – total iron 0.325 mg/L, total manganese 0.134 mg/L

System Flushing

The Upchurch water system is flushed on an annual basis, and was most recently flushed August 10 and 11, 2016. Below are dates the water system was flushed in the last four years.

- July 2013
- July and December 2014
- August and November 2015
- August 2016

The hydropneumatic tank was cleaned in November 2015.

Discolored Water Complaints

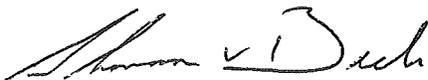
In the update provided in August 2016, Aqua reported we had received eleven customer complaints from the Upchurch water system between August 2015 and August 2016. Since August 2016, Aqua has received six customer complaints regarding discolored water.

Corrective Actions

Analysis reveals the well has an elevated concentration of iron and manganese at Well #1 and Well #4. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in March 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Well #1 is supplying all the water to the system at this time, and Aqua only runs Well #4, which has the higher concentration of iron, when compliance sampling is needed. Aqua will continue to flush the system on an annual basis and optimize the current treatment. Aqua and the Public Staff continue to work together to seek approval for greensand filtration at this entry point.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919)653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Wakefield Plantation Subdivision, Wake County
 WSF ID No.: Well #6, P06
 Water System No: NC0392155

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Wakefield Well #6, P06. The Wakefield water system is comprised of four active wells and four points of entry (POE). The current number of customers served is 160 and the system is approved to serve 174 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #6, P06.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling	
	Approved		Fe (mg/L)	Mn (mg/L)
Wakefield Well #6, P06 (Samples collected on April 25, 2016)	88	6.8	1.53	.23
Wakefield Well #6, P06 (Samples collected on Dec 21, 2016)	88	3.9 Aug – Nov, 2016	1.72	.27

Page Two
Wakefield Plantation Subdivision, Well #6, P06
December 21, 2016

System Flushing

The Wakefield Plantation water system is flushed on an annual basis and was most recently flushed in April 2016. The hydropneumatic tanks were cleaned in March 2013.

Discolored Water Complaints

Aqua received three customer complaints from the Wakefield Plantation water system from August 2015 to August 1, 2016. Aqua has received six customer complaints since the update provided in August 2016.

Corrective Actions

Analysis reveals the well has elevated iron and manganese concentration levels at Well #6. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in October 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. By Order dated March 1, 2016, from the North Carolina Utilities Commission Aqua received approval for the installation of a filtration system at Well #6 and Well #8. Aqua estimates the filters will be installed by the fourth quarter 2017. Aqua will continue to optimize the liquid phosphate treatment and begin implementation of collecting turbidity samples quarterly for the first three quarters of 2017, at this entry point.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,

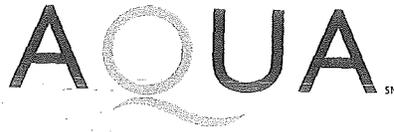


Shannon V. Becker
President

SVB/rl

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Sep 19 2018



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 West Oaks Subdivision, Wake County
 WSF ID No.: Well #1, P01
 Water System No: NC0392357

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at West Oaks Well #1, P01. The West Oaks water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 237 and the system is approved to serve 246 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 8/13/15	
	Approved		Fe (mg/L)	Mn (mg/L)
West Oaks, Well #1, P01 (Samples collected on 8/13/15)	60	6.4	0.85	0.44
West Oaks, Well #1 PO1 (Samples collected on 12/13/2016)	60	3	0.02	0.003

Page Two
West Oaks Subdivision, Well #1, P01
December 21, 2016

System Flushing

The West Oaks water system was flushed in October 2015 and most recently in March 2016 and will be flushed on an annual basis going forward.

The hydropneumatic tank was cleaned in the second quarter 2015.

Discolored Water Complaints

Aqua received 26 customer complaints from the West Oaks water system from January through June 2016. Since the installation of the filters in September 2016, Aqua has received two customer complaints for discolored water. To help further reduce the number of complaints, Aqua will schedule a complete system flush the second quarter of 2017.

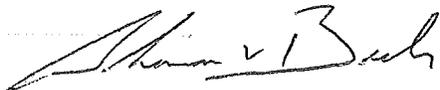
Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #1. In an effort to ensure the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. By Order dated May 21, 2015, from the North Carolina Utilities Commission Aqua received approval for the installation of a filtration system at West Oaks Well #1 and Springfield North Well #1 and #2. The filters were installed in September 2016 and are currently online.

Based on the effectiveness of the new filters installed in September 2016, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

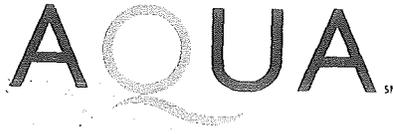
Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl



Shannon V. Becker, President

O: 919.653.5770 • F: 919.460.1788 • SVBecker@AquaAmerica.com

December 21, 2016

Mr. W. Allen Hardy
 Engineering Supervisor
 Public Water Supply Section
 Raleigh Regional Office, NCDEQ
 1628 Mail Service Center
 Raleigh, NC 27699-1628

Re: Notice of Deficiency – Quarterly Update
 Iron and Manganese Concentration
 Willow Hill Subdivision, Durham County
 WSF ID No.: Well #3, P03
 Water System No: NC0332119

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Willow Hill Well #3, P03. The Willow Hill water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 131 and the system is approved to serve 147 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

UPDATED QUARTERLY STATUS REPORT

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm)	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
	Approved		Fe (mg/L)	Mn (mg/L)
Willow Hill, Well #3, P03 (Samples collected on 10/16/14)	35	0	0.7	0.4
Willow Hill, Well #3, PO3 (Samples collected 12/7/16)	35	0		POE = 0.50 NTU

Page Two
Willow Hill Subdivision, Well #3, P03
December 21, 2016

System Flushing

The Willow Hill water system is flushed on a bi-annual basis and was most recently flushed in November 2015.

Discolored Water Complaints

Aqua received no customer complaints from the Willow Hill water system since the update provided in August 2016.

Corrective Actions

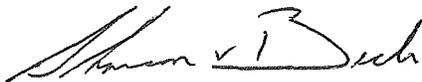
The analysis reveals the well has elevated concentrations of iron and manganese at Well #3. This well does not run on a regular basis because of limited system demand and operates in a back-up mode. In the event a back-up well is needed, the well will be ready for use if it needs to be placed into service. In an effort to ensure that the drinking water is not discolored due to the presence of the minerals, Aqua began feeding SeaQuest in February 2016. Since then Aqua has flushed the distribution system bi-annually and will continue to flush at this reoccurring frequency. Aqua has collected a special sample for turbidity at the point of entry and the results are shown in the table above.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intention of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Based on the limited run time of this well and the corresponding turbidity result, Aqua requests that the requirement to submit further quarterly status reports be discontinued.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Moses Thompson at (919) 653-6964.

Sincerely,



Shannon V. Becker
President

SVB/rl