

A. EXECUTIVE SUMMARY

Aqua proposes interconnecting Wells #1&7 and installing an AdEdge Iron (Fe) and Manganese (Mn) filter system to treat the combined flow at Carlyle Manor Well #1, P49. This system is part of the Bayleaf Master System comprised of 122 active wells and 117 points of entry (POEs). **Mn levels at well #7 are greater than 0.3 mg/L which makes it one of Aqua's Group 1 Priority Secondary Water Quality Projects as per the Water Quality Plan.** The latest Mn concentration at the POE was 0.472 mg/L as of 7/16/2018. Based on studies performed by AWWA and other organizations, elevated concentrations of Mn are being linked to cause adverse health effects. Preliminary engineering studies indicate that Green Sand filtration is the most effective and permanent solution since it physically removes Fe and Mn.

B. PROPOSED SYSTEM REQUIRING TREATMENT

1. System Name: Bayleaf Master-Carlyle Manor Wells #1&7
2. PWS ID: NC 03-92-373
3. No. Customers Being Served: 6,072
4. No. Customers at Build Out: 6,356
5. List of DEH/PWSS Approved Wells and Storage

TABLE 1: Approved and Active Wells in Proposed System

Well Name and No.	Capacity (GPM)				Max, Avg., Min Pump Runtime (hrs./day)	**Latest POE Inorganic Sampling Results						
	App.	Max, Avg., Min from Past 3 Years				Fe (mg/L)***	Mn (mg/L)	Fe/Mn Loading Rate (lbs./day)	Fe/Mn Loading Rate (lbs./yr.)	Average Fe/Mn Loading Rate Per Residential Customer (lbs./yr.)		
#1, P49	73	Inactive*			Inactive*			0.746	0.159	~0.6 (if operated)	~214	~0.85
#4, P3B	44	52	36	12	21	9	1	0.935	0.566	~0.3	~91	~0.4
#6, P60	86	68	55	31	21	10	4	0.0595	0.290	~0.1	~35	~0.14
#7, P1D	165	101	102	67	21	9	3	0.496	0.472	~0.4	~126	~0.5

*Taken offline due to unacceptable water quality

**Loading rates based on 12-hour runtimes if well is offline due to poor water quality, as in the case of well #1 above.

***Raw samples are taken directly at the wellhead before chemical treatment and point of entry (POE) samples are taken after chemical injection and treatment but before the tank and distribution system.

Figure 1. Proposed water supply main from Carlyle Manor #7 to #1 with consolidated filtration at Well #1

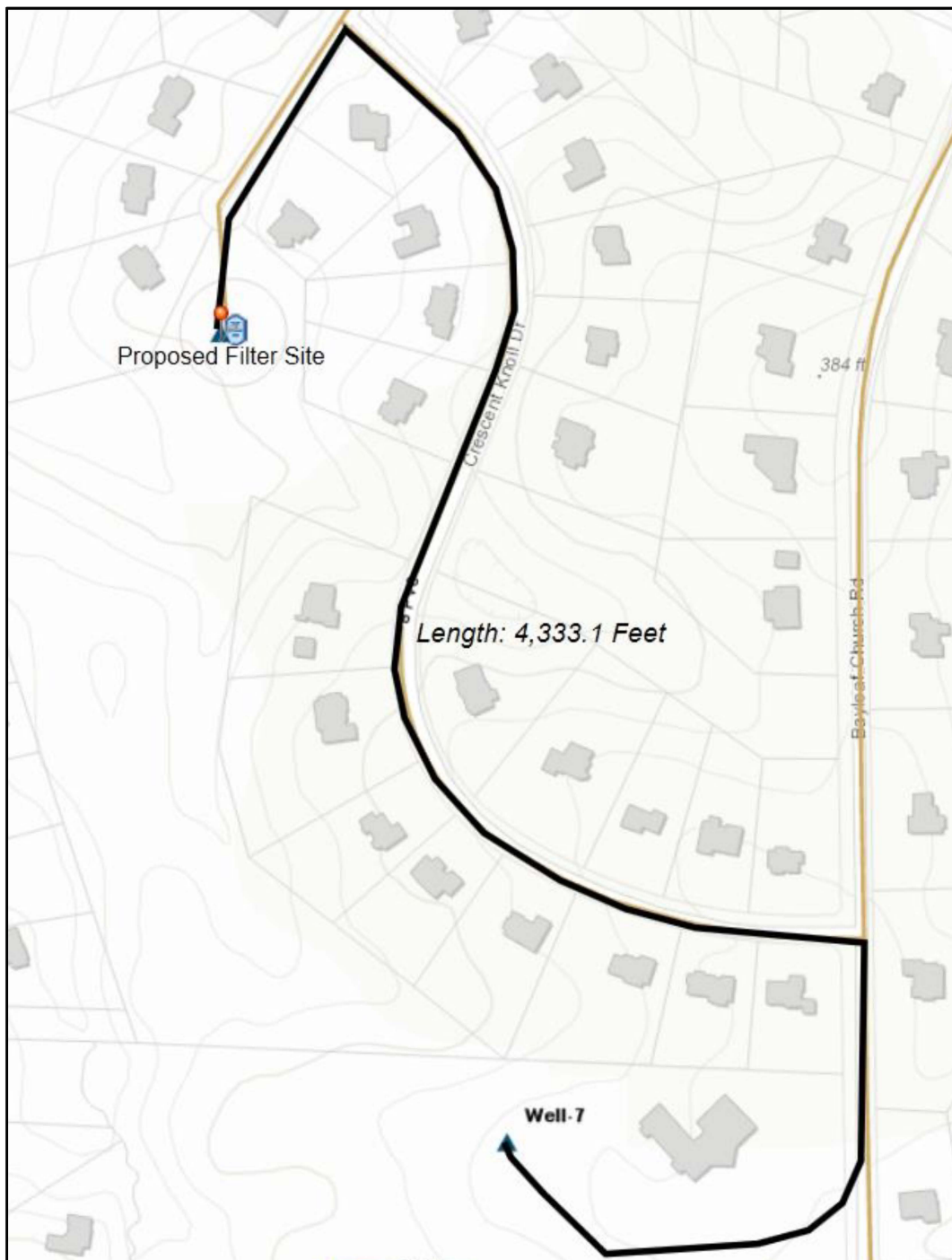


TABLE 2: Existing Storage at Well Sites

Well Name and No.	Storage Description		Most Recent Cleaning Date	
	Type	Gallons	Tank	Dist. System
Bayleaf System	Elevated	1,750,000	2012	Feb. 2018
Bayleaf System	Hydro	10,000		Feb. 2018
Bayleaf System	Ground	104,500		Feb. 2018

*These wells use existing storage in Bayleaf Master System.

6. Past Three (3) Years Flushing Occurrences, list month/year:

Response: March 2017, February 2018, March 2019.

7. Next Planned Distribution System Flushing Occurrence

Response: March 2020.

8. List of chemicals being used:

TABLE 3: Existing Chemicals Used at Well Site

Well Name and No.	Chemical Description			
	Cl ₂	OP-37	NaOH	SeaQuest
#1, P49	X	N/A	N/A	X
#4, P3B	X	N/A	N/A	X
#6, P60	X	N/A	N/A	X
#7, P1D	X	N/A	N/A	X

9. Current description of the water treatment system for each well over the past three (3) years, including specific names of chemicals and dates of changes:

Response: Well #7 switched from OP 37 to SeaQuest in August 2015 and wells #4&6 switched in October 2015 to sequester the Fe and Mn and clean the distribution lines, as well as to prevent further mineral accumulation on the pipe walls. Started distribution and POE total and soluble sampling in September 2017 and added raw sampling in December 2017. Aqua removed the Harmsco particulate cartridge filter at Well #4 once Fe/Mn filtration was brought online in September 2019. Aqua will continue to flush distribution system annually.

10. Planned changes (if any) for chemical treatment within the next six (6) months:

Response: None.

11. Comments on Approved/Current Well Capacity.

Response: None.

C. CURRENT SECONDARY WATER QUALITY CONCERNS

1. How many wells require treatment? 2*
2. Can system operate with single well offline? No*

* Based on the historical demands of the Bayleaf Master System, every well is required to meet demand. Subsequently, the production from Carlyle Manor Wells #1&7 is required and cannot be taken offline or remain offline.

3. Are combined Fe/Mn concentrations above 1 mg/L or Mn above 0.3 mg/L? Yes*

*The latest POE Mn concentration at Well #7 is 0.472 mg/L.

4. Date of most recent POE Fe/Mn sampling results 7/16/2018

TABLE 4: Most Recent Fe/Mn Inorganic Analysis at Wells #1&7

Well #1 Laboratory Analysis						
Date	Iron (Fe) POE, mg/L			Manganese (Mn) POE, mg/L		
	Tot.	Sol.	Insol.	Tot.	Sol.	Insol.
8/4/2014	0.441			0.161		
7/21/2017	0.746			0.159		
Well #7 Laboratory Analysis						
Date	Iron (Fe) POE, mg/L			Manganese (Mn) POE, mg/L		
	Tot.	Sol.	Insol.	Tot.	Sol.	Insol.
4/22/2014	0.087			0.585		
4/17/2017	0.514			0.486		
7/16/2018	0.496	0.0976	0.398	0.472	0.444	0.028
7/16/2018 (Raw)	0.418	<0.0220	~0.418	0.474	0.462	0.012
Well #4 Laboratory Analysis						
Date	Iron (Fe) POE, mg/L			Manganese (Mn) POE, mg/L		

	Tot.	Sol.	Insol.	Tot.	Sol.	Insol.
1/5/2018	0.766	<0.0220	0.766	0.584	0.543	0.041
2/2/2018	0.647	<0.0220	0.647	0.531	0.437	0.094
3/2/2018	0.57	0.0511	0.5189	0.582	0.484	0.098
4/6/2018	1.03	<0.0220	1.03	0.637	0.413	0.224
5/1/2018	0.623	0.00974	0.61326	0.556	0.46	0.096
6/11/2018	1.00	<0.0220	1.00	0.684	0.609	0.075
7/8/2018	1.08	<0.0220	1.08	0.683	0.584	0.099
8/5/2018	0.993	0.19	0.803	0.599	0.539	0.06
9/7/2018	1.15	0.137	1.013	0.594	0.58	0.014
10/5/2018	0.889	0.23	0.659	0.592	0.525	0.067
11/5/2018	1.01	< 0.022	1.01	0.647	0.635	0.012
1/11/2019	0.989	0.0238	0.989	0.574	0.555	0.019
2/11/2019	0.935	0.293	0.642	0.566	0.525	0.041
Fe/Mn Filter Place Online on 9/17/2019						
Well #6 Laboratory Analysis						
Date	Iron (Fe) POE, mg/L			Manganese (Mn) POE, mg/L		
	Tot.	Sol.	Insol.	Tot.	Sol.	Insol.
8/4/2014	0.1440			0.314		
7/10/2017	0.0595			0.290		

5. Describe previous actions to improve secondary water quality and describe results (i.e.; installation of particulate filters and sequestering agents).

Response: The system switched from OP 37 to SeaQuest in August and October 2015 to sequester the Fe and Mn. Flushed distribution system annually since 2011 and will continue to flush water mains annually. Aqua began collecting and testing POE total and soluble sampling in Sept. 2017 and the most recent results are noted in Table 4 above. The intent of the sequestering agent is to physically chelate or hold Fe and Mn in a soluble state, ideally decreasing the insoluble concentration and resolving water discoloration issues. Because Fe usually reaches the surface in mostly an insoluble state, it is very challenging to convert insoluble Fe back into a soluble state unless the chemical dose of the sequestering agent is increased heavily. Also, sufficiently long contact time is a necessary criterion to make this

happen. Aqua installed a Harmsco particulate cartridge filter in June 2017 but no real reduction in total or insoluble Fe and Mn has been observed. Because sequestering does not physically remove Mn, Aqua is concerned that its efforts to reduce total Mn will not be effective without adding a Fe/Mn treatment system or equivalent treatment system such as those using solid phase Manganese Dioxide.

D. UTILITY COMMISSION REQUIRED INFORMATION

- | | |
|---|-----------------|
| 1. Well Location Map | <u>Attached</u> |
| 2. DEH/PWS Approval Letter | <u>Attached</u> |
| 3. Original 24 hr. Pump Status Report | <u>Attached</u> |
| 4. Past 36 months of pump status reports | <u>Attached</u> |
| 5. Inorganic Analysis Report submitted to DEH for well approval | <u>Attached</u> |
| 6. Past 6 yrs. inorganic analysis from each wellhead | <u>Attached</u> |
| 7. Past 3 yrs. Fe/Mn analyses, both soluble and insoluble. | <u>Attached</u> |

Note: For item (6) above, provide information on baseline (w/o treatment – raw samples taken at the well head) and point of entry (after treatment).

E. CUSTOMER COMPLAINT DATA

- | | |
|---|-----------------|
| 1. Total number of customer complaints in past 6 months | <u>6</u> |
| 2. Total number of customer complaints in past 12 months | <u>10</u> |
| 3. For past 6 months, do customer secondary water complaints exceed 10% of the number of active customers? | <u>No</u> |
| 4. Provide 12-month list of all water quality complaints | <u>Attached</u> |
| 5. Provide 12-month list of all completed water quality work orders | <u>Attached</u> |
| 6. Describe most common customer complaint over the past 12-month period relating to secondary water quality, i.e.; discolored water, taste, or odor. | |

Response: Brown, black, and yellow discolored water complaints.

F. PROPOSED SECONDARY WATER QUALITY TREATMENT

- | | |
|---------------------------------------|---|
| 1. Proposed treatment recommendation: | <u>AdEdge Water Technologies Treatment system</u> |
|---------------------------------------|---|

2. Proposed System Cost:

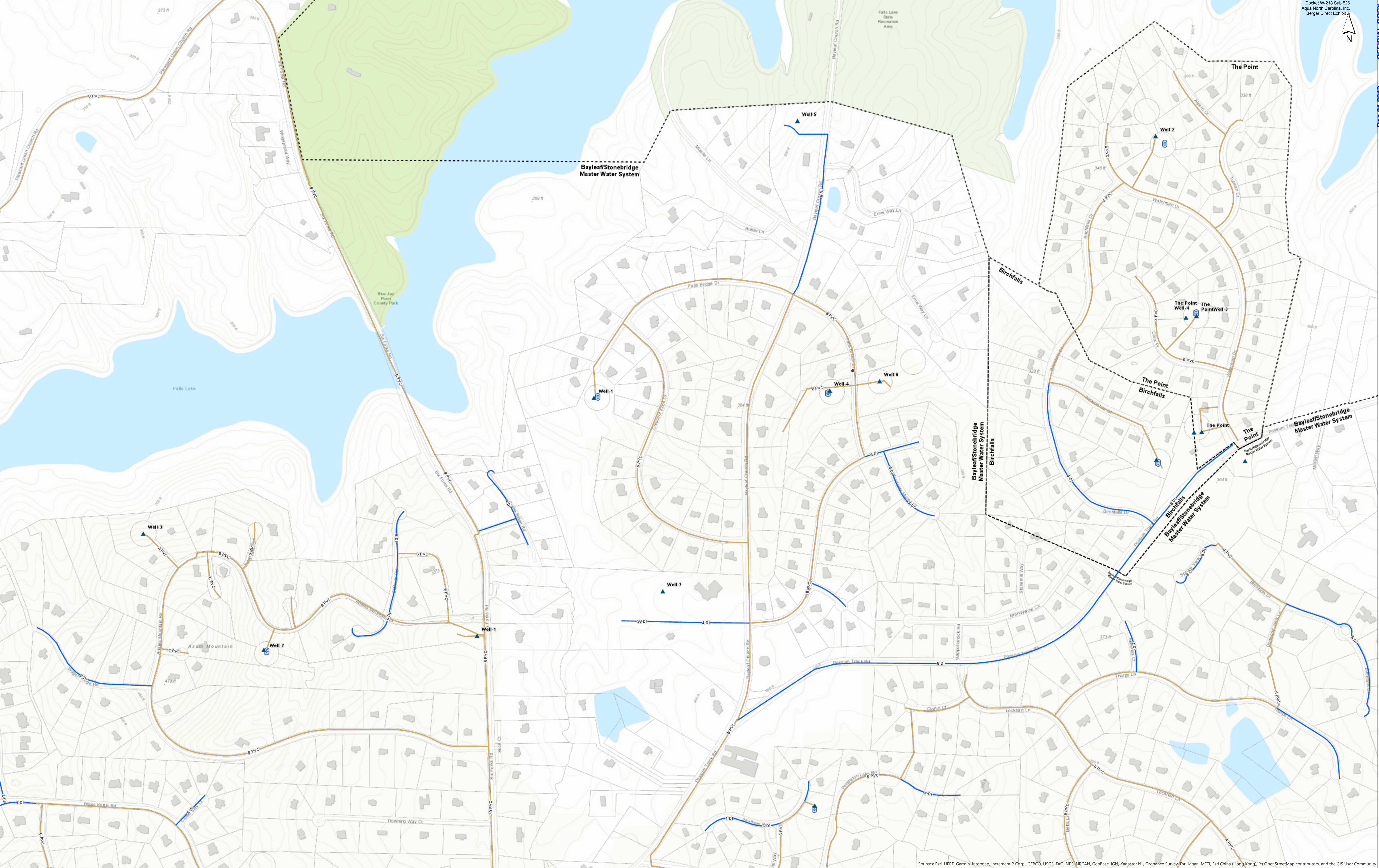
COST ESTIMATE						
Interconnection between Carlyle Manor Well #1&7 and installing filtration at CM #1						
TASK	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	
1	Interconnect Construction	4350	Foot	\$ 45	\$	195,750
2	CM Well #1&7 Filter Skid (includes sales tax and freight cost)	1	LS	\$ 140,800	\$	161,008
3	BW Recycle System (includes sales tax)	1	LS	\$ 50,000	\$	53,625
4	Sludge Management System (includes sales tax)	1	LS	\$ 40,000	\$	42,900
5	Construction of Filter House, Backwash Disposal System, Well House Upgrades (based on costs from similar size projects)	1	LS	\$ 250,000	\$	250,000
6	Engineering, Permitting, Bidding & CA/CO	1	LS	\$ 40,000	\$	40,000
12	Aqua Direct Cost @	5%			\$	37,164.15
13	Contingencies @	5%			\$	39,022.36
TOTAL CAPITAL COSTS:					\$	819,469.51
14	AFUDC @	7%			\$	57,362.87
TOTAL ESTIMATED PROJECT COSTS:						\$ 876,832
COST ESTIMATE						
Construct New Filter Buildings and Install AdEdge Filter Skids at CM #1&7 + Recycle, Sludge Management Systems						
TASK	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	
1	CM Well #1 Filter Skid	1	LS	\$ 100,000	\$	117,250
2	BW Recycle System	1	LS	\$ 30,000	\$	32,175
3	Sludge Management System	1	LS	\$ 20,000	\$	21,450
4	CM Well #7 Filter Skid	1	LS	\$ 111,800	\$	119,906
5	BW Recycle System	1	LS	\$ 30,000	\$	32,175
6	Sludge Management System	1	LS	\$ 20,000	\$	21,450
7	Construction of Filter House, Backwash Disposal System, Well House Upgrades - CM #1	1	LS	\$ 160,000	\$	160,000
8	Construction of Filter House, Backwash Disposal System, Well House Upgrades - CM #7	1	LS	\$ 200,000	\$	200,000

9	Engineering & Construction Administration Costs	2	LS	\$	30,000	\$	60,000
12	Aqua Direct Cost @	5%				\$	38,220.28
13	Contingencies @	5%				\$	40,131.29
					TOTAL CAPITAL COSTS:	\$	842,757.06
14	AFUDC @	7%				\$	58,992.99
TOTAL ESTIMATED PROJECT COSTS:							\$ 901,750

Note: The above information is for planning purposes only and is subject to change based on further engineering evaluations, water quality analyses, site conditions, and other site-specific discoveries and information

3. Estimated annual operating and maintenance expenses: \$1,000.00
4. Comments: Mn levels at these wells are consistently greater than 0.3 mg/L which makes it one of Aqua's Group 1 Priority Secondary Water Quality Projects as per the 2018 Water Quality Plan. The elevated level of Mn also poses a health risk to customers that must be addressed. Aqua will use 273 (108+165) GPM as the treatment system design (max) flow rate.

For these reasons, Aqua proposes interconnecting Wells #1&7 and installing an AdEdge Iron (Fe) and Manganese (Mn) filter system to treat water at the new combined point of entry (POE) at Carlyle Manor Well #1, P49.



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Docket W-218 Sub 526
Aqua North Carolina, Inc.
Burger Direct Exhibit A

**NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES**
DIVISION OF ENVIRONMENTAL HEALTH
PUBLIC WATER SUPPLY SECTION

January 25, 1999



JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

LINDA C. SEWALL
DIRECTOR

JESSICA G. MILES
CHIEF

Mr. William E. Grantmyre, President
Heater Utilities, Incorporated
Post Office Drawer 4889
Cary, North Carolina 27519

Re Well Water System
Carlyle at Falls Lake, Phase I
Bayleaf Master Water System
Wake County
I D #03-92-373

Dear Mr. Grantmyre:

Enclosed please find one copy of the "Application for Approval" together with one copy of the referenced plans and specifications bearing the Division of Environmental Health stamp of approval and signature of the Public Water Supply Section Chief for the referenced project. These plans and specifications are approved under Division of Environmental Health serial number 98-01924, dated January 14, 1999.

Plans and specifications prepared by Don C. Kennedy, P.E., call for the construction of a well with a 73 gpm 15 horsepower motor Grundfos Model No. 80S200-20 submersible pump, well house, chlorine, Aqua-Mag sequestering agent and caustic soda chemical feeding equipment, approximately 9,900 feet of 8-inch, 300 feet of 6-inch and 1,000 feet of 4-inch water mains, valves and other appurtenances to serve Carlyle at Falls Lake Subdivision, Phase I with 98 lots located off S.R. 2003 (Bayleaf Church Road). The plans also call for extending the existing distribution system of Bayleaf Master Water System by installing approximately 300 feet of 10-inch and 2,100 feet of 8-inch water mains with valves along S.R. 2005 (Honeycutt Road) and S.R. 2003 (Bayleaf Church Road) to tie into the water distribution system of Carlyle at Falls Lake Subdivision.

Public water system rules require that a registered professional engineer verify that construction has been completed in accordance with these approved plans and specifications. In order to complete the approval of this project, please furnish us a copy of the engineer's verification affixed with his/her professional engineering seal immediately upon completion of construction. Customer connections shall not be made until the construction verification letter is received by this office.

One copy of each enclosed document is being forwarded to our Raleigh Regional Office. The third copy is being retained in our permanent files.

P.O. BOX 29536, RALEIGH, NORTH CAROLINA 27626-0536
PHONE 919-733-2321

DEH/COMPLIANCE SERVICES BRANCH FAX 919-715-3242 MAIN FAX 919-715-4374 LAB FORMS FAX 919-715-6637
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

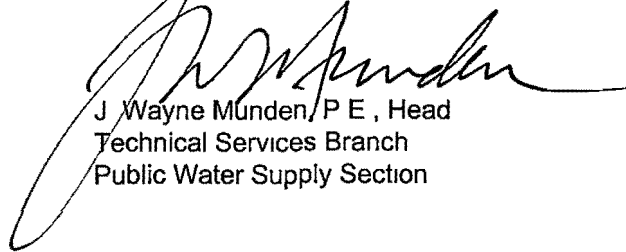
OFFICIAL COPY

Dec 31 2019

Mr Grantmyre
Page 2
January 25, 1999

If we can be of further service, please call on us at (919) 733-2460.

Sincerely,



J. Wayne Munden, P E , Head
Technical Services Branch
Public Water Supply Section

JWM/JCL/jp

Enclosures: Approval Documents

cc Michael L. Douglas, Regional Engineer
Wake County Health Department
Bass, Nixon & Kennedy, Incorporated
Wake County Community Development Services
Utilities Commission-Water Division

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29578 - Raleigh, N.C. 27626-0578
Phone (919) 733-3221

Docket W-218 Sub 526

Aquac North Carolina, Inc.

North Carolina Department of Environment and Natural Resources

QUAD. NO.	SERIAL NO.
Lat.	Long.
Minor Basin	Basin Code
Header Ent.	Lawrence

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Bings Well Drilling Inc.

DRILLER REGISTRATION NUMBER: 1544

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Raleigh County: WAKE

Carlyle Well #1

(Road, Community, or Subdivision and Lot No.)

2. OWNER S&W PROPERTIES

ADDRESS PO Box 99637

(Street or Route No.)

Rd

NC

27624-9637

City or Town

State

Zip Code

3. DATE DRILLED 4-20-98 USE OF WELL APPLIC4. TOTAL DEPTH 5875. CUTTINGS COLLECTED YES ☐ NO ☒6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒7. STATIC WATER LEVEL Below Top of Casing: 35 FT.

(Use "+" if Above Top of Casing)

8. TOP OF CASING IS 2 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): 120 METHOD OF TEST Blow10. WATER ZONES (depth): 58511. CHLORINATION: Type HTH Amount 1 LB

12. CASING:

From	Depth	To	Diameter	Wall Thickness or Weight/Ft.	Material
<u>12</u>	<u>61</u>	Ft.	<u>6.75</u>	<u>188</u>	<u>Galvanized</u>
From	To	Ft.			
From	To	Ft.			

13. GROUT:

From	Depth	To	Material	Method
<u>0</u>	<u>61</u>	Ft.	<u>NEAT CONCRETE</u>	<u>Pump</u>
From	To	Ft.		

14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material
From	To	Ft.			
From	To	Ft.			
From	To	Ft.			

15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material
From	To	Ft.		
From	To	Ft.		

16. REMARKS:

DEPTH

From To

0 - 16

16 - 32

32 - 44

44 - 55

55 - 75

75 - 84

84 - 587

DRILLING LOG

Formation Description

Yellow Clay

Pellant SANDY CLAY

BROWN CLAY

BROWN & PINK granite

PINK & gray granite

gray granite

PINK & gray granite

with black streaks

If additional space is needed use back of form

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

Well #1

Six Forks

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

Highway 100

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C. WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Bobby J. Allen

SIGNATURE OF CONTRACTOR OR AGENT

Submit original to Division of Environmental Management and copy to well owner.

4-21-98

DATE

WELL PUMPING TEST RECORD

Docket W-218 SUB PAGE #1
Aqua North Carolina, Inc.
Berger Direct Exhibit A

CONDUCTED BY: HEATER UTILITIES, INC.

WELL CONSTRUCTION PERMIT NO. N/A

WELL LOCATION (NEAREST TOWN) RALIEGH COUNTY: WAKE
SUBDIVISION: CARLYLE MANOR WELL # 1 USE OF WELL DOMESTIC ()
OWNER: HEATER UTILITIES, INC. PUBLIC (X)
P.O. DRAWER 4889 INDUSTRIAL ()
CARY, NC 27519 IRRIGATION ()
OTHER ()
DRILLING CONTRACTOR: BINGS WELL DRILLING INC.
WELL DEPTH: 587 FT CASING DEPTH 61 FT CASING DIA.: 6.25" CASING TYPE GALVANIZED
STATIC LEVEL: 36 FT () ABOVE (X) BELOW TOP OF CASING DATE MEASURED: 4/29/98
CASING IS 3 FEET ABOVE LAND SURFACE WAS CASING GROUTED?: YES

TEST PUMP: TYPE - SUBMERSIBLE MAKE- GOULDS 100H20 HORSEPOWER - 20
CAPACITY OF PUMP - 100 GPM @ 336 ' TDH INTAKE DEPTH - 336 FEET
FLOW MEASURE DEVICE: W160 - SENSUS METER WATER LEVEL MEASURE DEVIC TAPE
CHLORINATION: TYPE - HTH AMOUNT - 3 #
PUMP STARTED: DATE - 4/29/98 TIME - 9:30 AM
PUMP STOPPED: DATE - 4/30/98 TIME - 9:30 AM
PUMPING WATER LEVEL: 251 FEET AFTER 24 HOURS @ 112 GPM WELL YIELD: 112 GPM

TIME	WATER LEVEL	PRODUCTION	COMMENTS
09:30 AM	36 FEET	142 GPM	
09:35 AM	144 FEET	131 GPM	
09:40 AM	158 FEET	130 GPM	
09:45 AM	167 FEET	128 GPM	
09:50 AM	174 FEET	127 GPM	
09:55 AM	178 FEET	126 GPM	
10:00 AM	181 FEET	125 GPM	
10:05 AM	184 FEET	125 GPM	
10:10 AM	186 FEET	124 GPM	
10:15 AM	188 FEET	124 GPM	
10:20 AM	191 FEET	124 GPM	
10:25 AM	193 FEET	123 GPM	
10:30 AM	195 FEET	123 GPM	
10:40 AM	197 FEET	123 GPM	
10:50 AM	200 FEET	122 GPM	
11:00 AM	202 FEET	122 GPM	
11:10 AM	204 FEET	121 GPM	
11:20 AM	207 FEET	121 GPM	
11:30 AM	210 FEET	120 GPM	
11:45 AM	214 FEET	120 GPM	
12:00 PM	217 FEET	120 GPM	
12:15 PM	219 FEET	120 GPM	

OFFICIAL COPY
Dec 31 2019

WELL PUMPING TEST RECORD

Docket W-218 Sub 526
Aqua North, Inc.
Berger Direct Exhibit A

CONDUCTED BY: HEATER UTILITIES, INC. SUBDIVISION: CARLYLE MANOR WELL NO: 1

DATE CONDUCTED: 4/29/98

TIME	WATER LEVEL	PRODUCTION	COMMENTS
12:30 PM	221 FEET	119 GPM	
01:00 PM	225 FEET	119 GPM	
01:30 PM	228 FEET	118 GPM	
02:30 PM	232 FEET	117 GPM	
03:30 PM	236 FEET	116 GPM	
04:30 PM	240 FEET	115 GPM	
05:30 PM	243 FEET	114 GPM	
06:30 PM	246 FEET	114 GPM	
07:30 PM	247 FEET	114 GPM	
08:30 PM	247 FEET	113 GPM	
09:30 PM	248 FEET	113 GPM	
10:30 PM	248 FEET	113 GPM	
11:30 PM	248 FEET	113 GPM	
12:30 AM	249 FEET	113 GPM	
01:30 AM	249 FEET	113 GPM	
02:30 AM	249 FEET	113 GPM	
03:30 AM	250 FEET	112 GPM	
04:30 AM	250 FEET	112 GPM	
05:30 AM	250 FEET	112 GPM	
06:30 AM	251 FEET	112 GPM	
07:30 AM	251 FEET	112 GPM	
08:30 AM	251 FEET	112 GPM	
09:30 AM	251 FEET	112 GPM	

END OF WELL PUMPING TEST

ADDITIONAL COMMENTS

OFFICIAL COPY

Dec 31 2019

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

DATE CONDUCTED: 4/29/98

RECOVERY

TIME	WATER LEVEL	COMMENTS
09:35 AM	151 FEET	
09:40 AM	138 FEET	CASCADING 3-5GPM
09:45 AM	139 FEET	
09:50 AM	136 FEET	
09:55 AM	123 FEET	
10:00 AM	121 FEET	
10:05 AM	120 FEET	
10:15 AM	119 FEET	
10:25 AM	117 FEET	
10:35 AM	115 FEET	
10:50 AM	110 FEET	
11:05 AM	105 FEET	
11:35 AM	98 FEET	CONTINUED TO CASCADE

ADDITIONAL COMMENTS

OFFICIAL COPY

Dec 31 2019

Environment 1, Incorporated

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

E-TH-848

PO BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

NEW WELL INORGANIC CHEMICAL ANALYSIS

LABORATORY ID#: 37715
WATER SYSTEM ID#: - -
NAME OF SYSTEM: CARLYLE MANOR
SYSTEM TYPE: (W) [W=Source] [S=Special]
COLLECTED ON: 04/30/98 (MM/DD/YY)
LOCATION WHERE COLLECTED: TEST WELL #1
LOCATION/SOURCE CODE: TW1

COUNTY: WAKE

TIME: 09:00 AM (HH:MM AM or PM)

COLLECTED BY: T.R.Y

MAIL RESULTS TO:

HEATER UTILITIES, INC.
PO DRAWER 4889
CARY, NC 27519

TYPE OF SUPPLY:

(X) COMMUNITY () NTNC
() NON-COMMUNITY () PRIVATE
() ADJACENT () CAMPGROUND

TELEPHONE: (919) 467-8712

WATER SOURCE:
(X) GROUND

CONTAM CODE	CONTAMINANT	METHOD CODE	RESULTS	ALLOW. LIMITS
0100	TURBIDITY, ntu	001	0.17	N/A
1005	ARSENIC, mg/l	125	< 0.010	0.050
1010	BARIUM, mg/l	125	0.390	2.000
1015	CADMIUM, mg/l	125	< 0.001	0.005
1016	CALCIUM, mg/l	127	31.100	N/A
1017	CHLORIDE, mg/l	127	4	N/A
1020	CHROMIUM, mg/l	125	< 0.005	0.100
1022	COPPER, mg/l	101	< 0.010	1.300
1024	CYANIDE, mg/l	148	< 0.005	0.200
1025	FLUORIDE, mg/l	107	0.36	4.000
1028	IRON, mg/l	101	0.070	0.300
1030	LEAD, mg/l	125	< 0.005	0.015
1031	MAGNESIUM, mg/l	101	10.630	N/A
1032	MANGANESE, mg/l	101	0.086	0.050
1035	MERCURY, mg/l	103	< 0.0002	0.002
1036	NICKEL, mg/l	101	< 0.010	N/A
1040	NITRATE, mg/l	121	< 1.00	10.00
1041	NITRITE, mg/l	121	< 0.02	1.00
1045	SELENIUM, mg/l	125	< 0.010	0.050
1050	SILVER, mg/l	125	< 0.050	0.100
1052	SODIUM, mg/l	101	23.85	N/A
1055	SULFATE, mg/l	137	7.3	N/A
1068	ACIDITY, mg/l	157	2	N/A
1074	ANTIMONY, mg/l	125	< 0.003	0.005
1075	BERYLLIUM, mg/l	125	< 0.002	0.004

MAY 13 1998

OFFICIAL COPY

Dec 31 2019

Environment 1, Incorporated

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

PO BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N C 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

OFFICIAL COPY

Dec 31 2019

NEW WELL INORGANIC CHEMICAL ANALYSIS(continued)

LABORATORY ID#: 37715

WATER SYSTEM ID#: - -

COLLECTION DATE: 04/30/98

LOCATION SOURCE CODE: TW1

CONTAM CODE	CONTAMINANT	METHOD CODE	RESULTS	ALLOW. LIMITS
1085	THALLIUM, mg/l	125	< 0.001	0.002
1095	ZINC, mg/l	101	0.106	5.000
1905	COLOR, Units	129	< 5	15.00
1915	TOTAL HARDNESS, mg/l	141	128	N/A
1925	pH, Units	135	7.8	> 6.5
1927	ALKALINITY, mg/l	142	186	N/A
	TOTAL ORGANIC CARBON mg/l			

() SAMPLE UNSATISFACTORY

() RESAMPLE REQUESTED

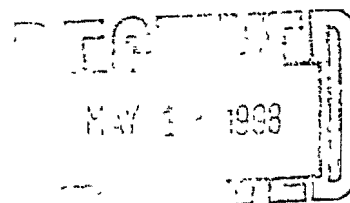
DATE ANALYSIS BEGUN: 04/30/98
DATE ANALYSIS COMPLETED: 05/12/98

TIME ANALYSIS BEGUN: 5:00 PM
TIME ANALYSIS COMPLETED: 2:00 PM

LABORATORY LOG #: 8489-043098-TW1

CERTIFIED BY: DB

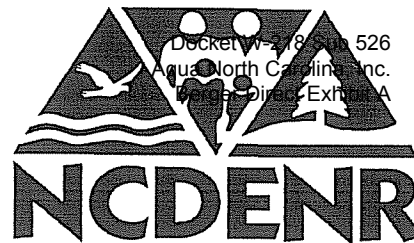
COMMENTS: _____



STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES

Division of Environmental Health
Public Water Supply Section

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Linda C. Sewall, Director
Jessica G. Miles, Section Chief



OFFICIAL COPY

June 21, 2002

Mr. William E. Grantmyre, President
Heater Utilities, Incorporated
Post Office Box 4889
Cary, North Carolina 27519

Re: Engineering Plans and Specifications Approval
Well #4
Carlyle Subdivision
Bayleaf Master Water System
Wake County
I.D. # 03-92-373

This is not an Authorization to Construct

Dear Mr. Grantmyre:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Environmental Health stamp of approval and signature of the Public Water Supply Section Chief for the referenced project. These engineering plans and specifications are approved under Division of Environmental Health serial number 02-00759, dated June 18, 2002.

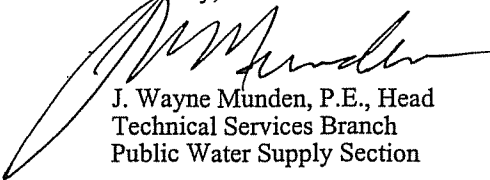
Engineering plans and specifications prepared by Don C. Kennedy, P.E., call for the installation of a 44 gpm Well #4 with 10 hp submersible well pump, well house with well head piping assembly, liquid chlorination and polyphosphate chemical feed system, connection piping, valves and other appurtenances located off Falls Bridge Drive.

Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Engineer's Report and Water System Management Plan. No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C .0305(a).

One copy of each enclosed document is being forwarded to our Raleigh Regional Office. The third copy is being retained in our permanent files.

If we can be of further service, please call on us at (919) 733-2321.

Sincerely,



J. Wayne Munden, P.E., Head
Technical Services Branch
Public Water Supply Section

JWM/TCC/jhd

Enclosures: Approval Documents

cc: Michael L. Douglas, Regional Engineer
Wake County Health Department
Bass, Nixon and Kennedy, Inc.

Dec 31 2019



North Carolina Department of Environment and Natural Resources

Division of Environmental Health

Terry L. Pierce
Director

Dee Freeman
Secretary

Beverly Eaves Perdue
Governor

May 24, 2010

Thomas J. Roberts, President
Aqua North Carolina
202 MacKenan Court
Cary, North Carolina 27511

Re: Engineering Plans and Specifications Approval
Redrill of Carlyle Well #4 by
Aqua North Carolina
to serve Bayleaf Master Water System
Wake County
Water System No.: NC039273
Serial No.: 10-00480

This is not an Authorization to Construct

Dear Mr. Roberts:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Environmental Health stamp of approval for the referenced project. These engineering plans and specifications are approved under serial number 10-00480, dated May 21, 2010.

Engineering plans and specifications prepared by Edward O. Sasser, Jr., P.E., call for the installation and construction of a re-drilled Carlyle Well #4, equipped with a 7.5-horsepower Goulds Model 40GS75 submersible pump, providing up to 38 gallons per minute (the 24-hour drawdown test demonstrated a yield of 57 gallons per minute). When completed, the Bayleaf Master system will have 120 wells approved to provide 5,784 gallons per minute, eight ground tanks providing 99,500 gallons of storage, six elevated tanks providing 1,750,000 gallons of storage and a distribution system serving up to 6,514 connections.

Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Water System Management Plan. No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C.0305(a).

These plans and specifications cited in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.



North Carolina Department of Environment and Natural Resources
Division of Environmental Health

Beverly Eaves Perdue
Governor

Terry L. Pierce
Director

Dee Freeman
Secretary

June 23, 2010

TOM ROBERTS
202 MACKENAN CT
CARY, NC 27511

Re: **Final Approval**
Final Approval Date: 6/23/2010
CARLYLE #4 (REDRILLED)
Serial No.: 10-00480
Water System No.: NC0392373
WAKE COUNTY

Dear Sir/Madam:

The Department received an engineer's certification statement and an applicant's certification statement concerning the above referenced project. The engineer's certification verifies that the construction of the referenced project has been completed in accordance with the engineering plans and specifications approved under Department Serial Number 10-00480. The applicant's certification verifies that an Operation and Maintenance Plan and Emergency Management Plan have been completed and are accessible to the operator on duty at all times and available to the Department upon request and that the system will have a certified operator as required by 15A NCAC 18C .1300.

The Department has determined that the requirements specified in 15A NCAC 18C .0303(a) and (c) have been met and, therefore, issues this **Final Approval** in accordance with Rule .0309(a).

If Public Water Supply can be of further service, please call (919) 733-2321.

Sincerely,

Tony C. Chen, P.E.
Technical Services Branch
Public Water Supply Section

TCC:VJT

cc: MICHAEL L. DOUGLAS, P.E., REGIONAL ENGINEER
WAKE COUNTY HEALTH DEPARTMENT
HIGHFILL INFRASTRUCTURE ENGR-RALEIGH

WELL PUMPING TEST RECORD

RETEST

CONDUCTED BY **HEATER UTILITIES, INC.**

WELL CONSTRUCTION PERMIT # **N/A**

CERTIFIED CONTRACTOR: *Michael W. [Signature]*

CERTIFICATION # **2657**

WELL LOCATION (NEAREST TOWN) **RALEIGH**

COUNTY **WAKE**

SUBDIVISION **CARLYLE MANOR**

WELL # **4**

USE OF WELL DOMESTIC ()

OWNER **HEATER UTILITIES, INC.**

PUBLIC (**X**)

P.O. DRAWER 4889

INDUSTRIAL ()

CARY, NC 27519

IRRIGATION ()

DRILLING CONTRACTOR **BINGS WELL DRILLING**

OTHER ()

WELL DEPTH: **365 FT** CASING DEPTH: **78 FT** CASING DIA.: **6 1/4"**

CASING TYPE **GALVANIZED**

STATIC LEVEL: **23 FT** () ABOVE (**X**) BELOW TOP OF CASING

DATE MEASURED: **10/24/01**

CASING IS **2.5 FEET ABOVE LAND SURFACE**

WAS CASING GROUTED?: **YES**

TEST PUMP, TYPE - **SUBMERSIBLE** MAKE- **GOULDS - 70L10** HORSEPOWER - **10**

CAPACITY OF PUMP - **67 GPM @ 269' TDH** INTAKE DEPTH - **252 FEET**

FLOW MEASURE DEVICE. **SENSUS-W160 METER** WATER LEVEL MEASURE DEVICE. **TAPE**

CHLORINATION TYPE - **HTH** AMOUNT - **3#**

PUMP STARTED: DATE - **10/24/01** TIME - **8:00 AM**

PUMP STOPPED: DATE - **10/25/01** TIME - **8:00 AM**

PUMPING WATER LEVEL: **231 FEET AFTER 24 HOURS @ 55 GPM** WELL YIELD: **55 GPM**

TIME	WATER LEVEL	PRODUCTION	COMMENTS
08:00 AM	23 FEET	112 GPM	
08:05 AM	90 FEET	110 GPM	
08:10 AM	102 FEET	106 GPM	
08:15 AM	116 FEET	105 GPM	
08:20 AM	130 FEET	104 GPM	
08:25 AM	133 FEET	103 GPM	
08:30 AM	136 FEET	102 GPM	
08:35 AM	139 FEET	101 GPM	
08:40 AM	148 FEET	100 GPM	
08:45 AM	174 FEET	98 GPM	
08:50 AM	199 FEET	96 GPM	
08:55 AM	220 FEET	93 GPM	
09:00 AM	234 FEET	90 GPM	
09:10 AM	252+ FEET	85 GPM	BROKE SUCTION - THROTTLED
09:20 AM	204 FEET	64 GPM	
09:30 AM	190 FEET	64 GPM	UNTHROTTLED
09:40 AM	201 FEET	67 GPM	
09:50 AM	206 FEET	67 GPM	
10:00 AM	208 FEET	67 GPM	
10:15 AM	210 FEET	67 GPM	
10:30 AM	215 FEET	67 GPM	
10:45 AM	220 FEET	67 GPM	

OFFICIAL COPY

Dec 31 2019

WELL PUMPING TEST RECORD

RETEST

CONDUCTED BY. HEATER UTILITIES, INC. SUBDIVISION: CARLYLE MANOR WELL NO: 4

DATE CONDUCTED. 10/24/01

TIME	WATER LEVEL	PRODUCTION	COMMENTS
11:00 AM	224 FEET	67 GPM	
11:30 AM	225 FEET	67 GPM	
12:00 PM	226 FEET	67 GPM	
01:00 PM	227 FEET	67 GPM	
02:00 PM	231 FEET	67 GPM	THROTTLED
03:00 PM	234 FEET	63 GPM	THROTTLED
04:00 PM	229 FEET	57 GPM	
05:00 PM	222 FEET	57 GPM	
06:00 PM	217 FEET	57 GPM	
07:00 PM	218 FEET	57 GPM	
08:00 PM	219 FEET	57 GPM	
09:00 PM	220 FEET	57 GPM	
10:00 PM	221 FEET	57 GPM	
11:00 PM	222 FEET	56 GPM	
12:00 AM	223 FEET	56 GPM	
01:00 AM	224 FEET	56 GPM	
02:00 AM	225 FEET	55 GPM	
03:00 AM	227 FEET	55 GPM	
04:00 AM	229 FEET	55 GPM	
05:00 AM	231 FEET	55 GPM	
06:00 AM	231 FEET	55 GPM	
07:00 AM	231 FEET	55 GPM	
08:00 AM	231 FEET	55 GPM	

END OF WELL PUMPING TEST

ADDITIONAL COMMENTS

OFFICIAL COPY

Dec 31 2019

WELL RECOVERY TEST RECORD

RETEST

PAGE #3

CONDUCTED BY. HEATER UTILITIES, INC. SUBDIVISION CARLYLE MANOR WELL NO 4

DATE CONDUCTED 10/24/01

*****RECOVERY*****

TIME	WATER LEVEL	COMMENTS
08:05 AM	199 FEET	
08:10 AM	178 FEET	
08:15 AM	153 FEET	
08:20 AM	134 FEET	
08:25 AM	125 FEET	
08:30 AM	120 FEET	
08:40 AM	118 FEET	
08:50 AM	116 FEET	
09:00 AM	113 FEET	
09:15 AM	111 FEET	
09:30 AM	106 FEET	
10:00 AM	97 FEET	

ADDITIONAL COMMENTS

OFFICIAL COPY

Dec 31 2019

Environment 1, Incorporated

Order No. 218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A
NOV 09 2001

OFFICIAL COPY

Dec 31 2019

PO BOX 7085 114 OAKMONT DRIVE
GREENVILLE NC 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

NEW WELL INORGANIC CHEMICAL ANALYSIS

LABORATORY ID#: 37715

WATER SYSTEM ID#: 03-92-373

COUNTY: WAKE

NAME OF SYSTEM: BAYLEAF/STONEBRIDGE

SAMPLE TYPE: (W) [W=Source] [S=Special]

COLLECTED ON: 10/25/01 (MM/DD/YY)

TIME: 07:00 AM (HH:MM AM or PM)

LOCATION WHERE COLLECTED: CARLYLE MANOR - TEST WELL #4

LOCATION/SOURCE CODE: TW4

COLLECTED BY: JIMMIE HAGWOOD

MAIL RESULTS TO:

HEATER UTILITIES, INC.
P.O. DRAWER 4889
CARY, NC 27519

TYPE OF SUPPLY:

(X) COMMUNITY () NTNC
() NON-COMMUNITY () PRIVATE
() ADJACENT () CAMPGROUND

TELEPHONE: (919) 467-8712

WATER SOURCE:

(X) GROUND

CONTAM CODE	CONTAMINANT	METHOD CODE	RESULTS	ALLOW. LIMITS
0100	TURBIDITY, ntu	001	0.40	N/A
1005	ARSENIC, mg/l	125	< 0.005	0.050
1010	BARIUM, mg/l	169	< 0.100	2.000
1015	CADMIUM, mg/l	125	< 0.001	0.005
1016	CALCIUM, mg/l	101	38.962	N/A
1017	CHLORIDE, mg/l	127	10	N/A
1020	CHROMIUM, mg/l	169	< 0.005	0.100
1022	COPPER, mg/l	101	< 0.010	1.300*
1024	CYANIDE, mg/l	148	< 0.040	0.200
1025	FLUORIDE, mg/l	107	0.14	4.000
1028	IRON, mg/l	101	0.205	0.300
1030	LEAD, mg/l	125	< 0.005	0.015*
1031	MAGNESIUM, mg/l	101	6.833	N/A
1032	MANGANESE, mg/l	169	0.238	0.050
1035	MERCURY, mg/l	103	< 0.0002	0.002
1036	NICKEL, mg/l	169	< 0.010	N/A
1040	NITRATE, mg/l	121	< 1.00	10.00
1041	NITRITE, mg/l	121	0.03	1.00
1045	SELENIUM, mg/l	125	< 0.010	0.050
1050	SILVER, mg/l	169	< 0.005	0.100
1052	SODIUM, mg/l	101	10.23	N/A
1055	SULFATE, mg/l	137	14.9	N/A
1068	ACIDITY, mg/l	157	28	N/A
1074	ANTIMONY, mg/l	125	< 0.003	0.006
1075	BERYLLIUM, mg/l	169	< 0.001	0.004

Laboratory Analyses — Environmental Consultants

Environment 1, Incorporated

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

F-1# 8483

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

NEW WELL INORGANIC CHEMICAL ANALYSIS(continued)

LABORATORY ID#: 37715

WATER SYSTEM ID#: 03-92-373

COLLECTION DATE: 10/25/01

LOCATION SOURCE CODE: TW4

CONTAM CODE	CONTAMINANT	METHOD CODE	RESULTS	ALLOW. LIMITS
1085	THALLIUM, mg/l	125	< 0.001	0.002
1095	ZINC, mg/l	169	0.229	5.000
1905	COLOR, Units	129	< 5	15.00
1915	TOTAL HARDNESS, mg/l	141	133	N/A
1925	pH, Units	135	7.1	> 6.5
1927	ALKALINITY, mg/l	142	130	N/A

() SAMPLE UNSATISFACTORY

() RESAMPLE REQUESTED

DATE ANALYSIS BEGUN: 10/25/01
DATE ANALYSIS COMPLETED: 11/08/01

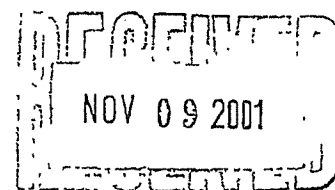
TIME ANALYSIS BEGUN: 5:00 PM
TIME ANALYSIS COMPLETED: 2:00 PM

LABORATORY LOG #: 8483-102501-TW4

CERTIFIED BY: SEJ

* CONCENTRATIONS FOR LEAD & COPPER ARE ACTION LEVELS, NOT MCL'S.

COMMENTS: _____

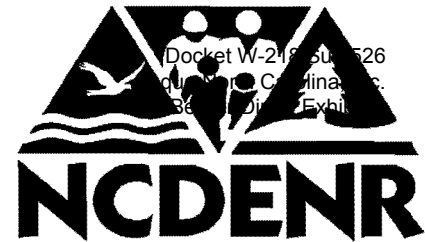


Laboratory Analyses - Environmental Consultants

**STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES**

**Division of Environmental Health
Public Water Supply Section**

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Linda C. Sewall, Director
Jessica G. Miles, Section Chief



OFFICIAL COPY

Dec 31 2019

January 7, 2003

Mr. William E. Grantmyre, President
Heater Utilities, Inc.
Post Office Box 4889
Cary, North Carolina 27519

Re: Engineering Plans and Specifications Approval
Well # 6
Carlyle Subdivision
Bayleaf Master Water System
Heater Utilities, Inc.
Wake County
I.D.# 03-92-373

This is not an Authorization to Construct

Dear Mr. Grantmyre:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Environmental Health stamp of approval and signature of the Public Water Supply Section Chief for the referenced project. These engineering plans and specifications are approved under Division of Environmental Health serial number 02-01593, dated January 3, 2003.

Engineering plans and specifications prepared by Don C. Kennedy, P.E., call for the installation of an 83 gpm Well # 6 with 15 hp submersible well pump, well house with well head piping assembly, liquid chlorination and polyphosphate chemical feed system, 4-inch connection water main, valves and other appurtenances located off Falls Bridge Drive.

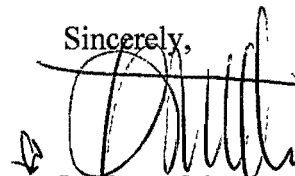
We are not formally approving the use of the sequestration agent and its injection apparatus; however, we are allowing it to be tried in lieu of the installation of manganese removal equipment. Should the use of the sequestration agent and the injection apparatus not provide trouble-free, satisfactory water to the customers, it is the responsibility of the owner to submit to us for approval plans and specifications covering the necessary manganese removal equipment. After having gained approval, the equipment must be installed and operated without undue delays.

Page 2
Grantmyre
January 7, 2003

Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Engineer's Report and Water System Management Plan. No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C .0305(a).

One copy of each enclosed document is being forwarded to our Raleigh Regional Office. The third copy is being retained in our permanent files.

If we can be of further service, please call on us at (919) 733-2460.

Sincerely,

J. Wayne Munden, P.E., Head
Technical Services Branch
Public Water Supply Section

JWM/TCC/db

Enclosures: Approval Documents

cc: Michael L. Douglas, Regional Engineer
Wake County Health Department
Bass, Nixon & Kennedy, Inc.
Utilities Commission-Water Division

OFFICIAL COPY

Dec 31 2019

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME WAYNE KIDD CERTIFICATION # 2143
WELL CONTRACTOR COMPANY NAME KIDD WELL DRILLING LLC PHONE # (919) 848 8602
STATE WELL CONSTRUCTION PERMIT# _____ ASSOCIATED WQ PERMIT# _____
(if applicable) (if applicable)

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☒ Industrial ☐ Agricultural ☐
Monitoring ☐ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use _____

2. WELL LOCATION:

Nearest Town: WAKE FOREST County WAKE
CHARLYE WELL # 6
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
☐ Ridge ☐ Slope ☒ Valley ☐ Flat
(check appropriate box)
Latitude/longitude of well location

3. OWNER: JSL PROPERTIES

Address P.O. Box 99637
RALEIGH N.C. 27624-9637
(Street or Route No.) City or Town State Zip Code
(919) 880-9919
Area code- Phone number

(degrees/minutes/seconds)
Latitude/longitude source: ☐ GPS ☐ Topographic map
(check box)

DEPTH		DRILLING LOG
From	To	Formation Description
0	40	SOFT SANDY CLAY
40	60	MED BROWN Rock
60	210	HARD GRAY GRANITE
210	223	SOFT GRAY Rock
223	228	HARD GRAY Rock
228	231	SOFT GRAY Rock
		5' SOFT LARGE BROKEN RO
231	270	HARD GRAY Rock
270	274	SOFT GREEN Rock
		5' BROKEN Rock
274	565	MED & HARD GRAY Rock

4. DATE DRILLED 12/10/01

5. TOTAL DEPTH: 565

6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

7. STATIC WATER LEVEL Below Top of Casing: 25 FT.

(Use "+" if Above Top of Casing)

8. TOP OF CASING IS +3 FT. Above Land Surface*

*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.

9. YIELD (gpm): 100 + METHOD OF TEST PILOTARY

10. WATER ZONES (depth): 26' to 148', 26' to 210', 10' to 238', 156' to 270', 50' to 600' 487'

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

11. DISINFECTION: Type _____ Amount _____

12. CASING: _____ Wall Thickness _____

From	To	Depth	Diameter	or Weight/Ft.	Material
From	To	80	6" 1/4	.188	STEEL
From	To				
From	To				

13. GROUT: _____
From 0 To 40 Ft. PORTLAND PUMP
From 40 To 77 Ft. PORTLAND PRESSURE

14. SCREEN: _____
From _____ To _____ Ft. _____ in. _____ in. _____ in.
From _____ To _____ Ft. _____ in. _____ in. _____ in.

15. SAND/GRAVEL PACK: _____
From _____ To _____ Ft. _____ Size _____ Material _____
From _____ To _____ Ft. _____

16. REMARKS: _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

SIGNATURE OF PERSON CONSTRUCTING THE WELL

DATE

WELL PUMPING TEST RECORD

CONDUCTED BY: HEATER UTILITIES, INC.

WELL CONSTRUCTION PERMIT # N/A

WELL LOCATION (NEAREST TOWN) WAKE FOREST COUNTY WAKE
 SUBDIVISION: CARLYLE MANOR WELL # 6 USE OF WELL DOMESTIC ()
 OWNER HEATER UTILITIES, INC. PUBLIC (X)
 P.O. DRAWER 4889 INDUSTRIAL ()
 CARY, NC 27519 IRRIGATION ()
 OTHER ()
 DRILLING CONTRACTOR: KIDD WELL DRILLING
 WELL DEPTH: 565 FT CASING DEPTH: 80 FT CASING DIA. 6 1/4" CASING TYPE GALVANIZED
 STATIC LEVEL: 20 FT () ABOVE (X) BELOW TOP OF CASING DATE MEASURED: 12/19/01
 CASING IS 3 FEET ABOVE LAND SURFACE WAS CASING GROUTED?: YES

TEST PUMP: TYPE - SUBMERSIBLE MAKE- GOULDS 150 H25 HORSEPOWER - 25
 CAPACITY OF PUMP 150 GPM @ 393 ' TDH INTAKE DEPTH - 378 FEET
 FLOW MEASURE DEVICE: 1 WATER LEVEL MEASURE DEVICE: TAPE
 CHLORINATION: TYPE - HTH AMOUNT - 3#
 PUMP STARTED: DATE - 12/19/01 TIME - 7:30 AM
 PUMP STOPPED: DATE - 12/20/01 TIME - 7:30 AM
 PUMPING WATER LEVEL: 245 FEET AFTER 30 HOURS @ 100 GPM WELL YIELD: 100 GPM

TIME	WATER LEVEL	PRODUCTION	COMMENTS
07:30 AM	20 FEET	200 GPM	
07:35 AM	85 FEET	195 GPM	
07:40 AM	89 FEET	194 GPM	
07:45 AM	101 FEET	193 GPM	
07:50 AM	108 FEET	192 GPM	
07:55 AM	112 FEET	191 GPM	
08:00 AM	119 FEET	190 GPM	
08:05 AM	124 FEET	189 GPM	
08:10 AM	127 FEET	188 GPM	
08:15 AM	131 FEET	187 GPM	
08:20 AM	135 FEET	187 GPM	
08:25 AM	138 FEET	186 GPM	
08:30 AM	138 FEET	186 GPM	
08:40 AM	149 FEET	185 GPM	
08:50 AM	152 FEET	184 GPM	
09:00 AM	159 FEET	183 GPM	
09:10 AM	165 FEET	182 GPM	
09:20 AM	175 FEET	180 GPM	
09:30 AM	179 FEET	178 GPM	
09:45 AM	186 FEET	176 GPM	
10:00 AM	191 FEET	175 GPM	
10:15 AM	200 FEET	174 GPM	

OFFICIAL COPY
 Dec 31 2019

WELL PUMPING TEST RECORD

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

PAGE #2

CONDUCTED BY HEATER UTILITIES, INC. SUBDIVISION CARLYLE MANOR WELL NO. 6

DATE CONDUCTED 12/19/01

TIME	WATER LEVEL	PRODUCTION	COMMENTS
10:30 AM	205 FEET	173 GPM	
11:00 AM	212 FEET	172 GPM	
11:30 AM	219 FEET	170 GPM	
12:30 PM	233 FEET	169 GPM	
01:30 PM	245 FEET	168 GPM	
02:30 PM	249 FEET	167 GPM	
03:30 PM	256 FEET	166 GPM	
04:30 PM	262 FEET	164 GPM	
05:30 PM	265 FEET	163 GPM	
06:30 PM	269 FEET	161 GPM	
07:30 PM	274 FEET	160 GPM	
08:30 PM	281 FEET	159 GPM	
09:30 PM	286 FEET	157 GPM	
10:30 PM	290 FEET	156 GPM	
11:30 PM	297 FEET	155 GPM	
12:30 AM	304 FEET	155 GPM	
01:30 AM	272 FEET	125 GPM	
02:30 AM	272 FEET	125 GPM	
03:30 AM	267 FEET	125 GPM	
04:30 AM	265 FEET	125 GPM	
05:30 AM	228 FEET	67 GPM	
06:30 AM	216 FEET	67 GPM	
07:30 AM	237 FEET	100 GPM	
08:30 AM	246 FEET	100 GPM	
09:30 AM	245 FEET	100 GPM	
10:30 AM	245 FEET	100 GPM	
11:30 AM	245 FEET	100 GPM	
12:30 PM	245 FEET	100 GPM	

END OF WELL PUMPING TEST

ADDITIONAL COMMENTS

OFFICIAL COPY

Dec 31 2019

PAGE #3

DATE CONDUCTED 12/19/01

*****RECOVERY*****

Dec 31 2019[illegible]

Environment 1, Incorporated

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

OFFICIAL COPY

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208

FAX (252) 756-0633

NEW WELL INORGANIC CHEMICAL ANALYSIS

LABORATORY ID#: 37715

WATER SYSTEM ID#: 03-92-373

COUNTY: WAKE

NAME OF SYSTEM: BAYLEAF/STONEBRIDGE

SAMPLE TYPE: (W) [W=Source] [S=Special]

COLLECTED ON: 12/20/01 (MM/DD/YY)

TIME: 08:00 AM (HH:MM AM or PM)

LOCATION WHERE COLLECTED: CARLYLE MANOR TEST WELL #6

LOCATION/SOURCE CODE: TW6

COLLECTED BY: JIMMIE HAGWOOD

MAIL RESULTS TO:

HEATER UTILITIES, INC.
P.O. DRAWER 4889
CARY, NC 27519

TYPE OF SUPPLY:

(X) COMMUNITY () NTNC
() NON-COMMUNITY () PRIVATE
() ADJACENT () CAMPGROUND

TELEPHONE: (919) 467-8712

WATER SOURCE:
(X) GROUND

CONTAM CODE	CONTAMINANT	METHOD CODE	RESULTS	ALLOW. LIMITS
0100	TURBIDITY, ntu	001	< 1.50	N/A
1005	ARSENIC, mg/l	125	< 0.005	0.050
1010	BARIUM, mg/l	169	0.413	2.000
1015	CADMIUM, mg/l	125	< 0.001	0.005
1016	CALCIUM, mg/l	101	41.130	N/A
1017	CHLORIDE, mg/l	127	5	N/A
1020	CHROMIUM, mg/l	169	< 0.005	0.100
1022	COPPER, mg/l	101	< 0.010	1.300*
1024	CYANIDE, mg/l	148	< 0.040	0.200
1025	FLUORIDE, mg/l	107	0.11	4.000
1028	IRON, mg/l	101	0.063	0.300
1030	LEAD, mg/l	125	< 0.005	0.015*
1031	MAGNESIUM, mg/l	101	9.824	N/A
1032	MANGANESE, mg/l	169	0.144	0.050
1035	MERCURY, mg/l	103	< 0.0002	0.002
1036	NICKEL, mg/l	169	< 0.010	N/A
1040	NITRATE, mg/l	121	< 1.00	10.00
1041	NITRITE, mg/l	121	< 0.02	1.00
1045	SELENIUM, mg/l	125	< 0.010	0.050
1050	SILVER, mg/l	169	< 0.005	0.100
1052	SODIUM, mg/l	101	13.77	N/A
1055	SULFATE, mg/l	137	6.3	N/A
1068	ACIDITY, mg/l	157	9	N/A
1074	ANTIMONY, mg/l	125	< 0.003	0.006
1075	BERYLLIUM, mg/l	169	< 0.001	0.004

Dec 31 2019

Environment 1, Incorporated

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Perceps Direct Exhibit A

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

OFFICIAL COPY

Dec 31 2019

NEW WELL INORGANIC CHEMICAL ANALYSIS(continued)

LABORATORY ID#: 37715

WATER SYSTEM ID#: 03-92-373

COLLECTION DATE: 12/20/01

LOCATION SOURCE CODE: TW6

CONTAM CODE	CONTAMINANT	METHOD CODE	RESULTS	ALLOW. LIMITS
1085	THALLIUM, mg/l	125	< 0.001	0.002
1095	ZINC, mg/l	169	< 0.010	5.000
1905	COLOR, Units	129	< 5	15.00
1915	TOTAL HARDNESS, mg/l	141	149	N/A
1925	pH, Units	135	7.8	> 6.5
1927	ALKALINITY, mg/l	142	154	N/A

() SAMPLE UNSATISFACTORY

() RESAMPLE REQUESTED

DATE ANALYSIS BEGUN: 12/20/01

TIME ANALYSIS BEGUN: 5:00 PM

DATE ANALYSIS COMPLETED: 01/09/02

TIME ANALYSIS COMPLETED: 2:00 PM

LABORATORY LOG #: 8483-122001-TW6

CERTIFIED BY: SEJ

* CONCENTRATIONS FOR LEAD & COPPER ARE ACTION LEVELS, NOT MCL'S.

COMMENTS:

JAN 11 2002



North Carolina Department of Environment and Natural Resources

Division of Water Resources

Beverly Eaves Perdue
Governor

Thomas A. Reeder
Director

Dee Freeman
Secretary

January 4, 2013

RECEIVED JAN 11 2013

Mr. Thomas J. Roberts, President and COO
Aqua North Carolina, Inc.
202 MacKenan Court
Cary, North Carolina 27511

Re: Engineering Plans and Specifications Approval
New Well and Water Main Extension
Aqua North Carolina, Inc.
Bayleaf Master - Carlyle Well No. 7
Water System No: NC0392373, Wake County
Serial No.: 12-00820

Dear Mr. Roberts:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Water Resources stamp of approval for the referenced project. These engineering plans and specifications for the new well and water main extension are approved under Serial Number 12-00820, dated December 10, 2012.

Engineering plans and specifications prepared by David Ridout, P.E., call for the construction of new water mains and one new well to serve the Bayleaf Master system in Wake County. The plans propose the following:

- One Goulds model 150L25 (25 HP) 145 GPM submersible pump at 474 feet TDH with the well yield capacity of 165 GPM, based on 24-hour drawdown test;
- One well house;
- Chlorine and polyphosphate chemical treatment by chemical feed pumps;
- Approximately 860 linear feet (LF) of four-inch water main from Well No. 7 to connect to the existing distribution system along Bayleaf Church Road;
- Valves, meter, chemical feed lines and other appurtenances.

Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Water System Management Plan. No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C.0305(a).

The Public Water Supply Section (PWS Section) does not object to the use of a sequestration agent and its injection apparatus for iron and manganese. The PWS Section is allowing sequestration to be tried in lieu of the installation of iron and manganese removal equipment. Should the use of the sequestration agent and its injection apparatus not provide trouble free, satisfactory water to the customers, it is the responsibility of the owner to submit plans and specifications to the PWS Section that propose iron and manganese removal equipment.

Page 2
Roberts / 12-00820
January 4, 2013

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

These plans and specifications cited in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.

One copy of each enclosed document is being forwarded to our Raleigh Regional Office. The third copy is being retained in our permanent files.

If Technical Services Branch of this Section can be of further service, please call (919) 707-9100.

Sincerely,

James Coats

for Siraj Chohan, P.E.
Technical Services Branch
Public Water Supply Section

SMC/JPC/db

Enclosures: Approval Documents

cc: Michael L. Douglas, P.E., Raleigh Regional Office
Wake County Health Department
David Ridout, P.E., Aqua North Carolina

OFFICIAL COPY

Dec 31 2019

111- AQUA N.C. DENNIS MAHAFFEY
NCDEMR: INFORMATION MGT.

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



Non Residential Well Construction Record

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2143-A

OFFICIAL COPY

Dec 31 2019

1. WELL CONTRACTOR:

WAYNE KIDD
Well Contractor (Individual) Name
KIDD WELL DRILLING LLC
Well Contractor Company Name

STREET ADDRESS 13408 OLD CREEK MOOR RD
WAKE FOREST NC 27587
City or Town State Zip Code

919-848-8602
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID # (if applicable)

STATE WELL PERMIT # (if applicable)

DWQ OR OTHER PERMIT # (if applicable) WS 0500118

WELL USE (Check Applicable Box) Monitoring ☐ Municipal/Public ☒

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 9/9/10

TIME COMPLETED 7:30 AM ☐ PM ☒

3. WELL LOCATION:

CITY: RALEIGH COUNTY WAKE

12333 BAYLEAF CHURCH RD
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

☒ Slope ☐ Valley ☐ Flat ☐ Ridge ☐ Other
(check appropriate box)

LATITUDE 35 52.19

LONGITUDE 78 38.23

May be in degrees,
minutes, seconds or
in a decimal format

Latitude/longitude source: ☒ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and
attached to this form if not using GPS)

4. FACILITY- Is the name of the business where the well is located.

FACILITY ID # (if applicable)

NAME OF FACILITY

STREET ADDRESS

City or Town State Zip Code

CONTACT PERSON DENNIS MAHAFFEY (AQUA NC)

MAILING ADDRESS 202 Mac KENNA CT.

CARY N.C. 27511
City or Town State Zip Code

919-467-8712 919-653-5768
Area code - Phone number

5. WELL DETAILS:

a. TOTAL DEPTH: 625

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

c. WATER LEVEL Below Top of Casing: 50 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 13 FT. Above Land Surface"
"Top of casing terminated at/or below land surface may require
a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): 150+ METHOD OF TEST AIR ROTARY

f. DISINFECTION: Type GRANULAR Amount 2 LBS

g. WATER ZONES (depth):

From <u>76' to 120'</u>	From <u>106' to 185'</u>
From <u>36' to 160'</u>	From <u>100' to 495'</u>
From <u>106' to 165'</u>	From <u>20' to 540'</u>

6. CASING:

From	To	Depth	Diameter	Thickness/ Weight	Material
From <u>13</u>	To <u>103</u>	Ft.	<u>8"</u>	<u>.322</u>	<u>STEEL</u>
From	To	Ft.			
From	To	Ft.			

7. GROUT:

From	To	Depth	Material	Method
From <u>0</u>	To <u>2</u>	Ft.	<u>PORTLAND CEMENT</u>	<u>PUMP</u>
From <u>2</u>	To <u>50</u>	Ft.	<u>PORTLAND</u>	<u>PUMP</u>
From <u>50</u>	To <u>100</u>	Ft.	<u>PORTLAND</u>	<u>PRESSURE</u>

8. SCREEN:

From	To	Depth	Diameter	Slot Size	Material
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

From	To	Depth	Size	Material
From	To	Ft.		
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG THE WELL IS 8" TO 543, 6" TO 62

From	To	Formation Description
0	25	CLAY
25	87	HARD ROCK & SOFT LAYERS
87	120	GRANITE
120	121	SOFT BROWN (small broken) R
121	165	GRANITE
165	165.5	BROKEN ROCK (LARGE)
165.5	185	GRANITE
185	186	BROKEN ROCK (LARGE)
186	490	GRANITE
490	495	BLACK ROCK
495	497	LARGE BROKEN ROCK
497	505	BROKEN ROCK

11. REMARKS: 505-540 GRANITE, 540-543 SOFT
543-625 GRANITE & BLACK ROCK

THE WATER ZONES @ 185 AND ABOVE
FIRST SHOWED MORE WATER BUT FELL OFF

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH
15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS
RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR

DATE

WAYNE KIDD
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

PUMPING TEST RECORD

Page #1

Conducted By: Aqua NC		Well Construction Permit No. _____	
Well Location: St. Luke's Catholic Church		County: Wake	
Subdivision: Carlyle Manor		Well # 7	
Owner: Aqua NC		Use of Well: Domestic ☐	
202 MacKenan Court Cary, NC 27511		Public ☒	
		Industrial ☐	
		Irrigation ☐	
		Other ☐	
Drilled By: Wayne Kidd		Was Casing Grouted? Yes	
Well Depth: 625 Feet		Casing Depth: 103 Ft.	
Static Level: 58 feet ☐ above ☒ below top of casing		Casing Dia. 8"	
Casing is 3 feet above land surface		Date Measured 10/12/2010	
		Casing Type: Galvanized	
Test Pump Type: Submersible		Make: Goulds	
Cap. of Pump: 300 GPM @		Horsepower: 25	
		Intake Depth (feet): 441	
Flow Measure Device: 2" Sensus		Water Level Measure Device: Tape	
Chlorination: Type: HTH HTH		Amount-HTH 2 lbs.	
Pump Started Date 10/12/2010		Time 3:00 PM	
Pump Stopped Date 10/13/2010		Time 3:00 PM	

Results

Pumping Water Level: **187** Feet After **24** Hrs @ **165** GPM
WELL YIELD **165** GPM

Time	PSI	Water Level In Feet	Pumping Rate GPM	Comments:
03:00 PM	154	85	200	
03:05 PM	150	95	200	
03:10 PM	147	101	200	
03:15 PM	145	106	200	
03:20 PM	147	101	195	
03:25 PM	141	115	195	
03:30 PM	140	118	195	
03:35 PM	139	120	195	
03:40 PM	138	122	195	
03:45 PM	137	125	195	
03:50 PM	137	125	195	
03:55 PM	136	127	193	
04:00 PM	135	129	193	
04:10 PM	135	129	190	
04:20 PM	134	131	190	
04:30 PM	134	131	190	
04:40 PM	132	136	190	
04:50 PM	132	136	190	
05:00 PM	131	138	190	
05:15 PM	130	141	190	
05:30 PM	130	141	190	
05:45 PM	129	143	190	

PUMPING TEST RECORD			
Conducted By: Aqua NC	Subdivision: Carlyle Manor	Well #	Page 2 7

Time	PSI	Water Level In Feet	Pumping Rate GPM	Comments:
06:00 PM	127	148	190	
06:30 PM	126	150	190	
07:00 PM	124	155	190	
08:00 PM	121	161	190	
09:00 PM	120	164	188	
10:00 PM	120	164	185	
11:00 PM	119	166	185	
12:00 AM	118	168	185	
01:00 AM	118	168	185	
02:00 AM	117	171	183	
03:00 AM	117	171	183	
04:00 AM	116	173	182	
05:00 AM	116	173	182	
06:00 AM	116	173	182	
07:00 AM	110	187	182	
08:00 AM	110	187	181	Choke to 175
09:00 AM	110	187	175	
10:00 AM	110	187	175	Choke to 165
11:00 AM	110	187	165	
12:00 PM	110	187	165	
01:00 PM	110	187	165	
02:00 PM	110	187	165	
03:00 PM	110	187	165	

RECOVERY			
Conducted By: Aqua NC	Subdivision: Carlyle Manor	Well #	7
03:05 PM	110	187	
03:10 PM	112	182	
03:15 PM	119	166	
03:20 PM	119	166	
03:25 PM	120	164	
03:30 PM	121	161	
03:40 PM	123	157	
03:50 PM	125	152	
04:00 PM	126	150	
04:15 PM	131	138	
04:30 PM	134	131	
05:00 PM	137	125	
05:30 PM	138	122	

Deton R. Tate
Conducted by

10/12/10
Date

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



www.encolabs.com

OFFICIAL COPY

Dec 31 2019

NEW WELL INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake
Name of Water System: BAYLEAF
Sample Type: ☐ Entry Point ☐ Special/Non-compliance
Location Where Collected: Well: Carlyle Manor #7 - N/A -
Facility ID No.: D01
Sample Point: TW7
Collected By: Alton Ratcliff
Mail Results to:
Aqua NC - Cary (AQ002)
Attn: Mark English
202 MacKenan Court
Cary, NC 27511

Collection Date	Collection Time
10/13/10	02:28 pm

Phone #: (919) 653-5779
Fax #: () -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
0100	Turbidity	180.1	0.1 ntu		0.11 ntu	N/A
1005	Arsenic	200.8	0.005 mg/L		0.00733 mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1016	Calcium	200.7	1 mg/L		44.8 mg/L	N/A
1017	Chloride	300.0	5 mg/L	X	mg/L	250 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1022	Copper	200.8	0.05 mg/L	X	mg/L	1.3 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L		0.11 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L	X	mg/L	0.3 mg/L
1030	Lead	200.8	0.003 mg/L	X	mg/L	0.015 mg/L
1031	Magnesium	200.7	1 mg/L		10.0 mg/L	N/A
1032	Manganese	200.8	0.01 mg/L		0.170 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1040	Nitrate as N	4500NO3-F	1 mg/L	X	mg/L	10 mg/L
1041	Nitrite as N	4500NO3-F	0.1 mg/L		0.25 mg/L	1 mg/L
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1050	Silver	200.7	0.05 mg/L	X	mg/L	0.1 mg/L
1052	Sodium	200.7	1 mg/L		12 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L	X	mg/L	250 mg/L
1068	Acidity (as CaCO3)	305.1	1 mg/L	X	mg/L	N/A
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1095	Zinc	200.8	1 mg/L	X	mg/L	5 mg/L
1905	Color	2120B	5 units	X	units	15 units



www.encolabs.com

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515

NEW WELL INORGANIC CHEMICAL ANALYSIS

(continued)

WATER SYSTEM ID #: 03-92-373
Name of Water System: BAYLEAF
Facility ID No.: D01
Sample Point: TW7

Collection Date	Collection Time
10/13/10	02:28 pm

LABORATORY ID #: 37724

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e. < R.R.L.) (X)	QUANTIFIED RESULTS	ALLOWABLE LIMIT*
1915	Hardness	2340B	1 mg/L		153 mg/L	N/A
1925	pH	150.1	N/A	N/A	7.9 units	6.5-8.5 units
1927	Total Alkalinity as CaCO3	2320B	1 mg/L		160 mg/L	N/A
1930	Total Dissolved Solids	2540C	10 mg/L		160 mg/L	500 mg/L

*Note: Concentrations for Lead and Copper are action levels not MCLs.

	DATE:	TIME:
ANALYSES BEGUN:	10/14/2010	12:43 pm
ANALYSES COMPLETED:	10/25/2010	11:14 am

Laboratory Log #: C010618-01
COMMENTS:

Certified By:

Link Thrower

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

WATER SYSTEM NAME: Bayleaf (0392373) : Carlyle Manor

PWS ID #: NC 03-92-373

WELL NO: Well-7

WELL PUMP: _____

BOOSTER PUMP: _____

TANK #1 _____ TANK #2 _____

TYPE _____ TYPE _____

TOTAL CAPACITY _____ TOTAL CAPACITY _____

OPERATING PRESSURE _____ OPERATING PRESSURE _____

Date Read	No. Days	Master Meter Reading	Gallons Pumped	Time Meter Reading	Total Hrs. Oper	GPD Pumped	Impulse Meter Reading	Impulse Meter Count	Avg. Pump Cycles / Day	Avg. Dur (mins)	Hrs / Day	Avg. GPM	Avg Water Pumped / Cycle (gals)	Sodium Hypochlorite Added (gals)	Orthophosphate Added (oz)	Sodium Hydroxide Added (gals)
9/6/2016	8	70811218	903754	8763	133	112969	7122	41	5.13	193.90	16.56	113.68	5.13			
9/12/2016	6	71575226	764008	8869	106	127335	7157	35	5.83	182.23	17.72	119.79	5.83			
9/19/2016	7	72550142	974916	9010	141	139274	7181	24	3.43	352.25	20.13	115.32	3.43			
9/26/2016	7	73157048	606906	9094	83	86701	7248	67	9.57	74.51	11.89	121.58	9.57			
10/3/2016	7	73746170	589122	9173	80	84160	7315	67	9.57	71.46	11.40	123.04	9.57			
10/10/2016	7	74344800	598630	9255	82	85519	7381	66	9.43	74.64	11.73	121.52	9.43			
10/17/2016	7	74960649	615849	9340	85	87978	7449	68	9.71	74.56	12.07	121.47	9.71			
10/24/2016	7	75748605	787956	9451	111	112565	7519	70	10.00	95.49	15.91	117.89	10.00			
10/31/2016	7	76597858	849253	9518	67	121322	303192	295673	42239.00	0.01	9.56	211.57	42239.00			
11/7/2016	7	77362026	764168	9627	109	109167	303242	50	7.14	130.44	15.53	117.17	7.14			
11/14/2016	7	78011395	649369	9714	87	92767	303305	63	9.00	83.24	12.49	123.83	9.00			
11/22/2016	8	78537842	526447	9786	72	65806	303380	75	9.38	57.28	8.95	122.54	9.38			
11/28/2016	6	78878436	340594	9834	48	56766	303433	53	8.83	54.00	7.95	119.01	8.83			
12/5/2016	7	79345006	466570	9909	75	66653	303498	65	9.29	69.14	10.70	103.82	9.29			
12/12/2016	7	79727672	382666	9964	56	54667	303569	71	10.14	46.99	7.94	114.71	10.14			

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

12/19/2016	7	80097747	370075	10016	52	52868	303622	53	7.57	58.53	7.39	119.30	7.57			
12/27/2016	8	80516201	418454	10072	56	52307	303689	67	8.38	50.51	7.05	123.66	8.38			
1/3/2017	7	80828405	312204	10115	42	44601	303741	52	7.43	48.81	6.04	123.01	7.43			
1/11/2017	8	81182423	354018	10162	48	44252	303798	57	7.13	50.11	5.95	123.96	7.13			
1/16/2017	5	81431578	249155	10196	34	49831	303839	41	8.20	49.46	6.76	122.86	8.20			
1/23/2017	7	81733075	301497	10237	41	43071	303890	51	7.29	48.47	5.89	121.96	7.29			
1/30/2017	7	82047690	314615	10280	43	44945	303945	55	7.86	46.80	6.13	122.23	7.86			
2/6/2017	7	82351149	303459	10322	42	43351	303999	54	7.71	46.78	6.01	120.13	7.71			
2/13/2017	7	82656812	305663	10365	43	43666	304058	59	8.43	43.73	6.14	118.47	8.43			
2/20/2017	7	82981247	324435	10413	48	46348	304109	51	7.29	56.47	6.86	112.65	7.29			
2/27/2017	7	83272728	291481	10457	44	41640	304163	54	7.71	48.67	6.26	110.91	7.71			
3/6/2017	7	83548436	275708	10500	43	39387	304218	55	7.86	46.58	6.10	107.61	7.86			
3/13/2017	7	83817396	268960	10542	43	38423	304274	56	8.00	45.54	6.07	105.47	8.00			
3/20/2017	7	84117643	300247	10581	39	42892	304328	54	7.71	43.56	5.60	127.66	7.71			
3/27/2017	7	84453680	336037	10626	44	48005	304386	58	8.29	45.93	6.34	126.14	8.29			
4/3/2017	7	84780698	327018	10669	44	46717	304444	58	8.29	45.21	6.24	124.72	8.29			
4/10/2017	7	85066700	286002	10708	39	40857	3045509	2741065	391580.71	0.00	5.57	122.22	391580.71			
4/17/2017	7	85476635	409935	10766	57	58562	304590	(2740919)	(391559.86)	0.00	8.16	119.65	(391559.86)			
4/24/2017	7	85841496	364861	10818	52	52123	304674	84	12.00	37.29	7.46	116.49	12.00			
5/1/2017	7	85965770	124274	10836	18	17753	304707	33	4.71	32.73	2.57	115.07	4.71			
5/8/2017	7	85965770	0	10836	0	0	304707	0	0.00	0.00	0.00	0.00	0.00			
5/15/2017	7	86129432	163662	10836	0	23380	304704	(3)	(0.43)	0.00	0.00	2727.70	(0.43)			
5/22/2017	7	86560296	430864	10836	0	61552	304707	3	0.43	0.00	0.00	7181.07	0.43			
5/30/2017	8	86724998	164702	10836	0	20588	304707	0	0.00	0.00	0.00	2745.03	0.00			
6/5/2017	6	86724998	0	10836	0	0	304707	0	0.00	0.00	0.00	0.00	0.00			
6/12/2017	7	86724998	0	10836	0	0	304707	0	0.00	0.00	0.00	0.00	0.00			
6/19/2017	7	87528922	803924	10836	0	114846	304707	0	0.00	0.00	0.00	13398.73	0.00			
6/26/2017	7	87948804	419882	10883	47	59983	304765	58	8.29	48.62	6.71	148.89	8.29			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/5/2017	9	88756186	807382	11011	128	89709	305692	927	103.00	8.27	14.20	105.29	103.00			
7/10/2017	5	89049897	293711	11064	53	58742	306189	497	99.40	6.40	10.60	92.36	99.40			
7/17/2017	7	89806537	756640	11176	112	108091	306245	56	8.00	120.21	16.03	112.39	8.00			
7/24/2017	7	90218039	411502	11278	103	58786	306343	98	14.00	62.76	14.64	66.91	14.00			
7/31/2017	7	90690667	472628	11358	80	67518	306419	76	10.86	63.16	11.43	98.46	10.86			
8/7/2017	7	91207104	516437	11453	95	73777	306491	72	10.29	78.83	13.51	90.99	10.29			
8/14/2017	7	91604797	397693	11529	76	56813	306571	80	11.43	57.00	10.86	87.21	11.43			
8/21/2017	7	91894879	290082	11586	58	41440	306627	56	8.00	61.71	8.23	83.94	8.00			
8/28/2017	7	92331500	436621	11664	78	62374	306686	59	8.43	79.12	11.11	93.53	8.43			
9/5/2017	8	92763391	431891	11745	81	53986	306774	88	11.00	55.09	10.10	89.09	11.00			
9/11/2017	6	93051641	288250	11802	57	48042	306843	69	11.50	49.39	9.47	84.58	11.50			
9/18/2017	7	93270880	219239	11855	53	31320	306906	63	9.00	50.76	7.61	68.56	9.00			
9/25/2017	7	93280853	9973	11935	80	1425	306930	24	3.43	200.00	11.43	2.08	3.43			
10/2/2017	7	93280870	17	12081	146	2	306947	17	2.43	513.88	20.80	0.00	2.43			
10/9/2017	7	93280895	25	12202	121	4	307004	57	8.14	127.58	17.31	0.00	8.14			
10/16/2017	7	93280902	7	12286	84	1	307073	69	9.86	72.70	11.94	0.00	9.86			
10/23/2017	7	93280906	4	12375	90	1	307151	78	11.14	68.85	12.79	0.00	11.14			
10/30/2017	7	93418841	137935	12440	65	19705	307220	69	9.86	56.43	9.27	35.42	9.86			
11/6/2017	7	93817697	398856	12510	70	56979	307293	73	10.43	57.62	10.01	94.83	10.43			
11/13/2017	7	94132447	314750	12568	58	44964	307359	66	9.43	53.09	8.34	89.83	9.43			
11/20/2017	7	94373350	240903	12616	47	34415	307427	68	9.71	41.56	6.73	85.25	9.71			
11/27/2017	7	94581079	207729	12658	43	29676	307495	68	9.71	37.76	6.11	80.89	9.71			
12/4/2017	7	94669039	87960	12677	19	12566	307528	33	4.71	33.82	2.66	78.82	4.71			
12/11/2017	7	94856175	187136	12714	37	26734	307598	70	10.00	31.97	5.33	83.62	10.00			
12/18/2017	7	95043309	187134	12752	38	26733	307665	67	9.57	33.67	5.37	82.95	9.57			
12/26/2017	8	95255456	212147	12796	44	26518	307739	74	9.25	35.43	5.46	80.91	9.25			
1/2/2018	7	95452384	196928	12837	42	28133	307805	66	9.43	37.73	5.93	79.09	9.43			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/8/2018	6	95699885	247501	12876	39	41250	307866	61	10.17	38.56	6.53	105.23	10.17			
1/15/2018	7	96007944	308059	12929	52	44008	307926	60	8.57	52.40	7.49	97.98	8.57			
1/22/2018	7	96157880	149936	12957	28	21419	302967	(4959)	(708.43)	(0.34)	3.99	89.57	(708.43)			
1/29/2018	7	96157880	0	12957	0	0	302967	0	0.00	0.00	0.00	0.00	0.00			
2/7/2018	9	96164375	6495	12957	1	722	307979	5012	556.89	0.01	0.06	216.50	556.89			
2/12/2018	5	96380203	215828	12987	30	43166	308033	54	10.80	33.78	6.08	118.33	10.80			
2/19/2018	7	96679071	298868	13030	43	42695	308094	61	8.71	42.30	6.14	115.84	8.71			
2/26/2018	7	96947864	268793	13070	39	38399	308145	51	7.29	46.00	5.59	114.58	7.29			
3/5/2018	7	97166437	218573	13116	46	31225	308210	65	9.29	42.74	6.61	78.68	9.29			
3/12/2018	7	97421813	255376	13166	50	36482	308284	74	10.57	40.30	7.10	85.64	10.57			
3/19/2018	7	97681412	259599	13203	38	37086	308343	59	8.43	38.24	5.37	115.07	8.43			
3/26/2018	7	98039734	358322	13256	52	51189	308390	47	6.71	66.89	7.49	113.97	6.71			
4/2/2018	7	98375040	335306	13302	46	47901	308447	57	8.14	48.74	6.61	120.70	8.14			
4/9/2018	7	98692860	317820	13351	49	45403	308511	64	9.14	45.94	7.00	108.10	9.14			
4/16/2018	7	98970090	277230	13394	43	39604	308579	68	9.71	38.29	6.20	106.46	9.71			
4/23/2018	7	99238541	268451	13438	44	38350	308649	70	10.00	37.46	6.24	102.38	10.00			
4/30/2018	7	99497152	258611	13483	45	36944	308722	73	10.43	36.99	6.43	95.78	10.43			
5/8/2018	8	99986605	489453	13573	90	61182	308809	87	10.88	62.34	11.30	90.24	10.88			
5/17/2018	9	554255	567650	13573	0	63072	308809	0	0.00	0.00	0.00	9460.83	0.00			
5/23/2018	6	820552	266297	13754	61	44383	310588	1687	281.17	2.16	10.13	73.00	281.17			
5/30/2018	7	1061470	240918	13803	49	34417	364817	54229	7747.00	0.05	7.00	81.94	7747.00			
6/5/2018	6	1254529	193059	13828	25	32177	448337	83520	13920.00	0.02	4.18	128.19	13920.00			
6/11/2018	6	1561740	307211	13882	54	51202	448785	448	74.67	7.21	8.97	95.17	74.67			
6/18/2018	7	1967190	405450	13979	98	57921	448839	54	7.71	108.67	13.97	69.10	7.71			
6/25/2018	7	2628320	661130	14097	118	94447	448900	61	8.71	115.67	16.80	93.70	8.71			
7/5/2018	10	3605516	977196	14242	145	97720	448992	92	9.20	94.43	14.48	112.48	9.20			
7/9/2018	4	3982397	376881	14298	56	94220	449028	36	9.00	93.33	14.00	112.17	9.00			
7/16/2018	7	4771826	789429	14418	120	112776	449084	56	8.00	128.68	17.16	109.55	8.00			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/23/2018	7	5425168	653342	14519	101	93335	449137	53	7.57	114.23	14.41	107.92	7.57			
7/30/2018	7	6079782	654614	14618	99	93516	449205	68	9.71	87.71	14.20	109.76	9.71			
8/6/2018	7	6565652	485870	14692	73	69410	449274	69	9.86	63.83	10.49	110.32	9.86			
8/13/2018	7	7127100	561448	14776	84	80207	449344	70	10.00	72.00	12.00	111.40	10.00			
8/20/2018	7	7624594	497494	14850	74	71071	4494	(444850)	(63549.96)	(0.01)	10.63	111.45	(63549.96)			
8/27/2018	7	7966615	342021	14924	74	48860	449487	444993	63570.39	0.01	10.54	77.24	63570.39			
9/4/2018	8	7978235	11620	15030	106	1453	449557	70	8.75	90.69	13.23	1.83	8.75			
9/10/2018	6	7978258	23	15125	95	4	449596	39	6.50	146.46	15.87	0.00	6.50			
9/17/2018	7	8118775	140517	15189	64	20074	449665	69	9.86	55.83	9.17	36.48	9.86			
9/24/2018	7	8467846	349071	15249	60	49867	449737	72	10.29	50.08	8.59	96.80	10.29			
10/1/2018	7	8852456	384610	15315	66	54944	449817	80	11.43	49.20	9.37	97.72	11.43			
10/8/2018	7	9380474	528018	15405	90	75431	449889	72	10.29	75.33	12.91	97.35	10.29			
10/15/2018	7	9837090	456616	15484	79	65231	449956	67	9.57	70.75	11.29	96.33	9.57			
10/22/2018	7	10332758	495668	15571	87	70810	450025	69	9.86	75.65	12.43	94.96	9.86			
10/29/2018	7	10698769	366011	15635	64	52287	450102	77	11.00	49.87	9.14	95.32	11.00			
11/5/2018	7	11048042	349273	15696	61	49896	450175	73	10.43	50.14	8.71	95.43	10.43			
11/12/2018	7	11391445	343403	15755	59	49058	450237	62	8.86	57.10	8.43	97.01	8.86			
11/19/2018	7	11678340	286895	15805	50	40985	450298	61	8.71	49.18	7.14	95.63	8.71			
11/26/2018	7	11961013	282673	15856	51	40382	450356	58	8.29	52.76	7.29	92.38	8.29			
12/3/2018	7	12209614	248601	15902	46	35514	450415	59	8.43	46.58	6.54	90.47	8.43			
12/10/2018	7	12426470	216856	15943	41	30979	450471	56	8.00	44.14	5.89	87.72	8.00			
12/17/2018	7	12704830	278360	15997	54	39766	450528	57	8.14	56.84	7.71	85.91	8.14			
12/24/2018	7	12934891	230061	16045	48	32866	450592	64	9.14	45.00	6.86	79.88	9.14			
12/31/2018	7	13173642	238751	16095	50	34107	450652	60	8.57	50.00	7.14	79.58	8.57			
1/7/2019	7	13403634	229992	16148	53	32856	450713	61	8.71	52.13	7.57	72.32	8.71			
1/14/2019	7	13619713	216079	16189	41	30868	450775	62	8.86	39.68	5.86	87.84	8.86			
1/21/2019	7	13830125	210412	16227	38	30059	450828	53	7.57	43.02	5.43	92.29	7.57			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/28/2019	7	14076825	246700	16271	44	35243	450892	64	9.14	41.25	6.29	93.45	9.14			
2/4/2019	7	14316233	239408	16313	42	34201	450950	58	8.29	43.45	6.00	95.00	8.29			
2/11/2019	7	14573116	256883	16359	46	36698	451009	59	8.43	46.78	6.57	93.07	8.43			
2/18/2019	7	14813946	240830	16402	43	34404	451068	59	8.43	43.73	6.14	93.34	8.43			
2/25/2019	7	15068039	254093	16447	45	36299	451122	54	7.71	50.00	6.43	94.11	7.71			
3/4/2019	7	15298877	230838	16487	40	32977	451169	47	6.71	51.06	5.71	96.18	6.71			
3/11/2019	7	15584316	285439	16534	47	40777	451218	49	7.00	57.55	6.71	101.22	7.00			
3/18/2019	7	16007286	422970	16553	19	60424	451241	23	3.29	49.57	2.71	371.03	3.29			
3/25/2019	7	16121264	113978	16575	22	16283	451272	31	4.43	42.58	3.14	86.35	4.43			
4/1/2019	7	16350290	229026	16619	44	32718	451324	52	7.43	50.77	6.29	86.75	7.43			
4/8/2019	7	16588580	238290	16666	47	34041	451382	58	8.29	48.62	6.71	84.50	8.29			
4/15/2019	7	16763780	175200	16700	34	25029	451441	59	8.43	34.58	4.86	85.88	8.43			
4/22/2019	7	16947154	183374	16735	35	26196	451503	62	8.86	33.87	5.00	87.32	8.86			
4/29/2019	7	17180514	233360	16781	46	33337	451568	65	9.29	42.46	6.57	84.55	9.29			
5/6/2019	7	17461796	281282	16835	54	40183	451647	79	11.29	41.01	7.71	86.82	11.29			
5/14/2019	8	17804465	342669	16903	68	42834	451733	86	10.75	47.44	8.50	83.99	10.75			
5/20/2019	6	18109625	305160	16963	60	50860	451803	70	11.67	51.43	10.00	84.77	11.67			
5/28/2019	8	18674490	564865	17075	112	70608	451886	83	10.38	80.96	14.00	84.06	10.38			
6/3/2019	6	19131610	457120	17169	94	76187	451946	60	10.00	94.00	15.67	81.05	10.00			
6/10/2019	7	19488860	357250	17241	72	51036	452016	70	10.00	61.71	10.29	82.70	10.00			
6/17/2019	7	19880245	391385	17319	78	55912	452084	68	9.71	68.82	11.14	83.63	9.71			
6/24/2019	7	20280240	399995	17400	81	57142	452157	73	10.43	66.58	11.57	82.30	10.43			
7/1/2019	7	20754800	474560	17497	97	67794	452227	70	10.00	83.14	13.86	81.54	10.00			
7/8/2019	7	21218007	463207	17591	94	66172	452300	73	10.43	77.26	13.43	82.13	10.43			
7/15/2019	7	21589297	371290	17678	87	53041	452370	70	10.00	74.57	12.43	71.13	10.00			
7/22/2019	7	21744746	155449	17715	37	22207	452405	35	5.00	63.43	5.29	70.02	5.00			
7/29/2019	7	22113950	369204	17812	97	52743	452471	66	9.43	88.18	13.86	63.44	9.43			
8/5/2019	7	22555800	441850	17904	92	63121	452538	67	9.57	82.39	13.14	80.05	9.57			

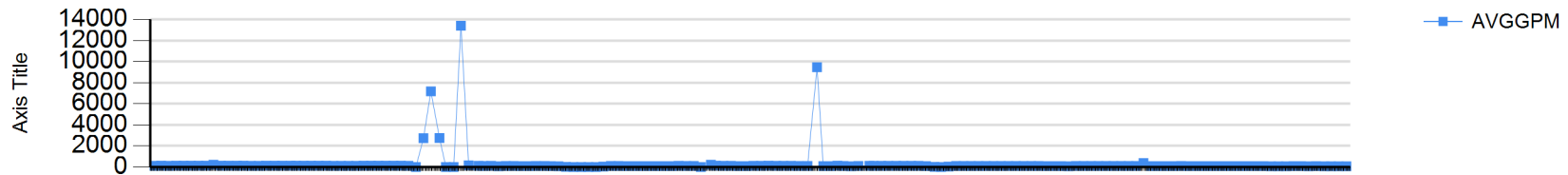
Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

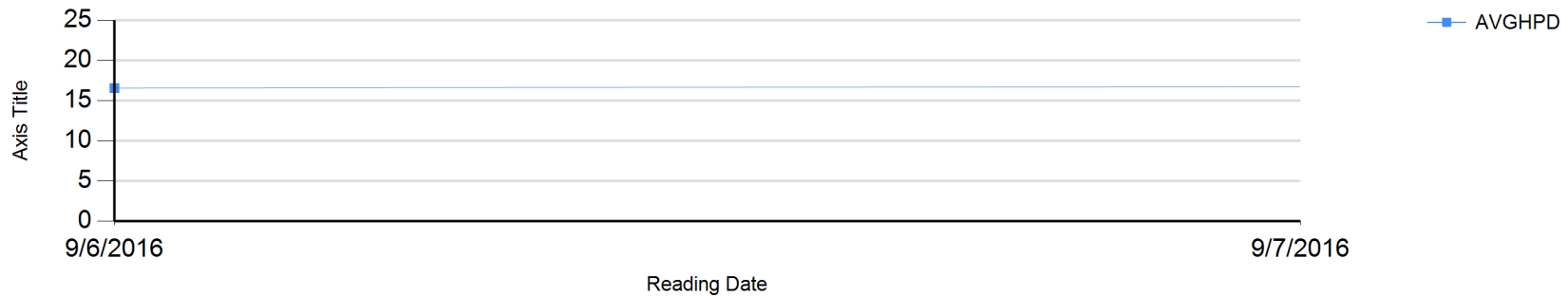
Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

8/12/2019	7	22948640	392840	17989	85	56120	452610	72	10.29	70.83	12.14	77.03	10.29			
8/19/2019	7	23277650	329010	18067	78	47001	452685	75	10.71	62.40	11.14	70.30	10.71			
8/26/2019	7	23646820	369170	18144	77	52739	452761	76	10.86	60.79	11.00	79.91	10.86			
9/3/2019	8	24037380	390560	18234	90	48820	452846	85	10.63	63.53	11.25	72.33	10.63			
9/9/2019	6	24328500	291120	18303	69	48520	452908	62	10.33	66.77	11.50	70.32	10.33			
9/16/2019	7	24708580	380080	18401	98	54297	452977	69	9.86	85.22	14.00	64.64	9.86			
9/23/2019	7	25174822	466242	18518	117	66606	453041	64	9.14	109.59	16.70	66.47	9.14			

Average Gallons per Minute



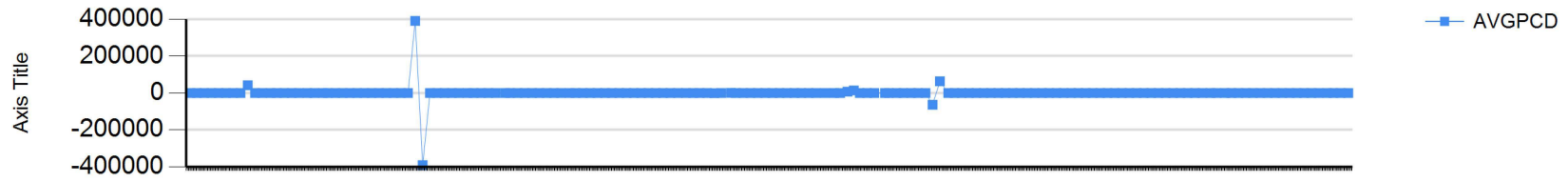
Average Hours per Day



PUMP STATUS REPORT FORM

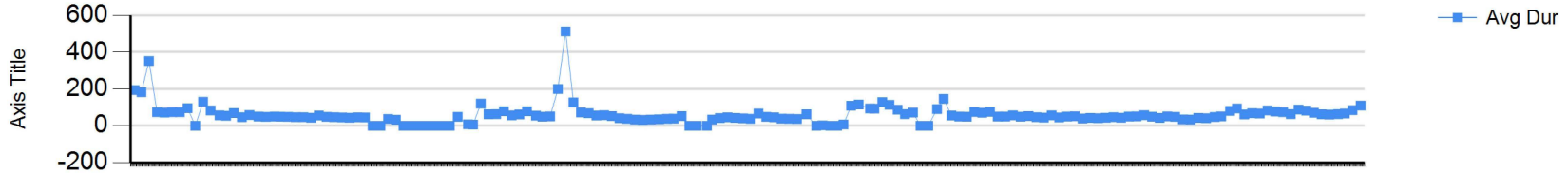
Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

Average Pump Cycles per Day



Reading Date

Average Duration



Reading Date

OFFICIAL COPY

Dec 31 2019

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

WATER SYSTEM NAME: Bayleaf (0392373) : Carlyle Manor

PWS ID #: NC 03-92-373

WELL NO: Well-1

WELL PUMP: _____

BOOSTER PUMP: _____

TANK #1 _____ TANK #2 _____

TYPE _____ TYPE _____

TOTAL CAPACITY _____ TOTAL CAPACITY _____

OPERATING PRESSURE _____ OPERATING PRESSURE _____

Date Read	No. Days	Master Meter Reading	Gallons Pumped	Time Meter Reading	Total Hrs. Oper	GPD Pumped	Impulse Meter Reading	Impulse Meter Count	Avg. Pump Cycles / Day	Avg. Dur (mins)	Hrs / Day	Avg. GPM	Avg Water Pumped / Cycle (gals)	Sodium Hypchlorite Added (gals)	Orthophosphate Added (oz)	Sodium Hydroxide Added (gals)
9/6/2016	8	40388814	0	13368	0	0	12132	0	0.00	0.00	0.00	0.00	0.00			
9/12/2016	6	40388814	0	13368	0	0	12132	0	0.00	0.00	0.00	0.00	0.00			
9/19/2016	7	40388814	0	13368	0	0	12139	7	1.00	0.00	0.00	0.00	1.00			
9/26/2016	7	40388814	0	13368	0	0	12139	0	0.00	0.00	0.00	0.00	0.00			
10/3/2016	7	40388814	0	13368	0	0	12132	(7)	(1.00)	0.00	0.00	0.00	(1.00)			
10/10/2016	7	40393779	4965	13382	14	709	12141	9	1.29	95.33	2.04	5.79	1.29			
10/17/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
10/24/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
10/31/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
11/7/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
11/14/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
11/22/2016	8	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
11/28/2016	6	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
12/5/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
12/12/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

12/19/2016	7	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
12/28/2016	9	40393779	0	13368	(14)	0	12132	(9)	(1.00)	95.33	(1.59)	0.00	(1.00)			
1/3/2017	6	40393779	0	13382	14	0	12141	9	1.50	95.33	2.38	0.00	1.50			
1/11/2017	8	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
1/16/2017	5	40393779	0	13382	0	0	12141	0	0.00	0.00	0.00	0.00	0.00			
1/23/2017	7	40401401	7622	13389	6	1089	12151	10	1.43	38.40	0.91	19.85	1.43			
1/30/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
2/6/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
2/13/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
2/20/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
2/27/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
3/6/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
3/13/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
3/20/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
3/27/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
4/3/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
4/10/2017	7	40401401	0	13389	0	0	42151	30000	4285.71	0.00	0.00	0.00	4285.71			
4/17/2017	7	40401401	0	13389	0	0	12151	(30000)	(4285.71)	0.00	0.00	0.00	(4285.71)			
4/24/2017	7	40401401	0	13389	0	0	12151	0	0.00	0.00	0.00	0.00	0.00			
5/1/2017	7	40401401	0	1389	(12000)	0	12151	0	0.00	(720000.00)	(1714.29)	0.00	0.00			
5/8/2017	7	40402352	951	13390	12001	136	12155	4	0.57	180019.50	1714.47	0.00	0.57			
5/15/2017	7	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
5/22/2017	7	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
5/30/2017	8	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
6/5/2017	6	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
6/12/2017	7	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
6/19/2017	7	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
6/26/2017	7	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/5/2017	9	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
7/10/2017	5	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
7/17/2017	7	40402352	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
7/24/2017	7	40404263	1911	13390	0	273	42155	30000	4285.71	0.00	0.00	31.85	4285.71			
7/31/2017	7	40404548	285	13390	0	41	12155	(30000)	(4285.71)	0.00	0.00	4.75	(4285.71)			
8/7/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
8/14/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
8/21/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
8/28/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
9/5/2017	8	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
9/11/2017	6	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
9/18/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
9/25/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
10/2/2017	7	40404548	0	13390	0	0	12155	0	0.00	0.00	0.00	0.00	0.00			
10/9/2017	7	40534525	129977	13449	59	18568	122202	110047	15721.00	0.03	8.37	36.97	15721.00			
10/16/2017	7	40534772	247	13449	0	35	12203	(109999)	(15714.14)	0.00	0.01	41.17	(15714.14)			
10/23/2017	7	40534772	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
10/30/2017	7	40534772	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
11/6/2017	7	40551885	17113	13449	0	2445	12203	0	0.00	0.00	0.00	285.22	0.00			
11/13/2017	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
11/20/2017	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
11/27/2017	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
12/4/2017	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
12/11/2017	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
12/18/2017	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
12/26/2017	8	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
1/2/2018	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/8/2018	6	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
1/15/2018	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
1/22/2018	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
1/29/2018	7	40551885	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
2/5/2018	7	40556110	4225	13449	0	604	12203	0	0.00	0.00	0.00	70.42	0.00			
2/12/2018	7	40556110	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
2/19/2018	7	40556110	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
2/26/2018	7	40556110	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
3/5/2018	7	40556110	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
3/12/2018	7	40519917	(36193)	13449	0	(5170)	12203	0	0.00	0.00	0.00	(603.22)	0.00			
3/19/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
3/26/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
4/2/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
4/9/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
4/16/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
4/23/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
4/30/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
5/8/2018	8	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
5/17/2018	9	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
5/22/2018	5	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
5/30/2018	8	40519917	0	13449	0	0	12303	100	12.50	0.00	0.00	0.00	12.50			
6/5/2018	6	40519917	0	13449	0	0	12203	(100)	(16.67)	0.00	0.00	0.00	(16.67)			
6/11/2018	6	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
6/18/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
6/25/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
7/5/2018	10	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
7/9/2018	4	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
7/16/2018	7	40519917	0		(13449)	0		(12203)	(1743.29)	66.12	(1921.23)	0.00	(1743.29)			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/23/2018	7	40519917	0	13449	13449	0	12203	12203	1743.29	66.12	1921.2 ₃	0.00	1743.2 ₉			
7/30/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
8/6/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
8/13/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
8/20/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
8/27/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
9/4/2018	8	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
9/10/2018	6	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
9/17/2018	7	40519917	0	13449	0	0	12203	0	0.00	0.00	0.00	0.00	0.00			
9/24/2018	7	40519917	0		(13449)	0		(12203)	(1743.29)	66.12	(1921.2 ₃)	0.00	(1743.2 ₉)			
10/1/2018	7	40519917	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
10/8/2018	7	40519917	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
10/15/201 ₈	7	40519917	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
10/22/201 ₈	7	40520268	351	13448	13448	50	12204	12204	1743.43	66.12	1921.1 ₄	0.00	1743.4 ₃			
10/29/201 ₈	7	40520268	0		(13448)	0		(12204)	(1743.43)	66.12	(1921.1 ₄)	0.00	(1743.4 ₃)			
11/5/2018	7	40520268	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
11/12/201 ₈	7	40523708	3440		0	491		0	0.00	0.00	0.00	57.33	0.00			
11/19/201 ₈	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
11/26/201 ₈	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
12/3/2018	7	40523708	0	13448	13448	0	12204	12204	1743.43	66.12	1921.1 ₄	0.00	1743.4 ₃			
12/10/201 ₈	7	40523708	0		(13448)	0		(12204)	(1743.43)	66.12	(1921.1 ₄)	0.00	(1743.4 ₃)			
12/17/201 ₈	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
12/24/201 ₈	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
12/31/201 ₈	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
1/7/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
1/14/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
1/21/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00	0.00			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

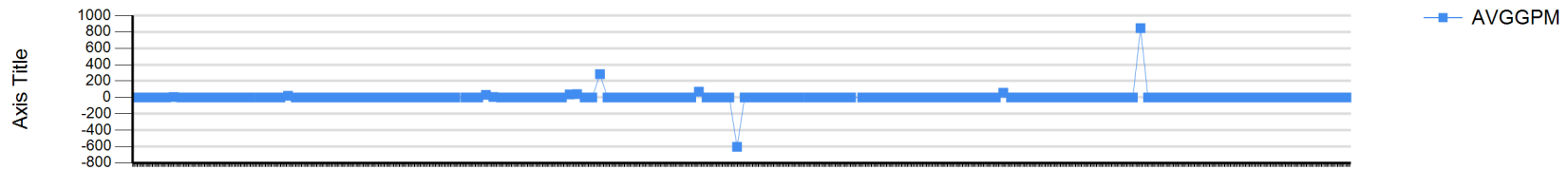
1/28/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
2/4/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
2/11/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
2/18/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
2/25/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
3/4/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
3/11/2019	7	40523708	0		0	0		0	0.00	0.00	0.00	0.00			
3/18/2019	7	40574493	50785		0	7255		0	0.00	0.00	0.00	846.42	0.00		
3/25/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
4/1/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
4/8/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
4/15/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
4/22/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
4/29/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
5/6/2019	7	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
5/14/2019	8	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
5/20/2019	6	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
5/28/2019	8	40574493	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
6/3/2019	6	40576553	2060	13451	13451	343	12205	12205	2034.17	66.13	2241.83	0.00	2034.17		
6/10/2019	7	40577932	1379		(13451)	197		(12205)	(1743.57)	66.13	(1921.57)	0.00	(1743.57)		
6/17/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
6/24/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
7/1/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
7/8/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
7/15/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
7/22/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
7/29/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		
8/5/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00		

PUMP STATUS REPORT FORM

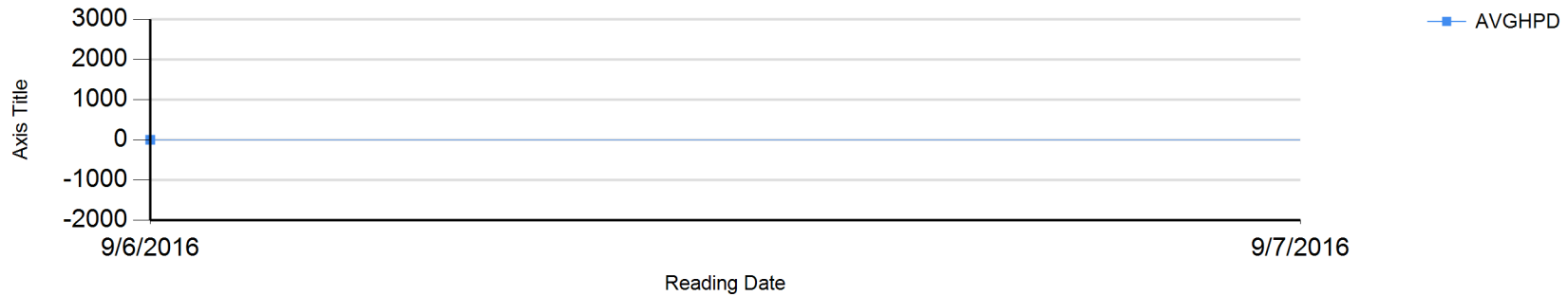
Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

8/12/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
8/19/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
8/26/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
9/3/2019	8	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
9/9/2019	6	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
9/16/2019	7	40577932	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
9/23/2019	7	40577932	0	13151	13151	0	12205	12205	1743.57	64.65	1878.71	0.00	1743.57			

Average Gallons per Minute



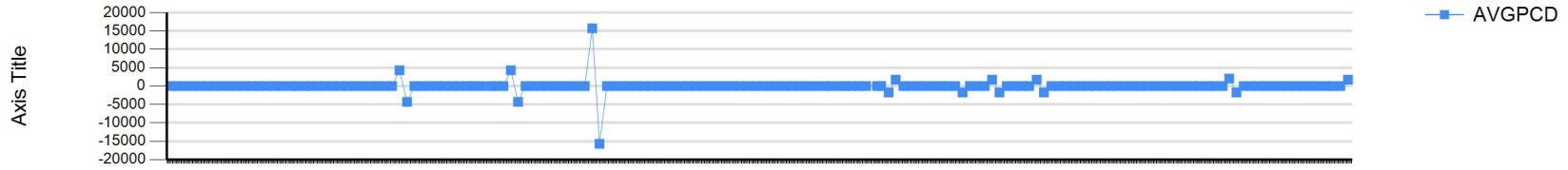
Average Hours per Day



PUMP STATUS REPORT FORM

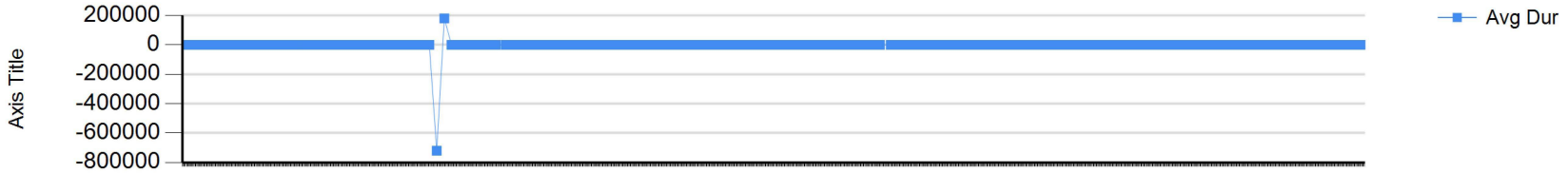
Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

Average Pump Cycles per Day



Reading Date

Average Duration



Reading Date

OFFICIAL COPY

Dec 31 2019

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

WATER SYSTEM NAME: Bayleaf (0392373) : Carlyle Manor

PWS ID #: NC 03-92-373

WELL NO: Well-6

WELL PUMP: _____

BOOSTER PUMP: _____

TANK #1 _____ TANK #2 _____

TYPE _____ TYPE _____

TOTAL CAPACITY _____ TOTAL CAPACITY _____

OPERATING PRESSURE _____ OPERATING PRESSURE _____

Date Read	No. Days	Master Meter Reading	Gallons Pumped	Time Meter Reading	Total Hrs. Oper	GPD Pumped	Impulse Meter Reading	Impulse Meter Count	Avg. Pump Cycles / Day	Avg. Dur (mins)	Hrs / Day	Avg. GPM	Avg Water Pumped / Cycle (gals)	Sodium Hypochlorite Added (gals)	Orthophosphate Added (oz)	Sodium Hydroxide Added (gals)
9/6/2016	8	73529330	321540	26479	133	40193	46312	42	5.25	189.29	16.56	40.45	5.25			
9/12/2016	6	73814226	284896	26586	106	47483	46347	35	5.83	182.23	17.72	44.67	5.83			
9/19/2016	7	74171004	356778	26727	141	50968	46371	24	3.43	352.50	20.14	42.17	3.43			
9/26/2016	7	74389934	218930	26810	83	31276	46438	67	9.57	74.51	11.89	43.86	9.57			
10/3/2016	7	74619329	229395	26889	79	32771	46504	66	9.43	72.18	11.34	48.15	9.43			
10/10/2016	7	74858823	239494	26971	82	34213	46562	58	8.29	84.93	11.73	48.62	8.29			
10/17/2016	7	75123257	264434	27057	85	37776	46630	68	9.71	75.26	12.19	51.67	9.71			
10/24/2016	7	75458811	335554	27169	112	47936	46682	52	7.43	129.58	16.04	49.80	7.43			
10/31/2016	7	75826276	367465	27293	124	52495	46720	38	5.43	196.42	17.77	49.23	5.43			
11/7/2016	7	76149630	323354	27402	109	46193	46772	52	7.43	125.65	15.56	49.49	7.43			
11/14/2016	7	76402373	252743	27490	88	36106	46834	62	8.86	85.26	12.59	47.81	8.86			
11/22/2016	8	76617614	215241	27561	70	26905	46907	73	9.13	57.78	8.79	51.03	9.13			
11/28/2016	6	76773338	155724	27609	48	25954	46961	54	9.00	53.44	8.02	53.96	9.00			
12/5/2016	7	77022030	248692	27684	75	35527	47026	65	9.29	69.05	10.69	55.41	9.29			
12/12/2016	7	77202972	180942	27739	55	25849	47079	53	7.57	62.38	7.87	54.73	7.57			

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

12/19/2016	7	77394038	191066	27791	52	27295	47132	53	7.57	58.75	7.41	61.36	7.57			
12/27/2016	8	77605021	210983	27847	56	26373	47199	67	8.38	50.51	7.05	62.35	8.38			
1/3/2017	7	77763066	158045	27889	42	22578	47251	52	7.43	48.81	6.04	62.27	7.43			
1/11/2017	8	77972729	209663	27945	56	26208	47318	67	8.38	49.97	6.98	62.62	8.38			
1/16/2017	5	78096852	124123	27979	34	24825	47358	40	8.00	50.40	6.72	61.57	8.00			
1/23/2017	7	78250783	153931	28020	41	21990	47409	51	7.29	48.35	5.87	62.42	7.29			
1/30/2017	7	78414739	163956	28063	43	23422	47464	55	7.86	47.35	6.20	62.96	7.86			
2/6/2017	7	78573603	158864	28106	42	22695	47518	54	7.71	47.00	6.04	62.59	7.71			
2/13/2017	7	78733870	160267	28148	43	22895	47573	55	7.86	46.36	6.07	62.85	7.86			
2/20/2017	7	78910429	176559	28196	48	25223	47624	51	7.29	56.47	6.86	61.31	7.29			
2/27/2017	7	79076239	165810	28240	44	23687	47680	56	8.00	47.46	6.33	62.38	8.00			
3/6/2017	7	79236285	160046	28283	43	22864	47734	54	7.71	47.44	6.10	62.47	7.71			
3/13/2017	7	79395432	159147	28325	42	22735	47790	56	8.00	45.11	6.01	63.00	8.00			
3/20/2017	7	79547230	151798	28365	40	21685	47844	54	7.71	44.11	5.67	63.73	7.71			
3/27/2017	7	79717283	170053	28409	45	24293	47903	59	8.43	45.25	6.36	63.69	8.43			
4/3/2017	7	79884027	166744	28453	44	23821	47961	58	8.29	45.31	6.26	63.45	8.29			
4/10/2017	7	80031862	147835	28492	39	21119	48025	64	9.14	36.38	5.54	63.50	9.14			
4/17/2017	7	80245240	213378	28549	57	30483	48104	79	11.29	43.37	8.16	62.28	11.29			
4/24/2017	7	80432968	187728	28601	52	26818	48190	86	12.29	36.21	7.41	60.29	12.29			
5/1/2017	7	80611878	178910	28650	49	25559	48270	80	11.43	36.60	6.97	61.10	11.43			
5/8/2017	7	80809097	197219	28704	55	28174	48356	86	12.29	38.02	7.79	60.31	12.29			
5/15/2017	7	80979818	170721	28751	47	24389	48434	78	11.14	36.08	6.70	60.67	11.14			
5/22/2017	7	81227076	247258	28821	70	35323	48517	83	11.86	50.53	9.99	58.96	11.86			
5/30/2017	8	81469239	242163	28890	69	30270	48604	87	10.88	47.38	8.59	58.75	10.88			
6/5/2017	6	81705016	235777	28961	72	39296	48675	71	11.83	60.59	11.95	54.81	11.83			
6/12/2017	7	81945835	240819	29036	74	34403	48757	82	11.71	54.22	10.59	54.17	11.71			
6/19/2017	7	82175279	229444	29110	75	32778	48833	76	10.86	59.13	10.70	51.06	10.86			
6/26/2017	7	82377037	201758	29174	64	28823	48913	80	11.43	47.63	9.07	52.95	11.43			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/5/2017	9	82757171	380134	29302	128	42237	48990	77	8.56	99.66	14.21	49.54	8.56			
7/10/2017	5	82918566	161395	29356	54	32279	49045	55	11.00	59.24	10.86	49.54	11.00			
7/17/2017	7	83247954	329388	29469	113	47055	49108	63	9.00	107.33	16.10	48.71	9.00			
7/24/2017	7	83555568	307614	29570	102	43945	49171	63	9.00	96.76	14.51	50.46	9.00			
7/31/2017	7	83810139	254571	29650	80	36367	49243	72	10.29	66.58	11.41	53.10	10.29			
8/7/2017	7	84117155	307016	29745	94	43859	49312	69	9.86	82.00	13.47	54.26	9.86			
8/14/2017	7	84367232	250077	29821	77	35725	49389	77	11.00	59.61	10.93	54.48	11.00			
8/21/2017	7	84572248	205016	29878	57	29288	49443	54	7.71	63.56	8.17	59.74	7.71			
8/28/2017	7	84859906	287658	29957	78	41094	49502	59	8.43	79.53	11.17	61.31	8.43			
9/5/2017	8	85149637	289731	30037	81	36216	49591	89	11.13	54.34	10.08	59.91	11.13			
9/11/2017	6	85355198	205561	30094	57	34260	49660	69	11.50	49.22	9.43	60.53	11.50			
9/18/2017	7	85635721	280523	30169	76	40075	49737	77	11.00	58.99	10.81	61.76	11.00			
9/25/2017	7	86071648	435927	30308	139	62275	49762	25	3.57	333.60	19.86	52.27	3.57			
10/2/2017	7	86393784	322136	30454	146	46019	49789	27	3.86	324.00	20.83	36.82	3.86			
10/9/2017	7	86618978	225194	30576	122	32171	49849	60	8.57	121.50	17.36	30.89	8.57			
10/16/2017	7	86811145	192167	30659	83	27452	49919	70	10.00	71.40	11.90	38.45	10.00			
10/23/2017	7	87034975	223830	30749	90	31976	49999	80	11.43	67.28	12.81	41.59	11.43			
10/30/2017	7	87203420	168445	30814	65	24064	50069	70	10.00	55.54	9.26	43.32	10.00			
11/6/2017	7	87397613	194193	30884	71	27742	50141	72	10.29	58.92	10.10	45.78	10.29			
11/13/2017	7	87565982	168369	30943	59	24053	50208	67	9.57	53.01	8.46	47.40	9.57			
11/20/2017	7	87705550	139568	30989	46	19938	50273	65	9.29	42.00	6.50	51.12	9.29			
11/27/2017	7	87844732	139182		(30989)	19883		(50273)	(7181.86)	36.98	(4426.99)	(0.07)	(7181.86)			
12/4/2017	7	87978978	134246	31071	31071	19178	50406	50406	7200.86	36.99	4438.77	0.07	7200.86			
12/11/2017	7	88106998	128020	31108	36	18289	50470	64	9.14	33.94	5.17	58.94	9.14			
12/18/2017	7	88241212	134214	31145	37	19173	50534	64	9.14	34.69	5.29	60.46	9.14			
12/26/2017	8	88402740	161528	31188	44	20191	50606	72	9.00	36.42	5.46	61.60	9.00			
1/2/2018	7	88556009	153269	31230	41	21896	50672	66	9.43	37.64	5.91	61.70	9.43			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/8/2018	6	88698190	142181	31269	39	23697	50733	61	10.17	38.66	6.55	60.30	10.17			
1/15/2018	7	88885244	187054	31322	53	26722	50791	58	8.29	54.52	7.53	59.16	8.29			
1/22/2018	7	89069466	184222	31375	53	26317	50849	58	8.29	54.72	7.56	58.04	8.29			
1/29/2018	7	89261407	191941	31432	57	27420	50912	63	9.00	54.19	8.13	56.22	9.00			
2/5/2018	7	89439495	178088	31485	53	25441	50979	67	9.57	47.46	7.57	56.00	9.57			
2/12/2018	7	89602271	162776	31533	49	23254	51048	69	9.86	42.43	6.97	55.59	9.86			
2/19/2018	7	89740780	138509	31574	41	19787	51105	57	8.14	43.16	5.86	56.30	8.14			
2/26/2018	7	89877415	136635	31614	39	19519	51156	51	7.29	46.12	5.60	58.09	7.29			
3/5/2018	7	90041864	164449	31659	46	23493	51217	61	8.71	45.15	6.56	59.71	8.71			
3/12/2018	7	90187474	145610	31702	43	20801	51279	62	8.86	41.32	6.10	56.83	8.86			
3/19/2018	7	90304075	116601	31734	32	16657	51331	52	7.43	36.58	4.53	61.30	7.43			
3/26/2018	7	90489548	185473	31786	52	26496	51378	47	6.71	66.13	7.40	59.68	6.71			
4/2/2018	7	90674180	184632	31838	52	26376	51438	60	8.57	52.10	7.44	59.06	8.57			
4/9/2018	7	90842620	168440	31887	49	24063	51503	65	9.29	45.14	6.99	57.41	9.29			
4/16/2018	7	91005186	162566	31931	44	23224	51571	68	9.71	38.91	6.30	61.44	9.71			
4/23/2018	7	91179416	174230	31977	46	24890	51642	71	10.14	39.04	6.60	62.85	10.14			
4/30/2018	7	91343200	163784	32022	45	23398	51716	74	10.57	36.73	6.47	60.26	10.57			
5/8/2018	8	91647132	303932	32112	90	37992	51803	87	10.88	61.93	11.23	56.41	10.88			
5/17/2018	9	92014140	367008	32231	119	40779	51899	96	10.67	74.56	13.26	51.27	10.67			
5/23/2018	6	92198170	184030	32292	61	30672	51948	49	8.17	74.82	10.18	50.20	8.17			
5/30/2018	7	92396745	198575	32358	66	28368	52021	73	10.43	53.92	9.37	50.45	10.43			
6/8/2018	9	92621982	225237	32423	65	25026	52087	66	7.33	59.27	7.24	57.58	7.33			
6/11/2018	3	92759830	137848	32465	42	45949	52108	21	7.00	120.29	14.03	54.57	7.00			
6/18/2018	7	93056250	296420	32564	99	42346	52161	53	7.57	111.74	14.10	50.05	7.57			
6/25/2018	7	93365215	308965	32681	117	44138	52213	52	7.43	135.12	16.73	43.97	7.43			
7/5/2018	10	93739665	374450	32825	144	37445	52306	93	9.30	92.58	14.35	43.49	9.30			
7/9/2018	4	93886485	146820	32882	57	36705	52340	34	8.50	100.59	14.25	42.93	8.50			
7/16/2018	7	94151758	265273	32984	102	37896	52386	46	6.57	133.17	14.59	43.30	6.57			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/23/2018	7	94387466	235708	33080	97	33673	52433	47	6.71	123.45	13.81	40.63	6.71			
7/31/2018	8	94647260	259794	33182	102	32474	52504	71	8.88	85.77	12.69	42.66	8.88			
8/6/2018	6	94823820	176560	33249	67	29427	52565	61	10.17	65.61	11.12	44.12	10.17			
8/13/2018	7	95059096	235276	33333	84	33611	52635	70	10.00	72.34	12.06	46.46	10.00			
8/20/2018	7	95207344	148248	33383	50	21178	52689	54	7.71	56.00	7.20	49.02	7.71			
8/27/2018	7	95434330	226986	33457	74	32427	52763	74	10.57	59.59	10.50	51.47	10.57			
9/4/2018	8	95742233	307903	33563	106	38488	52833	70	8.75	90.77	13.24	48.46	8.75			
9/10/2018	6	95936833	194600	33633	70	32433	52862	29	4.83	144.83	11.67	46.33	4.83			
9/17/2018	7	96120561	183728	33697	64	26247	52928	66	9.43	58.55	9.20	47.55	9.43			
9/24/2018	7	96285457	164896	33758	60	23557	53007	79	11.29	45.80	8.61	45.58	11.29			
10/1/2018	7	96491884	206427	33822	64	29490	53086	79	11.29	48.76	9.17	53.59	11.29			
10/8/2018	7	96773942	282058	33913	91	40294	53159	73	10.43	75.04	13.04	51.49	10.43			
10/15/2018	7	96994846	220904	33987	74	31558	53224	65	9.29	68.31	10.57	49.75	9.29			
10/22/2018	7	97251715	256869	34074	87	36696	53292	68	9.71	76.76	12.43	49.21	9.71			
10/29/2018	7	97441223	189508	34137	63	27073	53369	77	11.00	49.09	9.00	50.13	11.00			
11/5/2018	7	97635340	194117	34198	61	27731	53445	76	10.86	48.16	8.71	53.04	10.86			
11/12/2018	7	97824051	188711	34257	59	26959	53507	62	8.86	57.10	8.43	53.31	8.86			
11/19/2018	7	97996670	172619	34307	50	24660	53569	62	8.86	48.39	7.14	57.54	8.86			
11/26/2018	7	98172046	175376	34357	50	25054	53628	59	8.43	50.85	7.14	58.46	8.43			
12/3/2018	7	98333271	161225	34403	46	23032	53687	59	8.43	46.78	6.57	58.41	8.43			
12/10/2018	7	98482320	149049	34444	41	21293	53746	59	8.43	41.69	5.86	60.59	8.43			
12/17/2018	7	98673834	191514	34496	52	27359	53801	55	7.86	56.73	7.43	61.38	7.86			
12/24/2018	7	98839965	166131	34521	25	23733	53834	33	4.71	45.45	3.57	110.75	4.71			
12/31/2018	7	99016651	176686	34521	0	25241	53834	0	0.00	0.00	0.00	2944.77	0.00			
1/7/2019	7	99202951	186300	34521	0	26614	53834	0	0.00	0.00	0.00	3105.00	0.00			
1/14/2019	7	99321465	118514	34550	29	16931	53876	42	6.00	41.43	4.14	68.11	6.00			
1/21/2019	7	99461906	140441	34588	38	20063	53931	55	7.86	41.45	5.43	61.60	7.86			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/28/2019	7	99625524	163618	34632	44	23374	53995	64	9.14	41.25	6.29	61.98	9.14			
2/4/2019	7	99781450	155926	34675	43	22275	54056	61	8.71	42.30	6.14	60.44	8.71			
2/11/2019	7	99946018	164568	34720	45	23510	54116	60	8.57	45.00	6.43	60.95	8.57			
2/18/2019	7	101820	155802	34720	0	22257	54116	0	0.00	0.00	0.00	2596.70	0.00			
2/25/2019	7	265935	164115	34808	45	23445	54232	56	8.00	48.21	6.43	60.78	8.00			
3/4/2019	7	413450	147515	34848	40	21074	54279	47	6.71	51.06	5.71	61.46	6.71			
3/11/2019	7	595421	181971	34896	48	25996	54328	49	7.00	58.78	6.86	63.18	7.00			
3/18/2019	7	753445	158024	34939	43	22575	54382	54	7.71	47.78	6.14	61.25	7.71			
3/25/2019	7	915613	162168	34984	45	23167	54434	52	7.43	51.92	6.43	60.06	7.43			
4/1/2019	7	1077760	162147	35028	44	23164	54487	53	7.57	49.81	6.29	61.42	7.57			
4/8/2019	7	1246702	168942	35074	46	24135	54545	58	8.29	47.59	6.57	61.21	8.29			
4/15/2019	7	1367923	121221	35107	33	17317	54602	57	8.14	34.74	4.71	61.22	8.14			
4/22/2019	7	1502119	134196	35143	36	19171	54667	65	9.29	33.23	5.14	62.13	9.29			
4/29/2019	7	1661284	159165	35188	45	22738	54735	68	9.71	39.71	6.43	58.95	9.71			
5/6/2019	7	1854821	193537	35243	55	27648	54813	78	11.14	42.31	7.86	58.65	11.14			
5/14/2019	8	2087370	232549	35311	68	29069	54902	89	11.13	45.84	8.50	57.00	11.13			
5/20/2019	6	2288966	201596	35370	59	33599	54970	68	11.33	52.06	9.83	56.95	11.33			
5/28/2019	8	2641778	352812	35483	113	44102	55055	85	10.63	79.76	14.13	52.04	10.63			
6/3/2019	6	2909392	267614	35576	93	44602	55116	61	10.17	91.48	15.50	47.96	10.17			
6/10/2019	7	3123161	213769	35650	74	30538	55189	73	10.43	60.82	10.57	48.15	10.43			
6/17/2019	7	3360990	237829	35726	76	33976	55257	68	9.71	67.06	10.86	52.16	9.71			
6/24/2019	7	3603130	242140	35807	81	34591	55333	76	10.86	63.95	11.57	49.82	10.86			
7/1/2019	7	3900550	297420	35903	96	42489	55406	73	10.43	78.90	13.71	51.64	10.43			
7/8/2019	7	4203854	303304	35997	94	43329	55479	73	10.43	77.26	13.43	53.78	10.43			
7/15/2019	7	4523380	319526	36089	92	45647	55550	71	10.14	77.75	13.14	57.89	10.14			
7/22/2019	7	4913660	390280	36200	111	55754	55611	61	8.71	109.18	15.86	58.60	8.71			
7/29/2019	7	5261488	347828	36294	94	49690	55676	65	9.29	86.77	13.43	61.67	9.29			
8/5/2019	7	5588102	326614	36385	91	46659	55742	66	9.43	82.73	13.00	59.82	9.43			

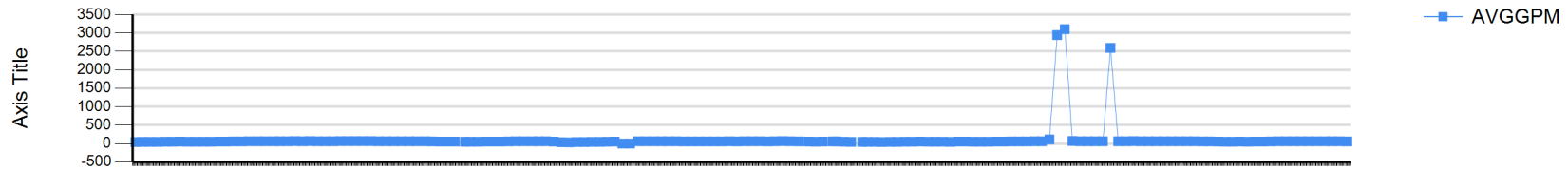
Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

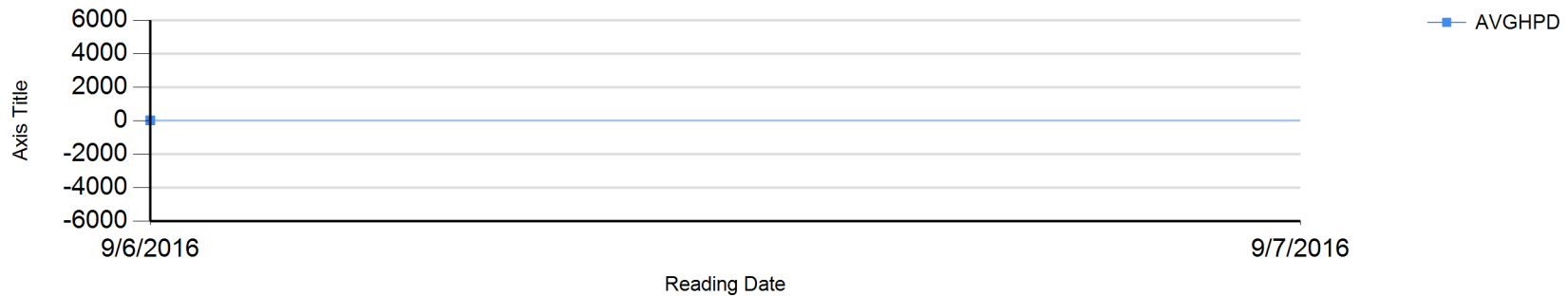
Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

8/12/2019	7	5892300	304198	36468	83	43457	55812	70	10.00	71.14	11.86	61.08	10.00			
8/19/2019	7	6180240	287940	36547	79	41134	55887	75	10.71	63.20	11.29	60.75	10.71			
8/26/2019	7	6459540	279300	36622	75	39900	55961	74	10.57	60.81	10.71	62.07	10.57			
9/3/2019	8	6797660	338120	36713	91	42265	56046	85	10.63	64.24	11.38	61.93	10.63			
9/9/2019	6	7044290	246630	36783	70	41105	56108	62	10.33	67.74	11.67	58.72	10.33			
9/16/2019	7	7389630	345340	36879	96	49334	56175	67	9.57	85.97	13.71	59.95	9.57			
9/23/2019	7	7791255	401625	36996	117	57375	56238	63	9.00	111.62	16.74	57.11	9.00			

Average Gallons per Minute



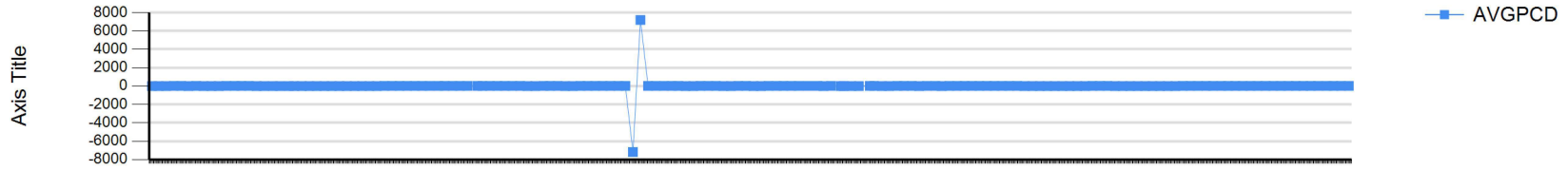
Average Hours per Day



PUMP STATUS REPORT FORM

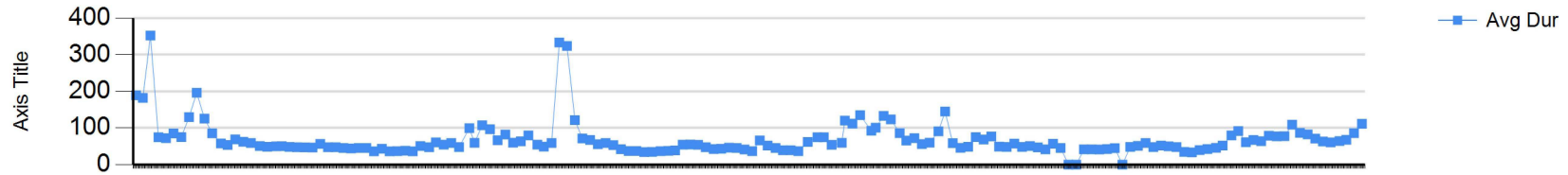
Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

Average Pump Cycles per Day



Reading Date

Average Duration



Reading Date

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

WATER SYSTEM NAME: Bayleaf (0392373) : Carlyle Manor

PWS ID #: NC 03-92-373

WELL NO: Well-4

WELL PUMP: _____

BOOSTER PUMP: _____

TANK #1 _____ TANK #2 _____

TYPE _____ TYPE _____

TOTAL CAPACITY _____ TOTAL CAPACITY _____

OPERATING PRESSURE _____ OPERATING PRESSURE _____

Date Read	No. Days	Master Meter Reading	Gallons Pumped	Time Meter Reading	Total Hrs. Oper	GPD Pumped	Impulse Meter Reading	Impulse Meter Count	Avg. Pump Cycles / Day	Avg. Dur (mins)	Hrs / Day	Avg. GPM	Avg Water Pumped / Cycle (gals)	Sodium Hypochlorite Added (gals)	Orthophosphate Added (oz)	Sodium Hydroxide Added (gals)
9/6/2016	8	33323819	101824	14282	110	12728	34582	42	5.25	157.29	13.76	15.41	5.25			
9/12/2016	6	33420378	96559	14388	106	16093	34617	35	5.83	182.06	17.70	15.15	5.83			
9/19/2016	7	33526049	105671	14529	141	15096	34643	26	3.71	325.85	20.17	12.47	3.71			
9/26/2016	7	33592506	66457	14612	83	9494	34711	68	9.71	73.32	11.87	13.33	9.71			
10/3/2016	7	33684746	92240	14692	80	13177	34778	67	9.57	71.28	11.37	19.31	9.57			
10/10/2016	7	33774606	89860	14774	82	12837	34835	57	8.14	86.11	11.69	18.31	8.14			
10/17/2016	7	33864259	89653	14860	86	12808	34904	69	9.86	74.70	12.27	17.39	9.86			
10/24/2016	7	33940379	76120	14963	104	10874	34955	51	7.29	121.88	14.80	12.25	7.29			
10/31/2016	7	33940455	76	14963	0	11	34957	2	0.29	3.00	0.01	12.67	0.29			
11/7/2016	7	33940455	0	14963	0	0	34957	0	0.00	0.00	0.00	0.00	0.00			
11/14/2016	7	34094589	154134	15036	73	22019	35013	56	8.00	77.68	10.36	35.43	8.00			
11/22/2016	8	34210260	115671	15106	70	14459	93085	58072	7259.00	0.07	8.76	27.50	7259.00			
11/28/2016	6	34297489	87229	15154	48	14538	35139	(57946)	(9657.67)	(0.05)	8.02	30.22	(9657.67)			
12/5/2016	7	34443232	145743	15230	76	20820	35204	65	9.29	69.69	10.79	32.17	9.29			
12/12/2016	7	34541237	98005	15284	54	14001	35257	53	7.57	61.58	7.77	30.03	7.57			

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

12/19/2016	7	34541305	68	15284	0	10	35258	1	0.14	0.00	0.00	1.13	0.14			
12/27/2016	8	34661248	119943	15288	4	14993	35264	6	0.75	38.00	0.48	526.07	0.75			
1/3/2017	7	34756968	95720	15330	42	13674	35317	53	7.57	47.89	6.04	37.71	7.57			
1/11/2017	8	34885502	128534	15386	56	16067	35382	65	8.13	51.51	6.98	38.39	8.13			
1/16/2017	5	34962381	76879	15419	34	15376	35422	40	8.00	50.40	6.72	38.13	8.00			
1/23/2017	7	35059071	96690	15461	41	13813	35473	51	7.29	48.35	5.87	39.21	7.29			
1/30/2017	7	35163380	104309	15504	43	14901	35529	56	8.00	46.50	6.20	40.06	8.00			
2/6/2017	7	35264991	101611	15546	42	14516	35582	53	7.57	47.89	6.04	40.04	7.57			
2/13/2017	7	35368514	103523	15589	43	14789	35637	55	7.86	46.36	6.07	40.60	7.86			
2/20/2017	7	35480378	111864	15637	48	15981	35688	51	7.29	56.47	6.86	38.84	7.29			
2/27/2017	7	35587238	106860	15681	45	15266	35745	57	8.14	46.95	6.37	39.93	8.14			
3/6/2017	7	35689757	102519	15724	43	14646	35798	53	7.57	48.11	6.07	40.20	7.57			
3/13/2017	7	35792588	102831	15766	42	14690	35855	57	8.14	44.63	6.06	40.42	8.14			
3/20/2017	7	35889562	96974	15806	40	13853	35908	53	7.57	44.72	5.64	40.92	7.57			
3/27/2017	7	35999271	109709	15850	45	15673	35969	61	8.71	43.77	6.36	41.09	8.71			
4/3/2017	7	36106563	107292	15894	44	15327	36027	58	8.29	45.41	6.27	40.73	8.29			
4/10/2017	7	36200681	94118	15933	39	13445	36092	65	9.29	35.82	5.54	40.43	9.29			
4/17/2017	7	36335636	134955	15990	57	19279	36144	52	7.43	66.23	8.20	39.19	7.43			
4/24/2017	7	36450732	115096	16007	17	16442	36203	59	8.43	17.08	2.40	114.18	8.43			
5/1/2017	7	36562587	111855	16056	49	15979	36282	79	11.29	37.06	6.97	38.20	11.29			
5/8/2017	7	36686905	124318	16110	55	17760	36368	86	12.29	38.02	7.79	38.02	12.29			
5/15/2017	7	36795684	108779	16158	47	15540	36444	76	10.86	37.34	6.76	38.33	10.86			
5/22/2017	7	36947531	151847	16228	70	21692	36527	83	11.86	50.53	9.99	36.21	11.86			
5/30/2017	8	37093545	146014	16296	68	18252	36613	86	10.75	47.72	8.55	35.58	10.75			
6/5/2017	6	37233874	140329	16368	72	23388	36686	73	12.17	59.26	12.02	32.44	12.17			
6/12/2017	7	37354267	120393	16395	27	17199	36724	38	5.43	42.32	3.83	74.87	5.43			
6/19/2017	7	37483077	128810	16396	1	18401	36725	1	0.14	36.00	0.09	3578.06	0.14			
6/26/2017	7	37600555	117478	16459	63	16783	36829	104	14.86	36.40	9.01	31.03	14.86			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/5/2017	9	37786804	186249	16529	71	20694	36882	53	5.89	80.04	7.86	43.91	5.89			
7/10/2017	5	37854761	67957	16568	39	13591	36924	42	8.40	55.71	7.80	29.04	8.40			
7/17/2017	7	37855348	587	16569	0	84	36943	19	2.71	0.95	0.04	32.61	2.71			
7/24/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
7/31/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
8/7/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
8/14/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
8/21/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
8/28/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
9/5/2017	8	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
9/11/2017	6	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
9/18/2017	7	37855348	0	16569	0	0	36943	0	0.00	0.00	0.00	0.00	0.00			
9/25/2017	7	38097323	241975	16650	82	34568	36958	15	2.14	326.80	11.67	49.36	2.14			
10/2/2017	7	38389097	291774	16796	146	41682	36985	27	3.86	324.44	20.86	33.31	3.86			
10/9/2017	7	38625305	236208	16917	121	33744	37043	58	8.29	124.66	17.21	32.67	8.29			
10/16/2017	7	38797804	172499	17000	83	24643	37113	70	10.00	71.31	11.89	34.56	10.00			
10/23/2017	7	38987734	189930	17090	90	27133	37190	77	11.00	69.74	12.79	35.37	11.00			
10/30/2017	7	39125498	137764	17144	54	19681	31253	(5937)	(848.14)	(0.55)	7.76	42.28	(848.14)			
11/6/2017	7	39279908	154410	17214	70	22059	37331	6078	868.29	0.69	10.01	36.71	868.29			
11/13/2017	7	39414127	134219	17273	59	19174	37398	67	9.57	53.01	8.46	37.79	9.57			
11/20/2017	7	39520696	106569	17319	46	15224	37466	68	9.71	40.24	6.51	38.95	9.71			
11/27/2017	7	39623854	103158	17362	44	14737	37534	68	9.71	38.38	6.21	39.52	9.71			
12/4/2017	7	39718539	94685	17401	39	13526	37598	64	9.14	36.56	5.57	40.46	9.14			
12/11/2017	7	39808534	89995	17438	37	12856	37662	64	9.14	34.31	5.23	40.98	9.14			
12/18/2017	7	39902119	93585	17475	37	13369	37728	66	9.43	33.64	5.29	42.16	9.43			
12/26/2017	8	40017636	115517	17519	44	14440	37800	72	9.00	36.42	5.46	44.06	9.00			
1/2/2018	7	40124745	107109	17561	42	15301	37865	65	9.29	38.86	6.01	42.40	9.29			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/8/2018	6	40224963	100218	17600	39	16703	37929	64	10.67	36.56	6.50	42.83	10.67			
1/15/2018	7	40357265	132302	17653	53	18900	37987	58	8.29	54.72	7.56	41.68	8.29			
1/22/2018	7	40487455	130190	17705	53	18599	38045	58	8.29	54.62	7.54	41.10	8.29			
1/29/2018	7	40624117	136662	17762	57	19523	38109	64	9.14	53.25	8.11	40.10	9.14			
2/5/2018	7	40752224	128107	17816	53	18301	38180	71	10.14	45.13	7.63	39.98	10.14			
2/12/2018	7	40867690	115466	17864	49	16495	38249	69	9.86	42.52	6.99	39.35	9.86			
2/19/2018	7	40962142	94452	17901	37	13493	38304	55	7.86	40.04	5.24	42.89	7.86			
2/26/2018	7	41057454	95312	17940	39	13616	38355	51	7.29	46.00	5.59	40.63	7.29			
3/5/2018	7	41171393	113939	17986	46	16277	385	(37970)	(5424.33)	(0.07)	6.54	41.46	(5424.33)			
3/12/2018	7	41272740	101347	18027	41	14478	38480	38095	5442.19	0.07	5.91	40.80	5442.19			
3/19/2018	7	41372006	99266	18066	39	14181	38539	59	8.43	39.56	5.56	42.53	8.43			
3/26/2018	7	41498183	126177	18118	51	18025	38587	48	6.86	64.13	7.33	40.99	6.86			
4/2/2018	7	41625830	127647	18170	52	18235	38649	62	8.86	50.23	7.41	40.99	8.86			
4/9/2018	7	41723343	97513	18218	49	13930	388	(38261)	(5465.89)	(0.08)	6.96	33.37	(5465.89)			
4/16/2018	7	41723343	0	18218	0	0	388	0	0.00	0.00	0.00	0.00	0.00			
4/23/2018	7	41772050	48707	18237	19	6958	38750	38362	5480.31	0.03	2.69	43.18	5480.31			
4/30/2018	7	41885891	113841	18282	45	16263	38833	83	11.86	32.46	6.41	42.26	11.86			
5/8/2018	8	42015399	129508	18357	75	16189	39401	568	71.00	7.93	9.39	28.74	71.00			
5/17/2018	9	42176889	161490	18476	119	17943	39492	91	10.11	78.73	13.27	22.54	10.11			
5/23/2018	6	42270831	93942	18537	61	15657	39541	49	8.17	74.08	10.08	25.88	8.17			
5/30/2018	7	42361826	90995	18602	65	12999	39613	72	10.29	54.25	9.30	23.30	10.29			
6/8/2018	9	42377726	15900	18609	7	1767	39626	13	1.44	32.77	0.79	37.32	1.44			
6/11/2018	3	42480890	103164	18652	43	34388	39647	21	7.00	121.43	14.17	40.46	7.00			
6/18/2018	7	42707262	226372	18750	99	32339	39703	56	8.00	105.64	14.09	38.26	8.00			
6/25/2018	7	42961239	253977	18867	117	36282	39755	52	7.43	134.65	16.67	36.27	7.43			
7/5/2018	10	43260516	299277	19009	142	29928	39849	94	9.40	90.77	14.22	35.08	9.40			
7/9/2018	4	43376111	115595	19067	58	28899	39883	34	8.50	101.82	14.43	33.39	8.50			
7/16/2018	7	43594845	218734	19185	118	31248	39942	59	8.43	120.31	16.90	30.82	8.43			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

7/23/2018	7	43800088	205243	19287	102	29320	39996	54	7.71	113.00	14.53	33.64	7.71			
7/31/2018	8	44024096	224008	19394	107	28001	40072	76	9.50	84.32	13.35	34.96	9.50			
8/6/2018	6	44152990	128894	19460	67	21482	40134	62	10.33	64.35	11.08	32.30	10.33			
8/13/2018	7	44315073	162083	19545	85	23155	40206	72	10.29	70.83	12.14	31.78	10.29			
8/20/2018	7	44486631	171558	19620	75	24508	40276	70	10.00	63.86	10.64	38.38	10.00			
8/27/2018	7	44654863	168232	19693	73	24033	40350	74	10.57	59.51	10.49	38.20	10.57			
9/4/2018	8	44876260	221397	19798	105	27675	40422	72	9.00	87.75	13.16	35.04	9.00			
9/10/2018	6	45077390	201130	19894	95	33522	40462	40	6.67	142.80	15.87	35.21	6.67			
9/17/2018	7	45221160	143770	19957	64	20539	40527	65	9.29	58.89	9.11	37.56	9.29			
9/24/2018	7	45359536	138376	20017	59	19768	40600	73	10.43	48.66	8.46	38.96	10.43			
10/1/2018	7	45512857	153321	20083	66	21903	40684	84	12.00	47.21	9.44	38.66	12.00			
10/8/2018	7	45722547	209690	20173	90	29956	40756	72	10.29	75.33	12.91	38.66	10.29			
10/15/2018	7	45898111	175564	20252	79	25081	40823	67	9.57	70.75	11.29	37.04	9.57			
10/22/2018	7	46101111	203000	20339	87	29000	40894	71	10.14	73.52	12.43	38.89	10.14			
10/29/2018	7	46238835	137724	20402	63	19675	40973	79	11.29	47.85	9.00	36.43	11.29			
11/5/2018	7	46387620	148785	20464	62	21255	41052	79	11.29	47.09	8.86	40.00	11.29			
11/12/2018	7	46530021	142401	20522	58	20343	41119	67	9.57	51.94	8.29	40.92	9.57			
11/19/2018	7	46565730	35709	20537	15	5101	41145	26	3.71	34.62	2.14	39.68	3.71			
11/26/2018	7	46682958	117228	20584	47	16747	41209	64	9.14	44.06	6.71	41.57	9.14			
12/3/2018	7	46798677	115719	20628	44	16531	41272	63	9.00	41.90	6.29	43.83	9.00			
12/10/2018	7	46906738	108061	20670	42	15437	41332	60	8.57	42.00	6.00	42.88	8.57			
12/17/2018	7	47045932	139194	20725	55	19885	41394	62	8.86	53.23	7.86	42.18	8.86			
12/24/2018	7	47168852	122920	20773	48	17560	41461	67	9.57	42.99	6.86	42.68	9.57			
12/31/2018	7	47299724	130872	20823	50	18696	41522	61	8.71	49.18	7.14	43.62	8.71			
1/7/2019	7	47437223	137499	20876	53	19643	41584	62	8.86	51.29	7.57	43.24	8.86			
1/14/2019	7	47535395	98172	20918	42	14025	41645	61	8.71	41.31	6.00	38.96	8.71			
1/21/2019	7	47634600	99205	20956	38	14172	41699	54	7.71	42.22	5.43	43.51	7.71			

Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

1/28/2019	7	47747783	113183	20999	43	16169	41762	63	9.00	40.95	6.14	43.87	9.00			
2/4/2019	7	47863760	115977	21017	18	16568	41791	29	4.14	37.24	2.57	107.39	4.14			
2/11/2019	7	47982520	118760	21062	45	16966	41852	61	8.71	44.26	6.43	43.99	8.71			
2/18/2019	7	48098557	116037	21105	43	16577	41917	65	9.29	39.69	6.14	44.98	9.29			
2/25/2019	7	48204902	106345	21149	44	15192	41972	55	7.86	48.00	6.29	40.28	7.86			
3/4/2019	7	48313358	108456	21189	40	15494	42022	50	7.14	48.00	5.71	45.19	7.14			
3/11/2019	7	48427100	113742	21236	47	16249	42073	51	7.29	55.29	6.71	40.33	7.29			
3/18/2019	7	48546954	119854	21279	43	17122	42129	56	8.00	46.07	6.14	46.46	8.00			
3/25/2019	7	48662470	115516	21323	44	16502	42184	55	7.86	48.00	6.29	43.76	7.86			
4/1/2019	7	48785799	123329	21367	44	17618	42237	53	7.57	49.81	6.29	46.72	7.57			
4/8/2019	7	48911588	125789	21413	46	17970	42298	61	8.71	45.25	6.57	45.58	8.71			
4/15/2019	7	49006750	95162	21446	33	13595	42357	59	8.43	33.56	4.71	48.06	8.43			
4/22/2019	7	49110090	103340	21482	36	14763	42422	65	9.29	33.23	5.14	47.84	9.29			
4/29/2019	7	49356030	245940	21582	100	35134	42464	42	6.00	142.86	14.29	40.99	6.00			
5/6/2019	7	49506290	150260	21637	55	21466	42554	90	12.86	36.67	7.86	45.53	12.86			
5/14/2019	8	49683365	177075	21704	67	22134	42644	90	11.25	44.67	8.38	44.05	11.25			
5/20/2019	6	49836390	153025	21763	59	25504	42716	72	12.00	49.17	9.83	43.23	12.00			
5/28/2019	8	50092796	256406	21860	97	32051	42798	82	10.25	70.98	12.13	44.06	10.25			
6/3/2019	6	50308355	215559	21930	70	35927	42857	59	9.83	71.19	11.67	51.32	9.83			
6/10/2019	7	50470545	162190	22003	73	23170	42936	79	11.29	55.44	10.43	37.03	11.29			
6/17/2019	7	50652810	182265	22080	77	26038	43005	69	9.86	66.96	11.00	39.45	9.86			
6/24/2019	7	50838778	185968	22161	81	26567	43083	78	11.14	62.31	11.57	38.27	11.14			
7/1/2019	7	50881360	42582	22178	17	6083	43097	14	2.00	72.86	2.43	41.75	2.00			
7/8/2019	7	50881360	0		(22178)	0		(43097)	(6156.71)	30.88	(3168.29)	0.00	(6156.71)			
7/15/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
7/22/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
7/29/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
8/5/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			

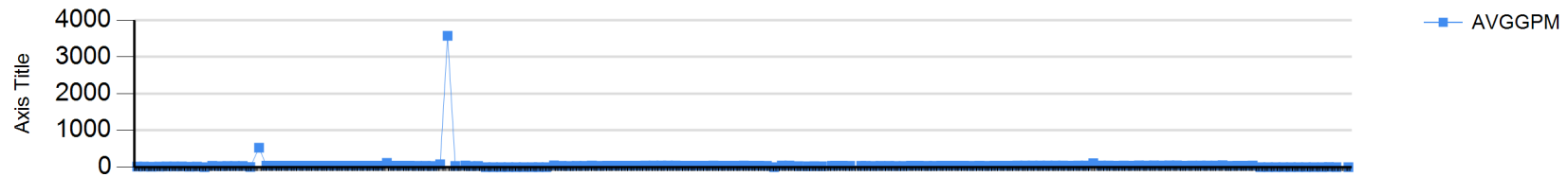
Dec 31 2019 OFFICIAL COPY

PUMP STATUS REPORT FORM

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A

8/12/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
8/19/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
8/26/2019	7	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
9/3/2019	8	50881360	0		0	0		0	0.00	0.00	0.00	0.00	0.00			
9/9/2019	6	51022318	140958	22178	22178	23493	43100	43100	7183.33	30.87	3696.33	0.11	7183.33			
9/16/2019	7	51022318	0		(22178)	0		(43100)	(6157.14)	30.87	(3168.29)	0.00	(6157.14)			
9/27/2019	11	51022318	0		0	0		0	0.00	0.00	0.00	0.00	0.00			

Average Gallons per Minute



Reading Date

Average Hours per Day

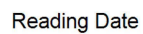
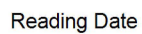


Reading Date

OFFICIAL COPY

Dec 31 2019

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



www.encolabs.com

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 1(IOC) - CARLYLE MANOR(212) - END OF FALLS BRIDGE ROAD

Facility ID No: P49

Location Code: 049

Collected By: Don Wilson

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: 0 -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.441 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.161 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		31 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		5.5 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	6.3 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	08/06/2014	1:49 pm
ANALYSES COMPLETED:	08/13/2014	2:23 pm

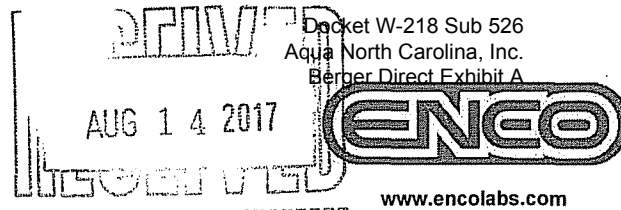
Laboratory Log #: C409899-01

Certified By:

Link Thrower

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515



OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 1(IOC) - CARLYLE MANOR(212) - END OF FALLS BRIDGE ROAD

Facility ID No: P49

Location Code: 049

Collected By: Terry Hawley

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: 0 -

Collection Date	Collection Time
07/21/17	09:50 am

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.746 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.159 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		42.0 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		30 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.0 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	07/27/2017	11:13 am
ANALYSES COMPLETED:	08/04/2017	12:30 pm

Laboratory Log #: CA11119-01

Certified By:

Bill Scott

Bill Scott

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berney Direct Exhibit A



www.encolabs.com

OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373

County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 1(IOC) - CARLYLE MANOR(212) - END OF FALLS BRIDGE ROAD

Facility ID No: P49

Location Code: 049

Collected By: Terry Hawley

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: () -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.746 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.159 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		42.0 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		30 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.0 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

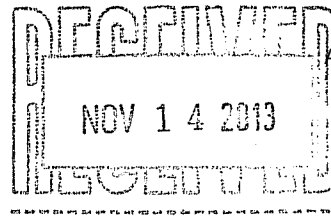
	DATE:	TIME:
ANALYSES BEGUN:	07/27/2017	11:13 am
ANALYSES COMPLETED:	08/04/2017	12:30 pm

Laboratory Log #: CA11119-01

Certified By: Bill Scott Bill Scott

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515



Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



www.encolabs.com

OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 4(IOC) - CARLYLE MANOR(212) -

Facility ID No: P3B

Location Code: 068

Collected By: Don Wilson

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: 0 -

Collection Date	Collection Time
10/28/13	09:15 am

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		2 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.673 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		19 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		20 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.2 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	10/30/2013	12:09 pm
ANALYSES COMPLETED:	11/11/2013	4:00 pm

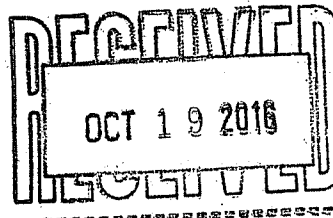
Laboratory Log #: C312493-01

Certified By:

Link Thrower

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515



Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



www.encolabs.com

OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 4(IOC) - CARLYLE MANOR(212) -

Facility ID No: P3B

Location Code: 068

Collected By: Terry Hawley

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Collection Date	Collection Time
10/03/16	11:15 am

Phone #: (919) 653-5779

Fax #: 0 -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L		0.432 mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		1.21 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.682 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		18.8 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		18 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.2 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	10/04/2016	1:24 pm
ANALYSES COMPLETED:	10/11/2016	4:28 pm

Laboratory Log #: CZ13730-01

Certified By:

Bill Scott

Bill Scott

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515

Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



www.encolabs.com

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 6(IOC) - CARLYLE MANOR(212) - BAYLEAF MASTER

Facility ID No: P60

Location Code: 059

Collected By: Don Wilson

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: 0 -

Collection Date	Collection Time
08/04/14	11:00 am

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.144 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.314 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		17 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		22 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.4 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	08/06/2014	1:49 pm
ANALYSES COMPLETED:	08/13/2014	2:25 pm

Laboratory Log #: C409899-02

Certified By:

Link Thrower

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515



OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373

County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 6(IOC) - CARLYLE MANOR(212) - BAYLEAF MASTER

Facility ID No: P60

Location Code: 059

Collected By: Terry Hawley

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: 0 -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L	X	mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.290 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		15.7 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		21 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.0 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	07/11/2017	12:51 pm
ANALYSES COMPLETED:	07/17/2017	5:38 pm

Laboratory Log #: CA07666-02

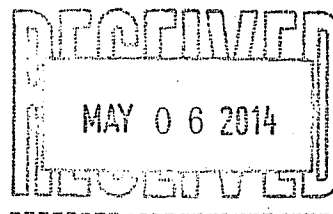
Certified By:

Bill Scott

Bill Scott

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515



Docket W-218 Sub 526
Aqua North Carolina, Inc.



www.encolabs.com

OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373

County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 7(IOC) - CARLYLE MANOR(212) - Carlyle Manor #7

Facility ID No: P1D

Location Code: E06

Collected By: Brandon Rhiner

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Phone #: (919) 653-5779

Fax #: 0 -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.0872 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.585 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		10 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L	X	mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.1 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	04/23/2014	2:51 pm
ANALYSES COMPLETED:	05/02/2014	3:51 pm

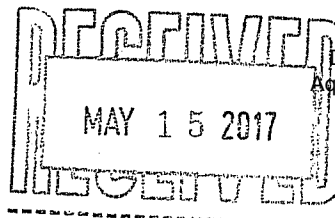
Laboratory Log #: C404024-01

Certified By:

Link Thrower

COMMENTS:

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary, NC 27511
Ph: (919) 467-3090 Fax: (919) 467-3515



Docket W-218 Sub 526
Aqua North Carolina, Inc.
Berger Direct Exhibit A



www.encolabs.com

OFFICIAL COPY

Dec 31 2019

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 03-92-373 County: Wake

Name of Water System: Bayleaf

Sample Type: ☒ Entry Point ☐ Special/Non-compliance

Location Where Collected: Well: 7(IOC) - CARLYLE MANOR(212) - Carlyle Manor #7

Facility ID No: PID

Location Code: E06

Collected By: Terry Hawley

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Mark English

202 MacKenan Court

Cary, NC 27511

Collection Date	Collection Time
04/17/17	08:55 am

Phone #: (919) 653-5779

Fax #: 0 -

LABORATORY ID #: 37724

☐ SAMPLE UNSATISFACTORY

☐ RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e. < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L		0.523 mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L	X	mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.514 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.486 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		16.3 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		14 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.2 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	04/18/2017	1:23 pm
ANALYSES COMPLETED:	05/09/2017	3:52 pm

Laboratory Log #: CA02813-01

Certified By:

Bill Scott

Bill Scott

COMMENTS:

Bayleaf Master System - NC 03-92-373

Well Name	Date	Fe Raw Total	Fe Raw Sol	Fe Raw Insol	Mn Raw Total	Mn Raw Sol	Mn Raw Insol	Total Fe POE	Sol. Fe POE	Insol. Fe POE	Total Mn POE	Sol Mn POE	Insol Mn POE
Carlyle Manor #4	12/20/2010							0.3			0.551		
	10/28/2013							2			0.673		
	10/3/2016							1.21			0.682		
	10/2/2017							1.22	0.928	0.292	0.681	0.658	0.023
	10/23/2017							0.949	0.36	0.589	0.623	0.51	0.113
	11/6/2017							0.736	< 0.022	0.736	0.567	0.461	0.106
	11/17/2017							0.731	0.264	0.467	0.593	0.502	0.091
	12/11/2017	0.802	0.17	0.632	0.662	0.625	0.037	0.813	0.228	0.585	0.293	0.0993	0.1937
	1/5/2018	0.806	<0.0220	0.806	0.622	0.616	0.006	0.766	<0.0220	0.766	0.584	0.543	0.041
	2/2/2018	0.931	<0.0220	0.931	0.624	0.618	0.006	0.647	<0.0220	0.647	0.531	0.437	0.094
	3/2/2018	0.0821	0.0485	0.0821	0.578	0.532	0.046	0.57	0.0511	0.5189	0.582	0.484	0.098
	4/6/2018	0.835	<0.0220	0.835	0.619	0.61	0.009	1.03	<0.0220	1.03	0.637	0.413	0.224
	5/1/2018	1.06	<0.00600	1.06	0.61	0.471	0.139	0.623	0.00974	0.61326	0.556	0.46	0.096
	6/11/2018	1.19	<0.0220	1.19	0.672	0.672	0	1	<0.0220	1	0.684	0.609	0.075
	7/8/2018	1.39	<0.0220	1.39	0.634	0.587	0.047	1.08	<0.0220	1.08	0.683	0.584	0.099
	8/5/2018	1.02	<0.0220	1.02	0.625	0.621	0.004	0.993	0.19	0.803	0.599	0.539	0.06
	9/7/2018	1.15	0.0551	1.0949	0.58	0.575	0.005	1.15	0.137	1.013	0.594	0.58	0.014
	10/5/2018	0.893	0.282	0.611	0.589	0.539	0.05	0.889	0.23	0.659	0.592	0.525	0.067
	11/5/2018	1.13	< 0.022	1.13	0.597	0.588	0.009	1.01	< 0.022	1.01	0.647	0.635	0.012
	12/26/2018							1.13			0.647		
	1/11/2019	0.969	< 0.022	0.969	0.575	0.572	0.003	0.989	0.0238	0.9652	0.574	0.555	0.019
	2/11/2019	1.15	0.0841	1.0659	0.627	0.575	0.052	0.935	0.293	0.642	0.566	0.525	0.041

Carlyle Manor Well-1

Date	Total POE Fe	Total POE Mn
8/4/2014	0.441	0.161
7/21/2017	0.746	0.159

Carlyle Manor Well-6

Date	Total POE Fe	Total POE Mn
8/4/2014	0.1440	0.314
7/10/2017	0.0595	0.290

Well Name	Date	Fe Raw Total	Fe Raw Sol	Fe Raw Insol	Mn Raw Total	Mn Raw Sol	Mn Raw Insol	Total Fe POE	Sol. Fe POE	Insol. Fe POE	Total Mn POE	Sol Mn POE	Insol Mn POE
Carlyle Manor #7	4/22/2014							0.087			0.585		
	4/17/2017							0.514			0.486		
	7/16/2018	0.418	<0.0220	0.418	0.474	0.462	0.012	0.496	0.0976	0.398	0.472	0.444	0.028

*Raw samples are taken directly at the wellhead before chemical treatment and point of entry (POE) samples are taken after chemical injection and treatment but before the tank and distribution system.

Water Quality Complaints From 9/30/2018 - 9/30/2019

SO	SO Type	CSR Notes	Date of SO	Completion Date	Premise	Address	City State Zip	Subdivision	FSR Notes	FSR Comments
12130399	LABD-S	KAREN REPORTED YELLOW WATER S/O PER JUSTINA	8/20/2019	8/20/2019	592882	6100 CRESCENT KNOLL DR	RALEIGH, NC 27614-8954	CARLYLE MANOR	Cl2 .68 ph 7.1 po4 .35 fe .11/.00 mn .131/.115/.095flushed line for approx 15 min and started clearing. The barony bw last nigThat could have broke something off wall. open carlyle 1 to bring fresh wat	
12130611	LABD-S	RICHARD REPORTED BROWN WATER PLEASE CHECK	8/20/2019	8/20/2019	591895	6001 CRESCENT KNOLL DR	RALEIGH, NC 27614-8953	CARLYLE MANOR	Cl2 .46 ph 7.4 po4 .50 fe .07 mn .053Water cleared within about 5 min. cust was told by call cent aqua was flushFlushed neighbors house too cleared in about 10min as well	
12130550	LABD-S	RICHARD REPORTED BROWN WATER PLEASE CHECK	8/20/2019	8/20/2019	591895	6001 CRESCENT KNOLL DR	RALEIGH, NC 27614-8953	CARLYLE MANOR		
12052887	LABD-S	CYNTHIA REPORTS BROWN/ RED WATER. SHE ADV IT LOOKS LIKE MUD.	7/5/2019	7/8/2019	531928	1120 FALLS BRIDGE DR	RALEIGH, NC 27614-8940	CARLYLE MANOR	Water is clear at front faucet and side faucet. Customer does not know whenHot water heaters where Flushed last. Cus was running a bath at same timeWe where testing outside and had discolored water. Outside was clear	
12045595	LABD-S	has Orange/dk brown water	6/29/2019	6/29/2019	537901	12444 BAYLEAF CHURCH RD	RALEIGH, NC 27614-9167	CARLYLE MANOR	Cl2=0.53/PO4=0.40/Ph=7.2/Fe=0.69/ Mn=0.116 , spoke with customer, he said Water was clearing up now , I will go by & check the well nearest to himCustomer will call back if it happens again	
12033762	LABD-S	BLACK SILT IN WATER ONGOING FOR SEVERAL WEEKS - ALL FIXTURES - STEVEN	6/24/2019	6/24/2019	537901	12444 BAYLEAF CHURCH RD	RALEIGH, NC 27614-9167	CARLYLE MANOR	Cl2 .71 -ph 7.2-po4.66 fe .13/.58 pre flush mn .131/.189 pre flushWater was brown with black sediment . got water clear but mn still high andStill black sediment in water. told cust i would check back with them wedne	
11200772	LABD-S	PLEASE CHECK ALL RESIDUALS CUSTOMER HAS DISCOLORED WATER IN UPSTAIRS SINK	5/14/2019	5/14/2019	592902	6101 CARLYLE DR	RALEIGH, NC 27614-8947	CARLYLE MANOR	Cl2 .51/.61 pH 7.2/7.2 Po4 1.41/1.07 Fe 1.43/.26 MN .240/.243Pre/post results above and flushed for about 25 min. Water cleared but MNStill high. Check the Barony to make sure it's good as put online last Mond	
10897133	LABD-S		11/23/2018	11/24/2018	540250	1308 WOODGATE MANOR CT	RALEIGH, NC 27614-9480	CARLYLE MANOR	Flushed line, checked residuals, (Cl2-0.50), (ph-7.0), (Fe-0.19), (Mn-0.18)(PO4-0.49) left door hangerFSR:pregmob, EVT:Lab	
10887668	LABD-S	BRONW WATER FOR 1 DAY - DIANE11/16 please flush service line and leave door tag	11/16/2018	11/16/2018	525159	1020 FALLS BRIDGE DR	RALEIGH, NC 27614-8938	CARLYLE MANOR	Checked water at left faucet, slightly discolored but cleared by end testinCHL 1.23 , pH 7.2 , po-4 / c-quest 0.92 , iron 0.21 , manganese 0.028 . Spoke to customer I have 2 blow-offs running 1 at end of Carlyle Dr& fallsb	
10880292	LABD-S	WATER IS BLACK COMING OUT OF FAUCETS - DIANE11/13 please flush customers service line and leave door tag	11/13/2018	11/13/2018	592902	6101 CARLYLE DR	RALEIGH, NC 27614-8947	CARLYLE MANOR	Cl2 1.67 & 1.36 pH 7.2 & 7.2 Po4 1.87 & .54 MN limited & .800 Flushed for 30min Checked wells and found well 4 feeding1.5 cl2 so got residual down. Meeting cust @ 8:00am Wednesday	
10837215	LABD-S	WATER IS YELLOW COMING OUT OF FAUCETS - KAREN. contacted 10/18 off/onyellow water past couple weeks since storm. Please flush service line	10/18/2018	10/18/2018	592882	6100 CRESCENT KNOLL DR	RALEIGH, NC 27614-8954	CARLYLE MANOR	Pre flush: Cl2 .29 pH 7.4 Po4 limited Fe limited MN .462Post flush Cl2 .48 pH 7.3 Po4 .93 Fe .05 MN .188 Water dingy at first but cleared up after few minutes. Left door tag	