

**APPENDIX A**

**BLUE WATER COVE**

- A. SIMPLE MAP OF SYSTEM SHOWING  
THE LOCATION OF EACH WELL,  
WITH WELLS IDENTIFIED

**FILED CONFIDENTIALLY**

**APPENDIX A**

**BLUE WATER COVE**

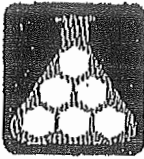
**B. DEH/PWSS APPROVAL LETTER  
FOR EACH WELL**

**NOT AVAILABLE**

**APPENDIX A**

**BLUE WATER COVE**

**C. ORIGINAL INORGANIC ANALYSIS FOR EACH WELL  
SUBMITTED TO DEH FOR WELL APPROVAL**



# RESEARCH & ANALYTICAL LABORATORIES, INC.

Analytical/Process Consultations



## NEW WELL INORGANIC CHEMICAL ANALYSIS

Note: All information must be supplied for plan review credit.

WATER SYSTEM ID #: N E W W - E L L

County: Guilford

Name of Water System: Blue Water Cove

Sample Type:  Source for Plan Review

Location Where Collected: Well

Location Code: \_\_\_\_\_

Collected By: Matt  
(Please Print)

Collection Date	Collection Time
07 / 09 / 04 (MM/DD/YY)	08 : 00 A.M. (Specify AM or PM)

Mail Results to (water system representative):

Aqua, NC

706 N. Regional Road

Greensboro, NC

Phone #: \_\_\_\_\_

Fax#: ( ) \_\_\_\_\_

\*NOTE: Please complete portion above double line on Page 2.

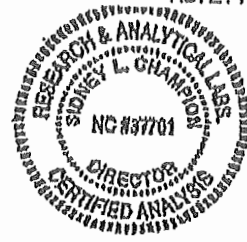
LABORATORY ID#: 37701

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	0 0 1	0.10 ntu	<input type="checkbox"/>	3	8 0	ntu N/A
1003	Arsenic	1 2 5	0.005 mg/L	<input checked="" type="checkbox"/>			mg/L 0.010 mg/L
1010	Barium	1 6 9	0.4 mg/L	<input checked="" type="checkbox"/>			mg/L 2.000 mg/L
1015	Cadmium	1 6 9	0.001 mg/L	<input checked="" type="checkbox"/>			mg/L 0.005 mg/L
1016	Calcium	1 6 9	10 mg/L	<input type="checkbox"/>	1	3 3	mg/L N/A
1017	Chloride	1 2 7	50 mg/L	<input checked="" type="checkbox"/>			mg/L 250.0 mg/L
1020	Chromium	1 6 9	0.020 mg/L	<input checked="" type="checkbox"/>			mg/L 0.100 mg/L
1022	Copper	1 6 9	0.050 mg/L	<input checked="" type="checkbox"/>			mg/L 1.300 mg/L
1024	Cyanide	1 4 8	0.040 mg/L	<input checked="" type="checkbox"/>			mg/L 0.200 mg/L
1025	Fluoride	1 0 7	0.100 mg/L	<input type="checkbox"/>	0	4 1 1	mg/L 4.000 mg/L
1028	Iron	1 6 9	0.060 mg/L	<input type="checkbox"/>	1	0 0	mg/L 0.300 mg/L
1030	Lead	1 2 5	0.003 mg/L	<input checked="" type="checkbox"/>			mg/L 0.015 mg/L
1031	Magnesium	1 6 9	1.0 mg/L	<input type="checkbox"/>	3	0 7	mg/L N/A
1032	Manganese	1 6 9	0.010 mg/L	<input type="checkbox"/>	0	0 1 2	mg/L 0.050 mg/L
1035	Mercury	1 0 3	0.0004 mg/L	<input checked="" type="checkbox"/>			mg/L 0.002 mg/L

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



**NEW WELL INORGANIC CHEMICAL ANALYSIS**

(continued)

Note: All information must be supplied for plan review credit.

WATER SYSTEM ID #: NE - WW - ELL

Location Code: \_\_\_\_\_

Collection Date	Collection Time
07 / 09 / 04	08 : 00 A M
(MM/DD/YY)	(Specify AM or PM)

LABORATORY ID #: 3 7 7 0 1

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING Limit (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMIT*
1036	Nickel	1 6 2	0.100 mg/L	<input checked="" type="checkbox"/>	.	mg/L N/A
1040	Nitrate	1 0 2	1.00 mg/L	<input checked="" type="checkbox"/>	.	mg/L 10.00 mg/L
1041	Nitrite	1 0 2	0.10 mg/L	<input checked="" type="checkbox"/>	.	mg/L 1.00 mg/L
1045	Selenium	1 2 5	0.010 mg/L	<input checked="" type="checkbox"/>	.	mg/L 0.050 mg/L
1050	Silver	1 6 2	0.05 mg/L	<input checked="" type="checkbox"/>	.	mg/L 0.100 mg/L
1052	Sodium	1 6 2	1.0 mg/L	<input type="checkbox"/>	6 . 9 3	mg/L N/A
1055	Sulfate	1 3 7	5.0 mg/L	<input type="checkbox"/>	8 . 8 6	mg/L 250.0 mg/L
1068	Acidity	1 5 7	1.0 mg/L	<input type="checkbox"/>	9 . 0 0	mg/L N/A
1074	Antimony	1 2 5	0.003 mg/L	<input checked="" type="checkbox"/>	.	mg/L 0.006 mg/L
1075	Beryllium	1 6 2	0.002 mg/L	<input checked="" type="checkbox"/>	.	mg/L 0.004 mg/L
1085	Thallium	1 2 5	0.001 mg/L	<input checked="" type="checkbox"/>	.	mg/L 0.002 mg/L
1095	Zinc	1 6 2	1.0 mg/L	<input checked="" type="checkbox"/>	.	mg/L 5.0 mg/L
1905	Color	1 2 2	5 mg/L	<input checked="" type="checkbox"/>	.	units 15 units
1915	Total Hardness	1 4 1	110 mg/L	<input type="checkbox"/>	4 2 . 0	mg/L N/A
1925	pH	1 3 5	N/A	N/A	6 . 1 1	units 6.5 - 8.5 units
1927	Alkalinity	1 4 2	110 mg/L	<input type="checkbox"/>	4 2 .	mg/L N/A
1930	Total Dissolved Solids	1 3 2	10.0 mg/L	<input type="checkbox"/>	1 0 5 .	mg/L 500.0 mg/L

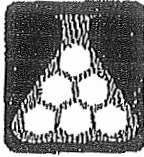
\* Note: Concentrations for Lead and Copper are action levels, not MCLs.

ANALYSES BEGUN:	DATE:	TIME:
	07 / 09 / 04 (MM/DD/YY)	10 : 00 A M (Specify AM or PM)
ANALYSES COMPLETED:	DATE:	TIME:
	07 / 21 / 04 (MM/DD/YY)	17 : 00 P M (Specify AM or PM)

Laboratory Log #: 509441

Certified By: Sidney L. Champion  
(Print and sign name)

COMMENTS: \_\_\_\_\_



# RESEARCH & ANALYTICAL LABORATORIES, INC.

Analytical/Process Consultations

## BACTERIOLOGICAL ANALYSIS

Note: All appropriate information must be supplied for compliance credit.



WATER SYSTEM ID #: Non-Comp

County: \_\_\_\_\_

Name of Water System: Aqua NC / Blue Water Cove

Sample Type:  Routine distribution  Repeat  Plan Review  Special/Non-compliance

Location Where Collected: New Well

(Note: Sample MUST be collected from distribution system for routine compliance, not this well house.)

Location Code: \_\_\_\_\_

Collected By: Matt Hukill  
(Please Print)

Collection Date	Collection Time
<u>07/09/04</u> (MM/DD/YY)	<u>08:00AM</u> (Specify AM or PM)

Mail Results to (water system representative):

Aqua NC  
706 Nregonne Road  
Greensboro, NC  
 Phone #: 336-362-2007  
 Fax #: ( ) \_\_\_\_\_  
 Responsible Person's email: \_\_\_\_\_ @ \_\_\_\_\_

**Also Complete For REPEAT Samples:**  
 Previous Positive Location Code: \_\_\_\_\_  
 Positive Collection Date: //  
 Proximity of THIS sample to Previous Positive:  
 Same Tap  Nearer to the Source  Further from the Source

If Chlorinated:

Total Chlorine Residual: \_\_\_\_\_ mg/L  
 Free Chlorine Residual: \_\_\_\_\_ mg/L  
 Combined Chlorine Residual: \_\_\_\_\_ mg/L

(Combined Chlorine = Total Chlorine minus Free Chlorine)

Note: Also record these values on your water usage report.

LABORATORY ID#: 3 7 7 0 1  Repeat Samples Required from Client  Resample Required from Client

CONTAMINANT	METHOD CODE	RESULTS		
		PRESENT <sup>1,2</sup>	ABSENT	INVALID CODE <sup>3</sup>
Total Coliform	<u>312</u>		X	
Fecal/E. coli				
Heterotrophic P.C.			cfu/mL	

### INVALID CODES:

- 1) Confluent Growth/No Coliform Growth Found
- 2) TNTC/No Coliform Growth Found
- 3) Turbid Culture/No Coliform Growth Found
- 4) Over 30 Hours Old
- 5) Improper Sample or Analysis

Notes: <sup>1</sup> If Total Coliform bacteria is present, the laboratory must fax analytical results to the State within 48 hours.  
<sup>2</sup> If Fecal/E. coli bacteria is present, the laboratory must fax analytical results to the State on day test completed.  
<sup>3</sup> Invalid code NS should be accompanied by an explanation in the comments below.

	DATE:	TIME:
ANALYSES BEGUN:	<u>7/9/2004</u> (MM/DD/YY)	<u>16:45P M</u> (Specify AM or PM)
ANALYSES COMPLETED:	<u>7/10/2004</u> (MM/DD/YY)	<u>17:00P M</u> (Specify AM or PM)

Laboratory Log #: 509442

Certified By: Sherry Leonard  
(Print and sign name)

### COMMENTS:

01/2002 RG-Box 476 - 166 Short Street - Kernerville, North Carolina 27284 • 336-996-2841 • FAX 336-996-0926  
 Laboratory should Mail Results for  
 Public Water Supply Section, Attn: Data Entry, 1634 Mail Service Center, Raleigh, NC 27699-1634  
 Fax: 919 715 6677

# EMSL Analytical, Inc.

231 Longview Dr.  
Kernersville, NC 27284  
(336) 992-1025



## ASBESTOS ANALYSIS

Note: All information must be supplied for compliance credit.

WATER SYSTEM ID #: New Well System

County: Forsyth

Name of Water System: Blue Water Cove

Sample Type:  Distribution  Entry Point  Special/Non-compliance

Location Where Collected: Well Head

Location Code: N W 1

Collection Date	Collection Time
7/9/04 <small>(MM/DD/YY)</small>	8:00 AM <small>(Specify AM or PM)</small>

Collected By: Matt Hudll  
(Please Print)

Mail Results to (water system representative):

R & A Laboratories, Inc.

106 Short Street, PO Box 473

Kernersville, NC 27284

Phone #: (336) 996-2841

Fax #: ( )

LABORATORY ID #: 3 7 7 6 6

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 <sup>1,2</sup>	ALLOWABLE LIMIT
1791	Chrysotile	1 7 2	0.2 MFL	<input checked="" type="checkbox"/>	<0.17 MFL	7.0 MFL
1792	Amphibole	1 7 2	0.2 MFL	<input checked="" type="checkbox"/>	<0.17 MFL	7.0 MFL
1094	Total Asbestos	1 7 2	0.2 MFL	<input checked="" type="checkbox"/>	<0.17 MFL	7.0 MFL

Notes: <sup>1</sup> MFL = Million Fibers per Liter > 10 µm.

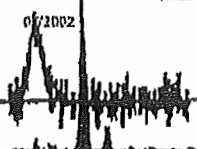
<sup>2</sup> If result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	7/10/04	3:06 PM <small>(Specify AM or PM)</small>
ANALYSES COMPLETED:	7/10/04 <small>(MM/DD/YY)</small>	3:15 PM <small>(Specify AM or PM)</small>

Laboratory Log #: 020402644

Certified By: Joseph M. McOscar  
*Joseph M. McOscar*  
(Print and sign name)

COMMENTS: Special/Non-Compliance. Do not report to State.



Laboratory should Mail Results to:  
Public Water Supply Section, Attn: Data Entry, 1634 Mail Service Center, Raleigh, NC 27699-1634  
Fax: 919.715.0637

**EMSL Analytical, Inc.**

231 Longview Drive, Kerneraville, NC 27284

Phone: (336) 892-4026 Fax: (336) 892-4176 Email: greensborolab@emsll.com



**Attn:** Sid Champlon  
Research & Analytical Labs  
106 Short Street  
P.O.Box 478  
Kerneraville, NC 27284

**Fax:** (336) 896-0326  
**Project:** Blue Water Cove

**Phone:** (336) 898-2841

**Customer ID:** RAL50  
**Customer PO:**  
**Received:** 07/09/04 1:25 PM  
**EMSL Order:** 020402644  
**EMSL Proj:**  
**Analysis Date:** 7/10/2004

**Determination of Asbestos Structures over 10um in Length in Drinking Water  
Performed by the EPA 100.2 Method**

Sample ID	Sample Prep Date	# Fibers Asbestos	# Fibers Non-Asbestos	Type(s) Of Asbestos	Analytical Sensitivity (MFL)	Confidence Limits	Concentration Of Asbestos Fibers (MFL)	Comments
500441 020402644-0001	7/9/04	0	0		0.17	0.00-0.64	<0.17	

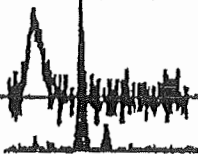
Analyst(s)

Joe McOscar (1)

*Joe McOscar*  
Joe McOscar  
or other approved signatory

Sample collection and containers provided by the client, acceptable bottle blank level is defined as <=0.01MFL/10um. ND=None Detected. This report may not be reproduced, except in full, without written permission by EMSL Analytical, Inc. This report relates only to the samples reported above.

ACCREDITATIONS: NC: 37166 NVLAP 102104-0



100.2-V221

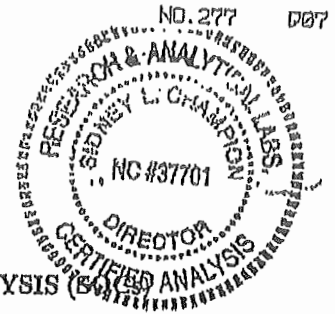
**THIS IS THE LAST PAGE OF THE REPORT.**





# RESEARCH & ANALYTICAL LABORATORIES, INC.

Analytical/Process Consultations



## PESTICIDES AND SYNTHETIC ORGANIC CHEMICALS ANALYSIS

Note: All information must be supplied for compliance credit.

WATER SYSTEM ID #: \_\_\_\_\_ County: FORSYTH

Name of Water System: Blue and Cole

Sample Type:  Entry Point  Special/Non-compliance

Location Where Collected: Well

Location Code: \_\_\_\_\_

Collected By: MAT (Please Print)

Collection Date	Collection Time
<u>7/21/04</u> (MM/DD/YY)	<u>8:00 AM</u> (Specify AM or PM)

Mail Results to (water system representative):  
Adrian NC

Phone #: ( ) 665-0817

Fax #: ( ) \_\_\_\_\_

\*NOTE: Please complete portion above double line on Page 2.

LABORATORY ID #: 3 7 7 0 1  SAMPLE UNSATISFACTORY  RESAMPLE REQUIRED

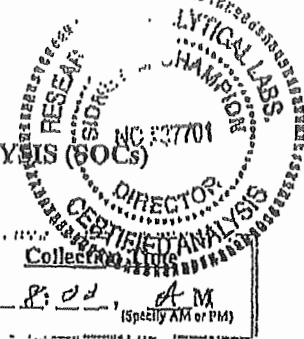
CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e. < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
2005	Endrin	2 2 5	0.00001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.002 mg/L
2010	Lindane	2 2 5	0.00002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.0002 mg/L
2015	Methoxychlor	2 2 5	0.0001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.04 mg/L
2020	Toxaphene	2 0 1	0.001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.003 mg/L
2021	Carbaryl	2 3 5	0.004 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2022	Methomyl	2 3 5	0.004 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2031	Dalapon	2 0 3	0.001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.2 mg/L
2035	Di(2-ethylhexyl)adipate	2 2 5	0.0006 mg/L	<input checked="" type="checkbox"/>	mg/L	0.4 mg/L
2036	Oxamyl (rydate)	2 3 5	0.002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.2 mg/L
2037	Simazine	2 2 5	0.00007 mg/L	<input checked="" type="checkbox"/>	mg/L	0.004 mg/L
2040	Picloram	2 0 3	0.0001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.5 mg/L
2041	Dinoseb	2 0 3	0.0002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.007 mg/L
2042	Hexachlorocyclopentadiene	2 2 5	0.0001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.05 mg/L
2043	Aldicarb Sulfoxide	2 3 5	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2044	Aldicarb Sulfone	2 3 5	0.0008 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2045	Metolachlor	2 2 5	0.0008 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2046	Carbofuran	2 3 5	0.0009 mg/L	<input checked="" type="checkbox"/>	mg/L	0.04 mg/L
2047	Aldicarb	2 3 5	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2050	Atrazine	2 2 5	0.0001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.003 mg/L
2051	Alachlor	2 2 5	0.0002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.002 mg/L
2065	Heptachlor	2 2 5	0.00004 mg/L	<input checked="" type="checkbox"/>	mg/L	0.0004 mg/L

\*Note: If result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

### PESTICIDES AND SYNTHETIC ORGANIC CHEMICALS ANALYSIS (SOCs)

(continued)

Note: All information must be supplied for compliance credit.



WATER SYSTEM ID #: \_\_\_\_\_

N/C

Location Code: \_\_\_\_\_

Collection Date

7/9/04  
(M/DD/YY)

Collection

8:00 AM  
(Specify AM or PM)

LABORATORY ID #: 3 7 7 0 1

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (RRL)	NOT DETECTED ABOVE RRL (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
2066	3-Hydroxycarbofuran	2 3 5	0.004 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2067	Heptachlor Epoxide	2 2 5	0.0002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.0002 mg/L
2070	Dieldrin	2 2 5	0.002 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2076	Butachlor	2 2 5	0.008 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2077	Propachlor	2 2 5	0.006 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2105	2,4-D	2 0 3	0.001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.07 mg/L
2110	2,4,5-TP (Silvex)	2 0 3	0.002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.05 mg/L
2274	Hexachlorobenzene	2 2 5	0.001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.001 mg/L
2298	Di(2-ethylhexyl)phthalate	2 2 5	0.00132 mg/L	<input checked="" type="checkbox"/>	mg/L	0.006 mg/L
2306	Benzo(a)pyrene	2 2 5	0.00002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.0002 mg/L
2326	Pentachlorophenol	2 0 3	0.00004 mg/L	<input checked="" type="checkbox"/>	mg/L	0.001 mg/L
2356	Aldrin	2 2 5	0.0002 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2383	PCB's	2 0 1	0.0001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.0005 mg/L
2440	Dicamba	2 0 3	0.001 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2595	Mecbuzin	2 2 5	0.0008 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2931	DBCP	2 1 9	0.00002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.0002 mg/L
2946	Ethylene Dibromide (EDB)	2 1 9	0.00001 mg/L	<input checked="" type="checkbox"/>	mg/L	0.00005 mg/L
2959	Chlordane	2 0 1	0.0002 mg/L	<input checked="" type="checkbox"/>	mg/L	0.002 mg/L

\*Note: If result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	<u>07/16/04</u> (M/DD/YY)	<u>08:00 AM</u> (Specify AM or PM)
ANALYSES COMPLETED:	<u>08/02/04</u> (M/DD/YY)	<u>17:00 PM</u> (Specify AM or PM)

Laboratory Log #: 509441

Certified By: u. Pawlak u. Pestak  
(Print and sign name)

COMMENTS: \_\_\_\_\_

OFFICIAL COPY  
Sep 01 2021



# RESEARCH & Analytical Laboratories, Inc.

Analytical/Process Consultations

## VOLATILE ORGANIC CHEMICALS ANALYSIS (VOCs)

Note: All information must be supplied for compliance credit.



WATER SYSTEM ID #: \_\_\_\_\_

County: FAYETTE

Name of Water System: BLUE WATER COVE

Sample Type:  Entry Point  Special/Non-compliance

Location Where Collected: WELL

(Note: Compliance samples MUST be collected at the Entry Point)

Location Code: \_\_\_\_\_

Collected By: MAV  
(Please Print)

Collection Date

Collection Time

7 9 04  
(MM/DD/YY)

8:01 AM  
(Specify AM or PM)

Mail Results to (water system representative):

ARIANC

Phone #: ( ) 362-2007

Fax #: ( ) \_\_\_\_\_

\*NOTE: Please complete portion above double line on Page 2.

LABORATORY ID #: 3 7 7 0 1

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
2030	p-Isopropyltoluene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2210	Chloromethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2212	Dichlorodifluoromethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2214	Bromomethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2216	Chloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2218	Fluorochloromethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2246	Hexachlorobutadiene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2248	Naphthalene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2378	1,2,4-Trichlorobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	0.07 mg/L
2380	Cis-1,2-Dichloroethylene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	0.07 mg/L
2408	Dibromomethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2410	1,1-Dichloropropene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2412	1,3-Dichloropropene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2413	1,3-Dichloropropene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2414	1,2,3-Trichloropropane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2416	2,2-Dichloropropane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2418	1,2,4-Trimethylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2420	1,2,3-Trichlorobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2422	n-Butylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2424	1,3,5-Trimethylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2426	Tert-Butylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2428	Sec-Butylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2430	Bromo-chloromethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A
2941	Chloroform	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	_____	N/A

\*Note: If result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

P.O. Box 473 • 106 Short Street • Kernersville, North Carolina 27284 • 336-996-2841 • Fax 336-996-0326

Laboratory does Mail Results to \_\_\_\_\_



VOLATILE ORGANIC CHEMICALS ANALYSIS (VOCs)

Note: All information must be supplied for compliance credit. (continued)

WATER SYSTEM ID #: \_\_\_\_\_

Location Code: \_\_\_\_\_

Collection Date: 7/15/04 (M/D/Y)  
 Collection Time: 8:00 A M (Specify AM or PM)

LABORATORY ID #: 37701

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS <sup>#</sup>	ALLOWABLE LIMIT
2942	Bromoform	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2943	Bromodichloromethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2944	Chlorodibromomethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2955	Xylenes (Total)	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	10.00 mg/L
2964	Dichloromethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2965	o-Chlorotoluene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2966	p-Chlorotoluene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2967	m-Dichlorobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2968	o-Dichlorobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.60 mg/L
2969	p-Dichlorobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.075 mg/L
2976	Vinyl Chloride	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.002 mg/L
2977	1,1-Dichloroethylene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.007 mg/L
2978	1,1-Dichloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2979	trans-1,2-Dichloroethylene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.10 mg/L
2980	1,2-Dichloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2981	1,1,1-Trichloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.20 mg/L
2982	Carbon Tetrachloride	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2983	1,2-Dichloropropane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2984	Trichloroethylene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2985	1,1,2-Trichloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2986	1,1,1,2-Tetrachloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2987	Tetrachloroethylene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2988	1,1,2,2-Tetrachloroethane	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2989	Chlorobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.10 mg/L
2990	Benzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.005 mg/L
2991	Toluene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	<u>0.0009</u> mg/L	1.00 mg/L
2992	Ethylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.70 mg/L
2993	Bromobenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2994	Isopropylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A
2996	Styrene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	0.10 mg/L
2998	n-Propylbenzene	2 2 1	0.0005 mg/L	<input checked="" type="checkbox"/>	mg/L	N/A

\*Note: If result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours

	DATE:	TIME:
ANALYSES BEGUN:	<u>07/12/04</u>	<u>16:11</u> P M
ANALYSES COMPLETED:	<u>07/12/04</u>	<u>17:11</u> P M

Laboratory Log #: 509441

Certified By: Sidney L. Champion (Print and sign name)

COMMENTS: \_\_\_\_\_

APPENDIX A

BLUE WATER COVE

D. ALL INORGANIC ANALYSES FROM EACH WELL AT THE  
WELLHEAD FOR THE LAST SIX YEARS

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



www.encolabs.com

OFFICIAL COPY

Sep 01 2021

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 30-34-012 County: Forsyth

Name of Water System: BLUE WATER COVE

Sample Type:  Entry Point  Special/Non-compliance

Location Where Collected: Well: 1(IOC) - BLUE WATER COVE(96) - 1008 EASTSHORE CIR

Facility ID No: P01

Location Code: E01

Collected By: PETER DEALING

Collection Date	Collection Time
08/09/18	11:25 am

Mail Results to:

Aqua NC - Kernersville (AQ007)

Attn: Debbie Dycus

4163 Sinclair Street

Denver, NC 28037

Phone #: (704) 489-9404

Fax #: (704) 489-9409

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		0.17 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		1.27 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.0145 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		8.43 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		9.2 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:	08/13/2018	12:07 pm
ANALYSES COMPLETED:	08/23/2018	10:08 am

Laboratory Log #: CB09124-01

Certified By:

*Bill Scott*

Bill Scott

COMMENTS:



Blue Water Cove  
Appendix A  
W-21B Sub 497A

Pace Analytical Services, Inc.  
8 East Tower Circle  
Ormond Beach, FL 3217  
Phone: (386) 672-566  
Fax: (386) 673-401

**INORGANIC CHEMICAL ANALYSIS**

Note: All information must be supplied for compliance credit.

WATER SYSTEM ID#: 3 0 - 3 4 - 0 1 2 County: Forsyth

Name of Water System: Blue Water Cove

Sample Type:  Entry Point  Non-compliance

Location Where Collected: Blue Water Cove P01 (W1)

Facility ID No.: P 0 1

Sample Point: E 0 1

Collected By: Robert Mitchem  
(Please Print)

Collection Date	Collection Time
<u>0 8 / 2 6 / 1 5</u> (MM/DD/YY)	<u>1 0 : 1 0 , A M</u> (Specify AM or PM)

Mail Results to (water system representative):  
Debbie Gentry  
1163 Sinclair St.  
Denver, NC 28037

Phone #: ( 704 ) 489-9404  
Fax #: ( 704 ) 489-9409  
Responsible Person's email:  
dagentry@aquanamerica.com

LABORATORY ID #: 1 2 7 1 0  SAMPLE UNSATISFACTORY  RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (RRL)	NOT DETECTED (i.e. < RRL) (%)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	<input checked="" type="checkbox"/>		0.010 mg/L
1010	Barium	200.7	0.400 mg/L	<input checked="" type="checkbox"/>		2.000 mg/L
1015	Cadmium	200.7	0.001 mg/L	<input checked="" type="checkbox"/>		0.005 mg/L
1020	Chromium	200.7	0.020 mg/L	<input checked="" type="checkbox"/>		0.100 mg/L
1024	Cyanide	335.4	0.050 mg/L	<input checked="" type="checkbox"/>		0.200 mg/L
1025	Fluoride	300.0	0.100 mg/L	<input type="checkbox"/>	<u>0 2 9 0 0</u> mg/L	4.000 mg/L
1028	Iron	200.7	0.060 mg/L	<input type="checkbox"/>	<u>1 1 0 0 0</u> mg/L	0.300 mg/L
1032	Manganese	200.7	0.010 mg/L	<input type="checkbox"/>	<u>0 0 1 5 0</u> mg/L	0.050 mg/L
1035	Mercury	245.1	0.0004 mg/L	<input checked="" type="checkbox"/>		0.002 mg/L
1036	Nickel	200.7	0.100 mg/L	<input checked="" type="checkbox"/>		N/A
1045	Selenium	200.8	0.010 mg/L	<input checked="" type="checkbox"/>		0.050 mg/L
1052	Sodium	200.7	1.0 mg/L	<input type="checkbox"/>	<u>7 9 0 0 0</u> mg/L	N/A
1055	Sulfate	300.0	15.0 mg/L	<input checked="" type="checkbox"/>		250.0 mg/L
1074	Antimony	200.8	0.003 mg/L	<input checked="" type="checkbox"/>		0.006 mg/L
1075	Beryllium	200.7	0.002 mg/L	<input checked="" type="checkbox"/>		0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	<input checked="" type="checkbox"/>		0.002 mg/L
1925	pH	4500H-B	N/A	<input type="checkbox"/>	<u>7 3 0 0 0</u> units	6.5-8.5

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

	DATE:	TIME:
ANALYSIS BEGUN:	<u>0 8 / 3 1 / 1 5</u> (MM/DD/YY)	<u>1 0 : 0 3 , A M</u> (Specify AM or PM)
ANALYSIS COMPLETED:	<u>0 9 / 0 8 / 1 5</u> (MM/DD/YY)	<u>0 3 : 0 4 , P M</u> (Specify AM or PM)

Laboratory Log #: 92265133002 Certified By: Taylor Ezell  
(Print and sign name)

COMMENTS: \_\_\_\_\_

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



www.encolabs.com

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 30-34-012 County: Forsyth

Name of Water System: BLUE WATER COVE

Sample Type:  Entry-Point  Special/Non-compliance

Location Where Collected: Well: 1(IOC) - BLUE WATER COVE(96) - 1008 EASTSHORE CIR

Facility ID No: P01

Location Code: E01

Collected By: PETER DEALING

Collection Date	Collection Time
08/21/12	01:39 pm

Mail Results to:

Aqua NC - Kernersville (AQ007)

Attn: Debble Gentry

4163 Shelair Street

Denver, NC 28037

Phone #: (704) 489-9404

Fax #: (704) 489-9409

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		0.25 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		1 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.0146 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		9 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		8.7 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:	08/22/2012	4:53 pm
ANALYSES COMPLETED:	08/29/2012	2:17 pm

Laboratory Log #: C206336-01

Certified By: Peter Dealing Link Throver

COMMENTS:

OFFICIAL COPY Sep 01 2021



APPENDIX A

BLUE WATER COVE

E. COPIES OF ALL IRON AND/OR MANGANESE  
ANALYSES FOR SOLUBLE AND  
INSOLUBLE THE PAST THREE YEARS –  
BASELINE (WITHOUT TREATMENT),  
WELL HEAD (AFTER TREATMENT),  
AND DISTRIBUTION SYSTEM (AFTER TREATMENT)

NO SPECIAL INORGANIC CHEMICAL ANALYSES HAVE  
BEEN TAKEN IN THE PAST THREE YEARS.

**APPENDIX A**

**BLUE WATER COVE**

**F. COPIES OF THE PUMP STATUS REPORTS FOR EACH  
WELL FOR THE LAST TWO YEARS**

PUMP STATUS REPORT FORM

WATER SYSTEM NAME: Blue Water Cove  
 PWS ID #: NC 30-34-012  
 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)
7/1/2019	3	8101700	8600	858	5	2933	2927	14	4.67	19.29	1.50	32.59	4.67			
7/3/2019	2	8105700	4000	860	2	2000	2934	7	3.50	17.14	1.00	33.33	3.50			
7/9/2019	6	8120100	14400	868	7	2400	2957	23	3.83	18.78	1.20	33.33	3.83			
7/12/2019	3	8127700	7600	872	4	2533	2969	12	4.00	20.00	1.33	31.67	4.00			
7/16/2019	4	8137000	9300	876	5	2325	2985	16	4.00	18.00	1.20	32.29	4.00			
7/19/2019	3	8146600	9600	881	5	3200	3000	15	5.00	20.00	1.67	32.00	5.00			
7/23/2019	4	8159600	13000	888	7	3250	3019	19	4.75	21.47	1.70	31.86	4.75			
7/25/2019	2	8164900	5300	891	3	2650	3028	9	4.50	18.00	1.35	32.72	4.50			
7/29/2019	4	8176400	11500	897	6	2875	3048	20	5.00	17.70	1.48	32.49	5.00			
8/1/2019	3	8184200	7800	901	4	2600	3061	13	4.33	18.46	1.33	32.50	4.33			
8/6/2019	5	8197000	12800	908	7	2560	3082	21	4.20	19.14	1.34	31.84	4.20			
8/8/2019	2	8201400	4400	910	2	2200	3089	7	3.50	19.71	1.15	31.88	3.50			
8/12/2019	4	8214700	13300	917	7	3325	3110	21	5.25	20.00	1.75	31.67	5.25			
8/14/2019	2	8221600	6900	920	4	3450	3118	8	4.00	26.25	1.75	32.86	4.00			
8/19/2019	5	8235000	13400	927	7	2680	3138	20	4.00	21.00	1.40	31.90	4.00			
8/22/2019	3	8243000	8000	932	4	2667	3151	13	4.33	19.38	1.40	31.75	4.33			

PUMP STATUS REPORT FORM

8/26/2019	4	8254500	11500	938	6	2875	3170	19	4.75	19.26	1.53	31.42	4.75
8/29/2019	3	8263800	9300	942	5	3100	3183	13	4.33	21.69	1.57	32.98	4.33
9/3/2019	5	8283700	19900	953	11	3980	3210	27	5.40	24.44	2.20	30.15	5.40
9/6/2019	3	8295300	11600	960	6	3867	3225	15	5.00	25.20	2.10	30.69	5.00
9/9/2019	3	8309300	14000	967	8	4667	3244	19	6.33	24.00	2.53	30.70	6.33
9/12/2019	3	8322700	13400	975	8	4467	3262	18	6.00	25.00	2.50	29.78	6.00
9/16/2019	4	8338200	15500	984	9	3875	3284	22	5.50	24.00	2.20	29.36	5.50
9/19/2019	3	8350400	12200	991	7	4067	3301	17	5.67	25.06	2.37	28.64	5.67
9/23/2019	4	8365100	14700	999	9	3675	3323	22	5.50	23.18	2.13	28.82	5.50
9/26/2019	3	8378400	13300	1007	8	4433	3341	18	6.00	26.67	2.67	27.71	6.00
10/1/2019	5	8399000	20600	1018	11	4120	3373	32	6.40	19.69	2.10	32.70	6.40
10/4/2019	3	8409800	10800	1023	6	3600	3388	15	5.00	22.00	1.83	32.73	5.00
10/7/2019	3	8428700	18900	1033	10	6300	3414	26	8.67	22.62	3.27	32.14	8.67
10/11/2019	4	8445700	17000	1042	9	4250	3436	22	5.50	24.27	2.23	31.84	5.50
10/14/2019	3	8456700	11000	1048	6	3667	3452	16	5.33	21.38	1.90	32.16	5.33
10/16/2019	2	8462300	5600	1050	3	2800	3461	9	4.50	19.33	1.45	32.18	4.50
10/21/2019	5	8477400	15100	1058	8	3020	3483	22	4.40	21.27	1.56	32.26	4.40
10/24/2019	3	8484900	7500	1062	4	2500	3495	12	4.00	19.00	1.27	32.89	4.00
10/28/2019	4	8495600	10700	1068	6	2675	3511	16	4.00	20.63	1.38	32.42	4.00
11/1/2019	4	8504700	9100	1072	5	2275	3525	14	3.50	19.71	1.15	32.97	3.50
11/4/2019	3	8511400	6700	1076	3	2233	3537	12	4.00	17.00	1.13	32.84	4.00
11/8/2019	4	8520000	8600	1080	4	2150	3552	15	3.75	17.60	1.10	32.58	3.75
11/11/2019	3	8525900	5900	1083	3	1967	3563	11	3.67	16.36	1.00	32.78	3.67
11/15/2019	4	8533300	7400	1087	4	1850	3576	13	3.25	17.54	0.95	32.46	3.25
11/18/2019	3	8539900	6600	1090	3	2200	3588	12	4.00	17.00	1.13	32.35	4.00
11/21/2019	3	8545000	5100	1093	3	1700	3597	9	3.00	16.67	0.83	34.00	3.00
11/25/2019	4	8553400	8400	1097	4	2100	3612	15	3.75	17.20	1.08	32.56	3.75

PUMP STATUS REPORT FORM

11/27/2019	2	8557300	3900	1099	2	1950	3619	7	3.50	18.00	1.05	30.95	3.50
12/3/2019	6	8569800	12500	1105	6	2083	3641	22	3.67	17.18	1.05	33.07	3.67
12/5/2019	2	8574200	4400	1108	2	2200	3648	7	3.50	18.86	1.10	33.33	3.50
12/9/2019	4	8582200	8000	1112	4	2000	3662	14	3.50	17.57	1.03	32.52	3.50
12/11/2019	2	8586200	4000	1114	2	2000	3669	7	3.50	18.00	1.05	31.75	3.50
12/16/2019	5	8596900	10700	1119	6	2140	3688	19	3.80	17.37	1.10	32.42	3.80
12/19/2019	3	8603200	6300	1122	3	2100	3699	11	3.67	17.45	1.07	32.81	3.67
12/23/2019	4	8612100	8900	1127	5	2225	3715	16	4.00	17.63	1.18	31.56	4.00
12/26/2019	3	8617300	5200	1130	3	1733	3724	9	3.00	17.33	0.87	33.33	3.00
12/30/2019	4	8625800	8500	1134	4	2125	3739	15	3.75	17.60	1.10	32.20	3.75
1/3/2020	4	8636300	10500	1140	6	2625	3755	16	4.00	20.63	1.38	31.82	4.00
1/7/2020	4	8644900	8600	1144	4	2150	3770	15	3.75	17.60	1.10	32.58	3.75
1/10/2020	3	8650200	5300	1147	3	1767	3779	9	3.00	18.67	0.93	31.55	3.00
1/13/2020	3	8657900	7700	1151	4	2567	3793	14	4.67	16.71	1.30	32.91	4.67
1/16/2020	3	8664100	6200	1154	3	2067	3804	11	3.67	17.45	1.07	32.29	3.67
1/20/2020	4	8673200	9100	1159	5	2275	3820	16	4.00	17.63	1.18	32.27	4.00
1/23/2020	3	8678600	5400	1161	3	1800	3829	9	3.00	18.00	0.90	33.33	3.00
1/27/2020	4	8688100	9500	1166	5	2375	3846	17	4.25	17.29	1.23	32.31	4.25
1/31/2020	4	8696000	7900	1170	4	1975	3860	14	3.50	17.57	1.03	32.11	3.50
2/3/2020	3	8702900	6900	1174	4	2300	3872	12	4.00	17.50	1.17	32.86	4.00
2/6/2020	3	8709000	6100	1177	3	2033	3883	11	3.67	17.45	1.07	31.77	3.67
2/11/2020	5	8719500	10500	1182	5	2100	3900	17	3.40	19.06	1.08	32.41	3.40
2/14/2020	3	8725700	6200	1186	3	2067	3911	11	3.67	17.45	1.07	32.29	3.67
2/17/2020	3	8733700	8000	1190	4	2667	3924	13	4.33	19.38	1.40	31.75	4.33
2/20/2020	3	8738800	5100	1192	3	1700	3934	10	3.33	15.60	0.87	32.69	3.33
2/25/2020	5	8750000	11200	1198	6	2240	3954	20	4.00	17.40	1.16	32.18	4.00
2/27/2020	2	8755200	5200	1201	3	2600	3963	9	4.50	18.00	1.35	32.10	4.50

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3/2/2020	4	8763200	8000	1205	4	2000	3978	15	3.75	16.80	1.05	31.75	3.75
3/5/2020	3	8769700	6500	1211	6	2167	3989	11	3.67	31.09	1.90	19.01	3.67
3/9/2020	4	8778800	9100	1215	5	2275	4006	17	4.25	16.24	1.15	32.97	4.25
3/12/2020	3	8785500	6700	1219	3	2233	4018	12	4.00	17.00	1.13	32.84	4.00
3/17/2020	5	8797300	11800	1225	6	2360	4039	21	4.20	17.71	1.24	31.72	4.20
3/20/2020	3	8804100	6800	1229	4	2267	4051	12	4.00	18.50	1.23	30.63	4.00
3/23/2020	3	8812600	8500	1233	5	2833	4067	16	5.33	17.63	1.57	30.14	5.33
3/27/2020	4	8821400	8800	1238	5	2200	4083	16	4.00	18.38	1.23	29.93	4.00
3/31/2020	4	8831600	10200	1244	6	2550	4100	17	4.25	20.82	1.48	28.81	4.25
4/3/2020	3	8838500	6900	1248	4	2300	4112	12	4.00	20.00	1.33	28.75	4.00
4/6/2020	3	8849300	10800	1255	7	3600	4128	16	5.33	24.38	2.17	27.69	5.33
4/10/2020	4	8861100	11800	1262	7	2950	4146	18	4.50	24.33	1.83	26.94	4.50
4/14/2020	4	8877600	16500	1271	9	4125	4172	26	6.50	21.23	2.30	29.89	6.50
4/16/2020	2	8885600	8000	1276	5	4000	4185	13	6.50	23.08	2.50	26.67	6.50
4/22/2020	6	8905200	19600	1290	14	3267	4215	30	5.00	27.80	2.32	23.50	5.00
4/24/2020	2	8912000	6800	1296	6	3400	4225	10	5.00	33.60	2.80	20.24	5.00
4/27/2020	3	8919200	7200	1296	0	2400	4237	12	4.00	0.00	0.00	#Error	4.00
4/30/2020	3	8927500	8300	0	0	2767	4250	13	4.33	0.92	0.07	0.00	4.33
5/5/2020	5	8941100	13600	8	8	2720	4272	22	4.40	21.82	1.60	28.33	4.40
5/8/2020	3	8949400	8300	14	6	2767	4286	14	4.67	23.57	1.83	25.15	4.67
5/11/2020	3	8958800	9400	20	7	3133	4302	16	5.33	25.13	2.23	23.38	5.33
5/15/2020	4	8970700	11900	29	9	2975	4321	19	4.75	28.11	2.23	22.28	4.75
5/18/2020	3	8983400	12700	40	11	4233	4337	16	5.33	39.75	3.53	19.97	5.33
5/21/2020	3	8990600	7200	46	6	2400	4350	13	4.33	28.15	2.03	19.67	4.33
5/26/2020	5	9003000	12400	55	9	2480	4368	18	3.60	28.33	1.70	24.31	3.60
5/28/2020	2	9006800	3800	57	3	1900	4376	8	4.00	21.75	1.45	21.84	4.00
6/2/2020	5	9018400	11600	68	11	2320	4392	16	3.20	39.75	2.12	18.24	3.20
6/5/2020	3	9032200	13800	85	17	4600	4407	15	5.00	67.20	5.60	13.69	5.00

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6/8/2020	3	9043000	10800	91	6	3600	4425	18	6.00	21.00	2.10	28.57	6.00
6/11/2020	3	9050500	7500	96	5	2500	4438	13	4.33	21.23	1.53	27.17	4.33
6/16/2020	5	9067000	16500	107	12	3300	4463	25	5.00	28.08	2.34	23.50	5.00
6/19/2020	3	9073200	6200	112	5	2067	4474	11	3.67	25.64	1.57	21.99	3.67
6/23/2020	4	9084500	11300	123	11	2825	4491	17	4.25	37.41	2.65	17.77	4.25
6/25/2020	2	9090800	6300	129	6	3150	4501	10	5.00	38.40	3.20	16.41	5.00
6/29/2020	4	9113900	23100	168	39	5775	4515	14	3.50	168.43	9.83	9.80	3.50
7/2/2020	3	9129800	15900	178	9	5300	4539	24	8.00	23.25	3.10	28.49	8.00
7/6/2020	4	9157300	27500	197	19	6875	4573	34	8.50	34.24	4.85	23.63	8.50
7/9/2020	3	9166600	9300	204	7	3100	4586	13	4.33	32.77	2.37	21.83	4.33
7/14/2020	5	9188600	22000	226	21	4400	4611	25	5.00	51.36	4.28	17.13	5.00
7/17/2020	3	9203700	15100	247	21	5033	4623	12	4.00	105.00	7.00	11.98	4.00
7/21/2020	4	9220600	16900	257	11	4225	4648	25	6.25	25.68	2.68	26.32	6.25
7/24/2020	3	9236000	15400	269	12	5133	4664	16	5.33	44.63	3.97	21.57	5.33
7/27/2020	3	9248300	12300	280	11	4100	4678	14	4.67	45.86	3.57	19.16	4.67
7/30/2020	3	9266900	18600	302	22	6200	4692	14	4.67	95.57	7.43	13.90	4.67
8/3/2020	4	9289700	22800	325	23	5700	4722	30	7.50	45.60	5.70	16.67	7.50
8/6/2020	3	9303500	13800	334	9	4600	4742	20	6.67	27.30	3.03	25.27	6.67
8/10/2020	4	9315600	12100	374	40	3025	4753	11	2.75	216.55	9.93	5.08	2.75
8/13/2020	3	9322800	7200	377	4	2400	4763	10	3.33	21.60	1.20	33.33	3.33
8/17/2020	4	9334100	11300	384	7	2825	4785	22	5.50	18.27	1.68	28.11	5.50
8/20/2020	3	9343700	9600	391	7	3200	4799	14	4.67	31.29	2.43	21.92	4.67
8/24/2020	4	9355800	12100	427	36	3025	4808	9	2.25	238.67	8.95	5.63	2.25
8/28/2020	4	9371600	15800	435	8	3950	4833	25	6.25	18.72	1.95	33.76	6.25
8/31/2020	3	9381100	9500	440	5	3167	4850	17	5.67	16.59	1.57	33.69	5.67
9/3/2020	3	9388200	7100	443	4	2367	4862	12	4.00	18.00	1.20	32.87	4.00
9/8/2020	5	9406200	18000	453	9	3600	4889	27	5.40	20.67	1.86	32.26	5.40
9/11/2020	3	9413500	7300	456	4	2433	4901	12	4.00	19.00	1.27	32.02	4.00

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9/14/2020	3	9422000	8500	461	5	2833	4916	15	5.00	19.20	1.60	29.51	5.00
9/17/2020	3	9430900	8900	466	4	2967	4929	13	4.33	19.85	1.43	34.50	4.33
9/21/2020	4	9441500	10600	471	6	2650	4946	17	4.25	19.76	1.40	31.55	4.25
9/24/2020	3	9452600	11100	477	6	3700	4963	17	5.67	20.82	1.97	31.36	5.67
9/29/2020	5	9468300	15700	485	8	3140	4987	24	4.80	21.00	1.68	31.15	4.80
10/2/2020	3	9478600	10300	491	6	3433	5002	15	5.00	22.40	1.87	30.65	5.00
10/6/2020	4	9493100	14500	499	8	3625	5022	20	5.00	23.70	1.98	30.59	5.00
10/8/2020	2	9501300	8200	503	5	4100	5033	11	5.50	24.55	2.25	30.37	5.50
10/12/2020	4	9511100	9800	509	5	2450	5048	15	3.75	21.60	1.35	30.25	3.75
10/15/2020	3	9522600	11500	515	6	3833	5062	14	4.67	26.57	2.07	30.91	4.67
10/19/2020	4	9539700	17100	525	10	4275	5086	24	6.00	24.00	2.40	29.69	6.00
10/21/2020	2	9548500	8800	530	5	4400	5098	12	6.00	24.50	2.45	29.93	6.00
10/26/2020	5	9571000	22500	542	13	4500	5281	183	36.60	4.13	2.52	29.76	36.60
10/29/2020	3	9577600	6600	568	26	2200	5633	352	117.33	4.36	8.53	4.30	117.33
11/2/2020	4	9587100	9500	574	6	2375	5654	21	5.25	17.14	1.50	26.39	5.25
11/5/2020	3	9600800	13700	582	8	4567	5669	15	5.00	31.20	2.60	29.27	5.00
11/9/2020	4	9609600	8800	587	5	2200	5696	27	6.75	11.78	1.33	27.67	6.75
11/12/2020	3	9616400	6800	590	4	2267	5756	60	20.00	3.60	1.20	31.48	20.00
11/16/2020	4	9625300	8900	595	5	2225	5791	35	8.75	8.57	1.25	29.67	8.75
11/19/2020	3	9630700	5400	599	3	1800	5801	10	3.33	19.80	1.10	27.27	3.33
11/23/2020	4	9643400	12700	607	8	3175	5819	18	4.50	27.00	2.03	26.13	4.50
11/25/2020	2	9649000	5600	611	4	2800	5826	7	3.50	31.71	1.85	25.23	3.50
11/30/2020	5	9663200	14200	620	9	2840	5843	17	3.40	33.18	1.88	25.18	3.40
12/4/2020	4	9672300	9100	626	6	2275	5852	9	2.25	40.00	1.50	25.28	2.25
12/8/2020	4	9681500	9200	632	6	2300	5864	12	3.00	29.50	1.48	25.99	3.00
12/11/2020	3	9688200	6700	636	4	2233	5871	7	2.33	36.86	1.43	25.97	2.33
12/15/2020	4	9697700	9500	641	5	2375	5885	14	3.50	20.14	1.18	33.69	3.50



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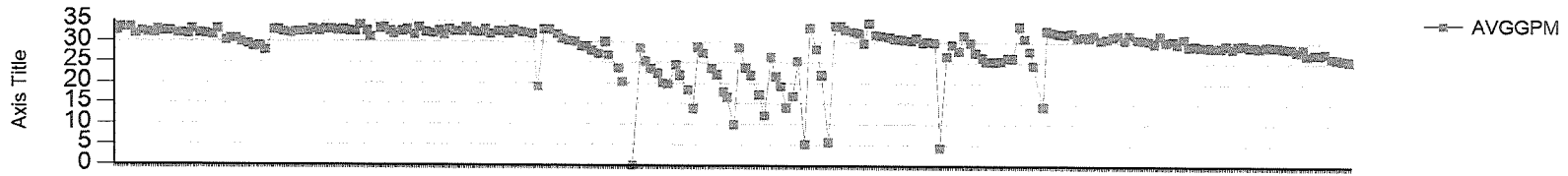
12/18/2020	3	9703600	5900	644	3	1967	5894	9	3.00	21.33	1.07	30.73	3.00
12/21/2020	3	9710900	7300	648	4	2433	5904	10	3.33	26.40	1.47	27.65	3.33
12/23/2020	2	9715400	4500	652	3	2250	5911	7	3.50	26.57	1.55	24.19	3.50
12/29/2020	6	9728600	13200	667	16	2200	5925	14	2.33	66.43	2.58	14.19	2.33
12/31/2020	2	9733500	4900	670	3	2450	5931	6	3.00	25.00	1.25	32.67	3.00
1/4/2021	4	9742400	8900	674	5	2225	5943	12	3.00	23.00	1.15	32.25	3.00
1/7/2021	3	9749500	7100	678	4	2367	5952	9	3.00	24.67	1.23	31.98	3.00
1/11/2021	4	9759600	10100	683	5	2525	5965	13	3.25	24.46	1.33	31.76	3.25
1/15/2021	4	9767900	8300	687	4	2075	5973	8	2.00	32.25	1.08	32.17	2.00
1/18/2021	3	9774400	6500	691	4	2167	5982	9	3.00	23.33	1.17	30.95	3.00
1/22/2021	4	9783600	9200	696	5	2300	5994	12	3.00	24.50	1.23	31.29	3.00
1/25/2021	3	9792900	9300	701	5	3100	5999	5	1.67	60.00	1.67	31.00	1.67
1/28/2021	3	9800500	7600	705	4	2533	6003	4	1.33	60.00	1.33	31.67	1.33
2/1/2021	4	9809600	9100	710	5	2275	6004	1	0.25	300.00	1.25	30.33	0.25
2/4/2021	3	9815500	5900	713	3	1967	6005	1	0.33	192.00	1.07	30.73	0.33
2/8/2021	4	9824700	9200	718	5	2300	6007	2	0.50	147.00	1.23	31.29	0.50
2/11/2021	3	9830200	5500	721	3	1833	6016	9	3.00	19.33	0.97	31.61	3.00
2/15/2021	4	9838400	8200	725	5	2050	6023	7	1.75	38.57	1.13	30.37	1.75
2/18/2021	3	9844100	5700	728	3	1900	6026	3	1.00	60.00	1.00	31.67	1.00
2/23/2021	5	9855100	11000	734	6	2200	6037	11	2.20	32.73	1.20	30.56	2.20
2/26/2021	3	9863700	8600	739	5	2867	6047	10	3.33	28.20	1.57	30.50	3.33
3/1/2021	3	9870600	6900	743	4	2300	6059	12	4.00	19.00	1.27	30.26	4.00
3/5/2021	4	9878600	8000	747	5	2000	6068	9	2.25	30.00	1.13	29.63	2.25
3/8/2021	3	9885600	7000	751	4	2333	6071	3	1.00	74.00	1.23	31.53	1.00
3/12/2021	4	9894400	8800	756	5	2200	6079	8	2.00	36.75	1.23	29.93	2.00
3/16/2021	4	9904400	10000	761	6	2500	6092	13	3.25	25.38	1.38	30.30	3.25
3/18/2021	2	9909700	5300	764	3	2650	6095	3	1.50	60.00	1.50	29.44	1.50
3/22/2021	4	9924300	14600	772	8	3650	6105	10	2.50	47.40	1.98	30.80	2.50

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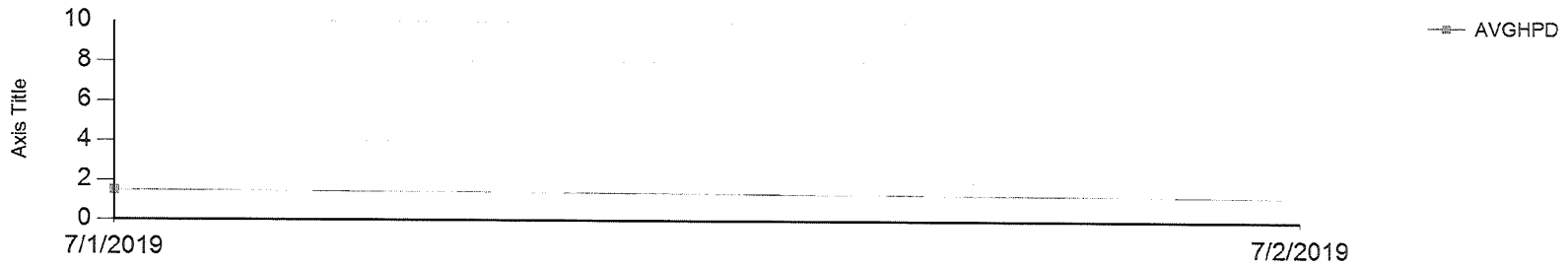
3/25/2021	3	9930900	6600	776	4	2200	6116	11	3.67	20.73	1.27	28.95	3.67
3/29/2021	4	9940300	9400	782	5	2350	6130	14	3.50	23.14	1.35	29.01	3.50
4/1/2021	3	9946700	6400	785	4	2133	6138	8	2.67	27.75	1.23	28.83	2.67
4/6/2021	5	9961000	14300	794	8	2860	6154	16	3.20	31.13	1.66	28.71	3.20
4/9/2021	3	9971600	10600	800	6	3533	6166	12	4.00	31.00	2.07	28.49	4.00
4/13/2021	4	9980500	8900	805	5	2225	6177	11	2.75	28.36	1.30	28.53	2.75
4/16/2021	3	9988900	8400	810	5	2800	6188	11	3.67	26.18	1.60	29.17	3.67
4/20/2021	4	10000800	11900	817	7	2975	6203	15	3.75	28.00	1.75	28.33	3.75
4/23/2021	3	10009700	8900	822	5	2967	6213	10	3.33	30.60	1.70	29.08	3.33
4/26/2021	3	10017600	7900	826	5	2633	6225	12	4.00	22.50	1.50	29.26	4.00
4/30/2021	4	10029900	12300	833	7	3075	6243	18	4.50	23.67	1.78	28.87	4.50
5/3/2021	3	10047000	17100	843	10	5700	6267	24	8.00	24.75	3.30	28.79	8.00
5/6/2021	3	10054700	7700	848	5	2567	6280	13	4.33	20.77	1.50	28.52	4.33
5/10/2021	4	10069800	15100	857	9	3775	6305	25	6.25	20.88	2.18	28.93	6.25
5/12/2021	2	10075700	5900	860	3	2950	6316	11	5.50	18.55	1.70	28.92	5.50
5/17/2021	5	10091100	15400	869	9	3080	6340	24	4.80	22.25	1.78	28.84	4.80
5/20/2021	3	10101200	10100	875	6	3367	6355	15	5.00	23.60	1.97	28.53	5.00
5/25/2021	5	10128300	27100	891	16	5420	6393	38	7.60	25.11	3.18	28.41	7.60
5/28/2021	3	10144900	16600	901	10	5533	6418	25	8.33	24.00	3.33	27.67	8.33
6/1/2021	4	10157300	12400	908	7	3100	6440	22	5.50	19.91	1.83	28.31	5.50
6/3/2021	2	10165800	8500	913	5	4250	6452	12	6.00	26.50	2.65	26.73	6.00
6/8/2021	5	10184300	18500	925	11	3700	6484	32	6.40	21.38	2.28	27.05	6.40
6/11/2021	3	10193200	8900	930	6	2967	6502	18	6.00	18.33	1.83	26.97	6.00
6/14/2021	3	10202700	9500	936	6	3167	6520	18	6.00	19.33	1.93	27.30	6.00
6/18/2021	4	10216900	14200	945	9	3550	6543	23	5.75	23.48	2.25	26.30	5.75
6/21/2021	3	10230100	13200	953	9	4400	6562	19	6.33	26.84	2.83	25.88	6.33
6/24/2021	3	10240600	10500	960	7	3500	6577	15	5.00	27.20	2.27	25.74	5.00
6/28/2021	4	10254200	13600	969	9	3400	6597	20	5.00	26.70	2.23	25.47	5.00

PUMP STATUS REPORT FORM

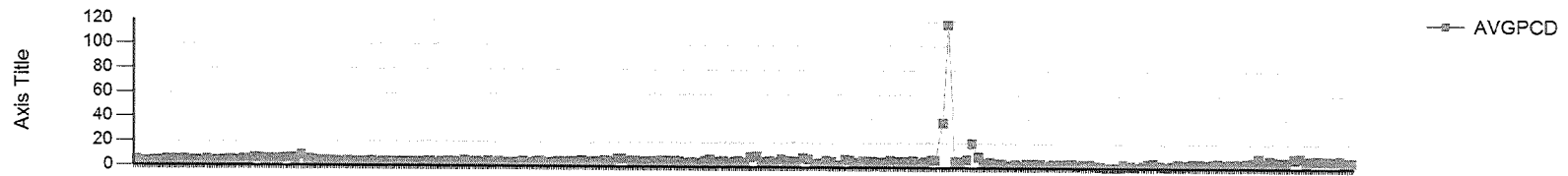
Average Gallons per Minute



Average Hours per Day

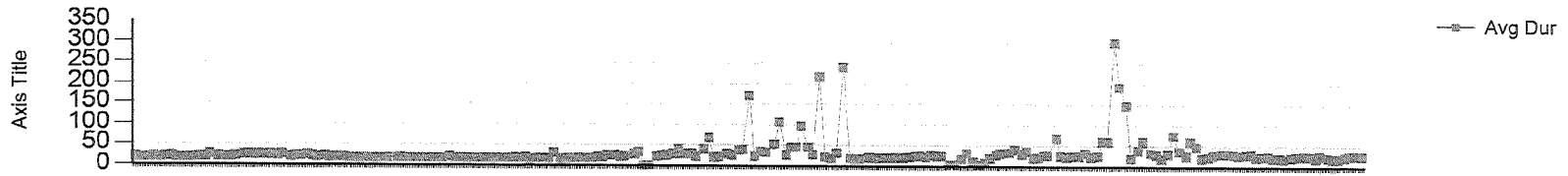


Average Pump Cycles per Day



PUMP STATUS REPORT FORM

Average Duration



Reading Date

**APPENDIX A**

**BLUE WATER COVE**

**G. ORIGINAL 24-HOUR PUMP TEST FOR EACH WELL**

FROM :

FAX NO. :

Jun. 30 2004 2:18 PM 97R2

Combs Inc. PAGE 2 OF 2

North Carolina Department of Environment and Natural Resources • Division of Water Quality • Groundwater Section  
1428 Mail Service Center • Raleigh, N.C. 27699-1428 Phone (910) 799-9221

WELL CONSTRUCTION RECORD

WELL CONTRACTOR: Combs Inc.  
WELL CONTRACTOR IDENTIFICATION #: 26121  
STATE WELL CONSTRUCTION PERMIT#: \_\_\_\_\_

1. WELL USE (Check Applicable Box): Residential  Municipal  Industrial  Agricultural  Monitoring   
 Recovery  Heat Pump Water Injection  Other  Other-Indicate: \_\_\_\_\_

2. WELL LOCATION: (Show sketch of the location below)  
 Nearest Town: \_\_\_\_\_ County: Jones

3. OWNER: \_\_\_\_\_  
 Address: 6101 Gusem Dr. Summerfield N.C.  
 City of Town: Summerfield N.C. State: NC Zip Code: \_\_\_\_\_

DRILLING LOG		DEPTH
From	To	Formation Description
0	21	1.0 sand
21	57	2.0 clay
57	500	3.0 gravel

4. DATE DRILLED: 6.22.04  
 5. TOTAL DEPTH: 57  
 6. CUTTINGS COLLECTED: YES  NO   
 7. DOES WELL REPLACE EXISTING WELL? YES  NO   
 8. STATIC WATER LEVEL: Below Top of Casing: \_\_\_\_\_ FT.  
 (Use "X" Above Top of Casing)  
 9. TOP OF CASING IS: 2 FT. Above Land Surface  
 \*Top of casing terminated after below land surface requires a variance in accordance with 15A NCAC 2A .0118  
 10. YIELD (gpm): 30 METHOD OF TEST: Big blowing  
 11. WATER ZONES (depth): 1-70

12. CHLORINATION: Type MTU Amount: 2.1 lb  
 13. CASING: \_\_\_\_\_

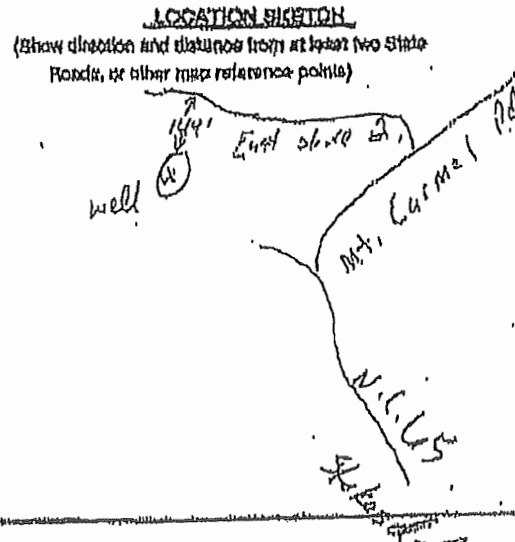
From	To	Depth	Diameter	Well Type	Material
0	21	21	1.5	1.5	1.5
21	57	57	1.5	1.5	1.5

From	To	Depth	Material	Method
0	57	57	1.5 sand	1.5 Pump

From	To	Depth	Diameter	Slot Size	Material
0	57	57	1.5	1.5	1.5

From	To	Depth	Size	Material
0	57	57	1.5	1.5

17. REMARKS: \_\_\_\_\_



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

FOR OFFICE USE ONLY  
 Date Rec: \_\_\_\_\_  
 Serial No. \_\_\_\_\_

SIGNATURE OF PERSON CONSTRUCTING THE WELL: Combs Inc. DATE: 6.22.04  
 Special Ordinance to Division of Water Quality, Groundwater Section within 30 days (15A NCAC 2A .0118)

OFFICIAL COPY  
 Sep 01 2021

**AQUA NORTH CAROLINA**  
**PUMP TEST FOR : BLUE WATER COVE WELL 1**  
**WELL INFORMATION**

OWNER OF WELL : KEVAN COMBS  
 CITY: STOKESDALE  
 COUNTY : FORSYTH  
 WELL DRILLER : DAVID COBLE  
 DEPTH OF WELL : 500 FT  
 TYPE OF CASING : GALVANIZED  
 CASING ABOVE GROUND LEVEL : 2 FT  
 DRILLER CERTIFICATION : 2001  
 DEPTH OF CASING : 71  
 DIAMETER OF CASING : 6 1/4  
 DRIVE SHOE :  
 DEPTH OF GROUT : 57 FT ESTIMATED WELL YIELD : 30 GPM  
 DATE WELL DRILLED : 6/22/04 SURFACE WATER WITHIN 100 FT : NO  
 TYPE OF CHLORINATION : 100 OZ LIQUID CL2 NEW OR OLD WELL : NEW  
 STATIC LEVEL AT START OF PUMP TEST : 30 FT

**PUMP INFORMATION**

MOTOR : 5 HP WIRE : 6/8 AWG  
 PUMP : 55GS50 DROP PIPE : 2" 200 FT  
 VOLTAGE : 230 PHASE : SINGLE  
 TYPE OF METER : TURBINE SIZE OF METER : 2"  
 DATE AT START OF PUMP TEST : 7/8/04 NEW WELL SAMPLES TAKEN : YES  
 TIME AT START OF PUMP TEST : 8 AM  
 TIME AND DATE OF PUMP TEST COMPLETION : 8 AM 7/9/04

TIME	GPM	STATIC	COMMENTS
8:00	30	100	
8:05	70	160	
8:10	30	200	
8:15	30	115	AT PUMP TRIM TO 30 GPM
8:20	30	112	PUMPING DARK GREY WATER
8:25	30	110	
8:30	30	109	
8:35	30	109	
8:40	30	109	
8:45	30	109	
8:50	30	110	
8:55	30	110	
9:00	30	110	
9:10	30	111	
9:20	30	111	
9:30	30	112	
9:40	32	111	
9:50	30	112	
10:00	30	113	
10:15	30	113	PH 7.0 CL2 .6 IRON .5
10:30	30	114	
10:45	30	114.5	
11:00	30	115	
11:30	30	116	OPEN

12:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
1:00
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117
120
121
122
113
113
113
120
122
132
135
140
143
145
146
148
148
150
150
150
150

PH 7.0 CL2.3 IRON .5  
METER STOPPED UP

TRIM

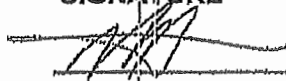
PH 7.0 CL2.1 IRON .4

RECOVERY

TIME
8:05
8:10
8:15
8:20
8:25
8:30
8:35
8:35
8:40
8:45
8:50
8:55
9:00
9:05

STATIC
130
115
105
95
90
86
80
77
74
72
70
67
64
63

SIGNATURE





## APPENDIX A

### BLUE WATER COVE

- H. COPIES WITHIN THE LAST SIX MONTHS OF ALL AQUA NC EMAILS TO AND FROM PWSS, LETTERS TO AND FROM PWSS, REPORTS TO AND FROM PWSS, AND THE RECOMMENDATIONS OF PWSS REGARDING WATER QUALITY CONCERNS ON AQUA NC'S WATER SYSTEMS

**Lambeth, Robyn E**

---

**From:** Berger, Amanda A  
**Sent:** Friday, May 21, 2021 3:39 PM  
**To:** Rhodes, Dustin M  
**Cc:** Harold; Norris, Andrew; Ison, Laurie T; Raynor, Linda; McDaniel, Dave; Dycus, Deb J; Hassan, Monti; Melton, Michael A  
**Subject:** RE: [External] Blue Water Cove

Good afternoon Dustin,

Thank you. Pleased to report that we are making progress based on the latest update from engineering. We anticipate start-up the first week of July, and I greatly appreciate the additional time in case there are any issues during construction.

Hope you all have a great weekend too!

Thanks!  
Amanda

**AQUA**

Amanda Berger  
Director, Environmental Compliance  
Aqua North Carolina  
202 Mackenan Court; Cary, NC 27511  
O: 919.653.6965 M:910.773.0406



**From:** Rhodes, Dustin M <Dustin.Rhodes@ncdenr.gov>  
**Sent:** Friday, May 21, 2021 3:36 PM  
**To:** Berger, Amanda A <AABerger@aquaamerica.com>  
**Cc:** Harold <Harold@waterpuro.com>; Norris, Andrew <ABNorris@aquaamerica.com>; Ison, Laurie T <LTison@aquaamerica.com>; Raynor, Linda <linda.raynor@ncdenr.gov>; McDaniel, Dave <DTMcDaniel@aquaamerica.com>; Dycus, Deb J <DJDycus@aquaamerica.com>; Hassan, Monti <monti.hassan@ncdenr.gov>; Melton, Michael A <MAMelton@aquaamerica.com>  
**Subject:** RE: [External] Blue Water Cove

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Amanda,

Thank you for sending a request to extend the deadline to install corrosion control treatment for Blue Water Cove S/D (NC 30-34-012). In accordance with §141.82(h) of the Lead & Copper Rule, the State may modify its determination of optimal corrosion control treatment upon request by the water system. Per §141.82(h), the State must specify a new treatment installation schedule.

Based on new data provided in the corrosion control study prepared by Cornwell Engineering and submitted to our office on April 5, 2021, we understand that a change in the recommended corrosion control treatment to the installation of a calcite filter to maintain pH 7.2 – 7.8 was necessary to address corrosion. We issued a revised corrosion control

treatment approval on April 20, 2021 (see attached approval letter for reference) based on the data provided in this new Cornwell Engineering study. In order to properly implement the revised approved treatment, we approve your request to extend the treatment installation deadline from May 24, 2021 to **August 1, 2021**.

Please let us know if you have any questions or concerns. Thank you, and have a good weekend!

Dustin



Dustin M. Rhodes, P.E.  
Lead & Copper Team Leader, Division of Water Resources  
North Carolina Department of Environmental Quality  
919.707.9082 (Office)  
919.715.6637 (Fax)  
Dustin.Rhodes@ncdenr.gov

Environmental quality and related information is subject to the North Carolina Public Records Law and may be disclosed to third parties.

**From:** Berger, Amanda A [mailto:AABerger@aquaamerica.com]  
**Sent:** Thursday, May 6, 2021 10:04 AM  
**To:** Rhodes, Dustin M <Dustin.Rhodes@ncdenr.gov>; Melton, Michael A <MAMelton@aquaamerica.com>; Hassan, Monti <monti.hassan@ncdenr.gov>  
**Cc:** Harold <Harold@waterpuro.com>; Norris, Andrew <ABNorris@aquaamerica.com>; Ison, Laurie T <LTIson@aquaamerica.com>; Raynor, Linda <linda.raynor@ncdenr.gov>; McDaniel, Dave <DTMcDaniel@aquaamerica.com>; Dycus, Deb J <DJDycus@aquaamerica.com>  
**Subject:** RE: [External] Blue Water Cove

**CAUTION:** External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Good morning Dustin,

I hope this email finds you well.

Aqua is requesting an extension to the CCT Installation date due to manufacturing and permitting delays. Per our contractor, start-up on the new filter is scheduled for early July, with the filter anticipated to be fully on-line by mid-July. Would it be possible to extend the May 24<sup>th</sup> installation date to August 1, 2021? I added 2 weeks to the schedule to accommodate in changes in schedule to manufacturing and/or other delays.

Thank you for your time considering our request.

Best regards,  
Amanda



Amanda Berger  
Director, Environmental Compliance  
Aqua North Carolina  
202 Mackenan Court; Cary, NC 27511  
O: 919.653.6965 M:910.773.0406



**From:** Rhodes, Dustin M <[Dustin.Rhodes@ncdenr.gov](mailto:Dustin.Rhodes@ncdenr.gov)>  
**Sent:** Tuesday, April 20, 2021 11:59 AM  
**To:** Melton, Michael A <[MAMelton@aquaaamerica.com](mailto:MAMelton@aquaaamerica.com)>; Hassan, Monti <[monti.hassan@ncdenr.gov](mailto:monti.hassan@ncdenr.gov)>  
**Cc:** Harold <[Harold@waterpuro.com](mailto:Harold@waterpuro.com)>; Norris, Andrew <[ABNorris@aquaaamerica.com](mailto:ABNorris@aquaaamerica.com)>; Ison, Laurie T <[LTison@aquaaamerica.com](mailto:LTison@aquaaamerica.com)>; Berger, Amanda A <[AABerger@aquaaamerica.com](mailto:AABerger@aquaaamerica.com)>; Raynor, Linda <[linda.raynor@ncdenr.gov](mailto:linda.raynor@ncdenr.gov)>  
**Subject:** RE: [External] Blue Water Cove

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Michael,

Please see the attached revised CCT Approval letter for Blue Water Cove (NC 30-34-012). We approved your revised CCT Recommendation exactly as written. A hardcopy of this letter will be going out in the mail tomorrow. Please let me know if you have any questions. Thank you!

Dustin



Dustin M. Rhodes, P.E.  
*Lead & Copper Team Leader, Division of Water Resources*  
 North Carolina Department of Environmental Quality  
 919.707.9082 (Office)  
 919.715.6637 (Fax)  
[Dustin.Rhodes@ncdenr.gov](mailto:Dustin.Rhodes@ncdenr.gov)

Email messages sent to and from the addresses set forth in this North Carolina Public Goods Law and may be disclosed to third parties.

**From:** Rhodes, Dustin M  
**Sent:** Tuesday, April 20, 2021 9:44 AM  
**To:** Melton, Michael A <[MAMelton@aquaaamerica.com](mailto:MAMelton@aquaaamerica.com)>; Hassan, Monti <[monti.hassan@ncdenr.gov](mailto:monti.hassan@ncdenr.gov)>  
**Cc:** Harold <[Harold@waterpuro.com](mailto:Harold@waterpuro.com)>; Norris, Andrew <[ABNorris@aquaaamerica.com](mailto:ABNorris@aquaaamerica.com)>; Ison, Laurie T <[LTison@aquaaamerica.com](mailto:LTison@aquaaamerica.com)>  
**Subject:** RE: [External] Blue Water Cove

Good Morning Michael,

Thank you for the information on the chem free filter system and treatment changes for Blue Water Cove (NC 30-34-012). I expect that our revised OCCT Approval will be finalized and issued to your system today. I will provide a copy of the OCCT Approval both to you and Monti for your files. I do not expect any issues with approval of your revised OCCT Recommendation from a compliance perspective with the Lead & Copper Rule. However, Monti may have other questions related to the Plan Review component of this project. I will report back as soon as the OCCT Approval has been finalized. Thank you!

Dustin



Dustin M. Rhodes, P.E.  
*Lead & Copper Team Leader, Division of Water Resources*  
 North Carolina Department of Environmental Quality  
 919.707.9082 (Office)  
 919.715.6637 (Fax)  
[Dustin.Rhodes@ncdenr.gov](mailto:Dustin.Rhodes@ncdenr.gov)

Email messages sent to and from the addresses set forth in this North Carolina Public Goods Law and may be disclosed to third parties.

**From:** Melton, Michael A [<mailto:MAMelton@aquaaamerica.com>]  
**Sent:** Tuesday, April 20, 2021 9:25 AM  
**To:** Rhodes, Dustin M <[Dustin.Rhodes@ncdenr.gov](mailto:Dustin.Rhodes@ncdenr.gov)>; Hassan, Monti <[monti.hassan@ncdenr.gov](mailto:monti.hassan@ncdenr.gov)>  
**Cc:** Harold <[Harold@waterpuro.com](mailto:Harold@waterpuro.com)>; Norris, Andrew <[ABNNorris@aquaaamerica.com](mailto:ABNNorris@aquaaamerica.com)>; Ison, Laurie T <[LTison@aquaaamerica.com](mailto:LTison@aquaaamerica.com)>  
**Subject:** [External] Blue Water Cove

**CAUTION:** External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Good morning. Hope both of you are doing well. Based on the high level of Fe at this site and the fact that we have a lead exceedance, Aqua has opted to remove the iron, adjust the pH, and essentially decrease the likelihood of any lead solubility with the chem free filter system. As the OCCT discusses, the homes were built in 2005/2006 and there are no copper plumbing inside any of the 13 homes. Most if not all of the homeowners have installed whole house water softeners. The customer that tested high with Pb failed to follow instructions and collected the sample of concern after returning from a week long vacation. So we do not believe that we have a real corrosion issue, but because of the way the regulations are written, we had to perform desk top study. The approved revised study calls out for the installation of the chem free filter system and no phosphate. Because of a compliance deadline, we really need to get any confusion resolved very quickly as we now have our building permit and must get busy with the construction. I hope all of your concerns have been addressed and would request that an ATC be issued. Thank you



**Michael A. Melton**  
**Engineering Manager**  
**Aqua North Carolina, Inc.**  
4163 Sinclair Street, Denver, NC 28037  
O: 704.489.9404 ext 57238 M:704.507.3315 F: 704.489.9409

*"I just wanna be a nobody that's willing to tell everybody that there is Somebody that can save anybody"*  
*Melvin Thomas Graham (August 25, 1924 – August 24, 2003),*

ROY COOPER  
Governor  
DIONNE DELLI-GATTI  
Secretary  
S. DANIEL SMITH  
Director



April 20, 2021

SYSTEM ID# NC3034012, FORSYTH COUNTY  
BLUE WATER COVE S/D  
ATTN: AMANDA BERGER  
202 MACKENAN COURT  
CARY NC 27511

**Re: Blue Water Cove S/D  
Corrosion Control Treatment (CCT)  
Recommendation – Approval REVISED**

Your previous recommendation for installation of corrosion control treatment was outlined in your original plan dated March 29, 2019. This plan was approved May 24, 2019 for the following treatment:

- At the entry point P01, install a blended phosphate feed system to maintain an orthophosphate residual of at least 1.0 mg/L as PO<sub>4</sub>, at the entry point and in the distribution system.

We have reviewed your revised recommendation for installation of corrosion control treatment outlined in your plan dated and received in our office April 5, 2021. After a review of your recommendation, distribution system lead and copper sampling results, water quality parameters, source water lead and copper concentrations, and EPA guidance, **we approve the following treatment as specified in your revised recommendation:**

- **Install a calcite filter to maintain pH 7.2 – 8.2 standard units at the entry point and in the distribution system.**
- **Note that the installation of a blended phosphate feed system has been removed from the original recommendation.**

As many chemical and physical factors can affect the release of lead and copper in distribution systems, you may consider hiring a Professional Engineer to develop site-specific treatment to ensure lead and copper concentrations below the action levels. Also, please note that EPA guidance also provides recommendations on performing a comprehensive flushing program prior to initiation of treatment changes.

**After receiving approval from the Public Water Supply Section Plan Review Branch of your plans and specifications for any new equipment, you may proceed with installation of the approved corrosion control treatment. The allowable time period for installation of the treatment is 24 months from the date of the original approval letter (installation due by May 24, 2021).**

After installation of the approved treatment, the system owner shall sign and submit the enclosed form entitled "Lead and Copper - Optimal Corrosion Control Treatment/WQPs and Certification of Installation and Proper Operation" (Form 141-C2) to our office certifying that optimal corrosion control treatment has been installed and is being properly applied by the system operator(s) as required in §141.90 of the Lead and Copper Rule.

When installation of the approved corrosion control treatment is completed, follow-up sampling must be performed for **two consecutive six-month periods**. Each six-month monitoring period must include the following:



1. **Tap Water Monitoring for Lead and Copper** [performed in accordance with §141.86(d)(2)].

During each six-month monitoring period, one sample is to be collected from each of the number of sampling sites listed below based on the system's population:

System Size (Number of People Served)	Number of Sites
≤ 100	5
101 to 500	10
501 to 3,300	20
3,301 to 10,000	40
10,001 to 100,000	60
>100,000	100

2. **Water Quality Parameter (WQP) Monitoring** [performed in accordance with §141.87(c)].

During each six-month monitoring period, WQP sampling and analysis must be performed for the specific treatments and analytes approved in your revised CCT recommendation:

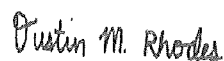
(a) At the required number of locations in the distribution system, two samples during the monitoring period for each of the approved treatment parameters designated by the State as representing optimal corrosion control treatment. See Section §141.87(a) of the Lead and Copper Rule to determine the required number of distribution system sampling locations based on your system's population.

(b) At each entry point to the distribution system, one sample at least every two weeks for each of the approved treatment parameters designated by the State as representing optimal corrosion control treatment.

Upon review of your system's installation and operation of treatment, and completion of the tap water monitoring and WQP monitoring specified above, optimal WQPs will be designated for your system. Your water system is then required to continue operating the approved corrosion control treatment to maintain water quality parameters within the optimal ranges for compliance monitoring.

If you need assistance or have questions concerning this matter, please feel free to contact me at (919) 707-9082 or by email address: [Dustin.Rhodes@ncdenr.gov](mailto:Dustin.Rhodes@ncdenr.gov). Your regional office contact is Eric Hudson, Regional Engineer, at (336) 776-9665.

Sincerely,



Dustin M. Rhodes, P.E.  
Lead and Copper Team Leader  
Compliance Services Branch  
Public Water Supply Section  
Division of Water Resources, NCDEQ

Enclosure: Lead and Copper - Optimal Corrosion Control Treatment/WQPs and Certification of Installation and Proper Operation (Form 141-C2)

cc: Eric Hudson, P.E., Regional Engineer



## LEAD AND COPPER – OPTIMAL CORROSION CONTROL TREATMENT / WQPs AND CERTIFICATION OF INSTALLATION AND PROPER OPERATION

<b>Water System Name:</b>	<b>Water System Number:</b>	<b>County:</b>	<b>System Type:</b> (√ check box) <input type="checkbox"/> Community or <input type="checkbox"/> Non-transient non-community
			<b>Population:</b>
<b>Corrosion Control Treatment Recommendation Approved by Rule Manager:</b>			<b>Rule Manager's Approval Date:</b>

OPTIMAL CORROSION CONTROL TREATMENT (OCCT) PURPOSE AND WATER QUALITY PARAMETERS (WQPs):							Equipment Installed
For Facility ID/Entry Point:	Alkalinity and pH Adjustment		Calcium Hardness Adjustment	Corrosion Inhibitor			
Note: Use a separate form for each Facility ID/Entry Point.	pH	Alkalinity	Calcium	Orthophosphate	Silicate	Other	
<b>WQPs</b>							
Chemicals Used							
Dosage							
Entry Point - Proposed Optimal Operating Range(s)							
Distribution System - Proposed Optimal Operating Range(s)							

OPERATION AND MAINTENANCE OF SYSTEM:				
Operator's Name:	Operator ID#	Certification (Grade & Type) (ex. C Well)	Phone number:	Email:
<b>Does this Operator have a Standard Operating Procedure for the following:</b> <ul style="list-style-type: none"> <li>• Notification to Owner and Public Water Supply Section's Regional Office of treatment equipment malfunctions and/or misfeeding of chemicals: <input type="checkbox"/> YES <input type="checkbox"/> NO</li> <li>• Review of data/information to ensure proper operation and maintenance of CCT and the effectiveness and optimization of CCT: <input type="checkbox"/> YES <input type="checkbox"/> NO</li> </ul>				

***CERTIFICATION - I hereby affirm that optimal corrosion control treatment has been installed and is being properly operated as agreed to between the above named water system and the state of North Carolina, and that the information and dates indicated herein are correct.***

Eng. Plans & Specs. Approval Date: _____	<b>Certified by:</b> _____ <small>(Print Name)</small>	<b>Signature:</b> _____	<b>Certification Date:</b> _____
Authorization to Construct Date: _____ Installation Completion Date: _____ Final Approval and Permit Date: _____ Commencement of Operation Date: _____		<b>System Affiliation:</b> (√ check box) <input type="checkbox"/> Owner or <input type="checkbox"/> Responsible person	

**OFFICIAL COPY**  
**Sep 01 2021**



Lambeth, Robyn E

**From:** Rhodes, Dustin M <Dustin.Rhodes@ncdenr.gov>  
**Sent:** Thursday, April 1, 2021 3:20 PM  
**To:** Berger, Amanda A  
**Cc:** Hassan, Monti  
**Subject:** RE: [External] Blue Water Cove NC3034012  
**Attachments:** CCT Approval and Recommendation for Blue Water Cove SD (NC3034012).pdf

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Amanda,

I have checked in with Plan Review, and they are currently reviewing the plans/specs for Blue Water Cove S/D (NC 30-34-012) for project serial no. 21-0024. The calcite filter for pH adjustment was not originally approved as part of the CCT approval (see attached). In Aqua's original recommendation, we approved the CCT strategy for blended phosphate to maintain an orthophosphate residual of at least 1.0 mg/L as PO4.

Do you wish to revise your CCT recommendation to the use of the calcite filter instead for pH adjustment? If so, we would need to revise our CCT approval letter. If that is the case, please provide any justification for switching the recommended treatment to the calcite filter from the original recommendation to use blended phosphate. I'll do my best to expedite the updated CCT approval so we can get Plan Review's process moving as quickly as possible. I am copying Monti Hassan to this email as he is the Plan Review engineer reviewing this project.

Thank you!

Dustin



Dustin M. Rhodes, P.E.  
*Lead & Copper Team Leader, Division of Water Resources*  
North Carolina Department of Environmental Quality  
919.707.9082 (Office)  
919.715.6637 (Fax)  
Dustin.Rhodes@ncdenr.gov

E-mail correspondence to and from this address is subject to the North Carolina Public Access Policy and may be disclosed to third parties.

**From:** Berger, Amanda A [mailto:AABerger@aquaaamerica.com]  
**Sent:** Monday, March 29, 2021 1:36 PM  
**To:** Rhodes, Dustin M <Dustin.Rhodes@ncdenr.gov>  
**Subject:** [External] Blue Water Cove NC3034012

**CAUTION:** External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Hi Dustin,

Hope you are doing well! I wanted to make you aware that Aqua has submitted plans to install calcite filtration to adjust pH and address the Fe/Mn at Blue Water Cove. My engineering team reported that the plans have been at Plan Review for a few weeks now. Just curious if you would be willing to reach out to Plan Review Section and let them know this is a compliance project? I am concerned that if we don't start construction soon, we may not make our May installation deadline.

Feel free to call me if you have any questions. As always, thank you!!

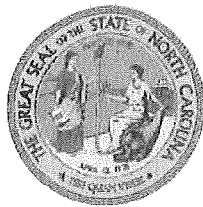
Best regards,



**Amanda Berger**  
**Director, Environmental Compliance**  
**Aqua North Carolina**

202 MacKenan Ct; Cary, NC 27511  
O: 919.653.6965 M:910.773.0406





NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor  
MICHAEL S. REGAN  
Secretary  
LINDA CULPEPPER  
Director

May 24, 2019

SYSTEM ID# NC3034012, FORSYTHE COUNTY  
BLUE WATER COVE S/D  
ATTN: LAURIE T ISON  
4163 SINCLAIR STREET  
DENVER NC 28037

Re: **Blue Water Cove S/D  
Optimal Corrosion Control Treatment (OCCT)  
Recommendation – Approval**

We have reviewed the recommendation for installation of optimal corrosion control treatment outlined in your plan dated March 29, 2019. After a thorough review of your recommendation, distribution system lead and copper sampling results, water quality parameters, source water lead and copper concentrations, and EPA guidance, we approve the following treatment:

- **At the entry point P01, install a blended phosphate feed system to maintain an orthophosphate residual of at least 1.0 mg/L as PO<sub>4</sub>, at the entry point and in the distribution system.**

After receiving approval from the Public Water Supply Section Plan Review Branch of your plans and specifications for any new equipment, you may proceed with installation of the approved optimal corrosion control treatment. The allowable time period for installation of the treatment is by **May 24, 2021**. After installation of the approved treatment, the system owner shall sign and submit the enclosed certification to this office certifying that optimal corrosion control treatment has been installed and is being properly applied by the system operator(s) as required in Section 141.90 of the Lead and Copper Rule.

When installation of the approved corrosion control treatment is completed, drinking water samples must be collected and analyzed for lead and copper for two consecutive six-month periods. Each six-month monitoring period must include the following:

1. **Tap Water Monitoring:** During each six-month monitoring period, one sample is to be collected from each of the number of sampling sites listed below:

System Size (Number of People Served)	Number of Sites
≤ 100	5
101 to 500	10
501 to 3,300	20
3,301 to 10,000	40
10,001 to 100,000	60
>100,000	100

2. **Optimal Water Quality Parameters:** After installation of the approved corrosion control treatment, the system is required to monitor for Water Quality Parameters (WQPs) for 2 consecutive 6-month periods in accordance with Section 141.87 of the Lead and Copper Rule. **Monitoring and analysis must be performed for the specific treatments and analytes approved in the first paragraph of this letter.** After completion of this monitoring, complete the enclosed form, "Optimal Corrosion Control Treatment/Water Quality Parameters" and return it to the Lead and Copper Rule Manager at the address shown at the bottom of the first page of this letter. The information on this form will be used to establish optimal water quality parameters for your system.



The water system is then required to continue operating the approved corrosion control treatment to maintain water quality parameters within the optimal ranges for compliance monitoring.

- 3. WQP Compliance Monitoring: After optimal WQPs have been established, systems serving populations less than or equal to 50,000 people shall monitor water quality parameters during each six-month monitoring period in which the system exceeds an action level:

- (a) At the required number of locations in the distribution system, two samples during the monitoring period for each of the approved treatment parameters designated by the State as representing optimal corrosion control treatment. See Section 141.87(a) of the Lead and Copper Rule to determine the required number of distribution system sampling locations based on your system's population.

- (b) At each entry point to the distribution system, one sample at least every two weeks for each of the approved treatment parameters designated by the State as representing optimal corrosion control treatment.

If you need assistance or have questions concerning this matter, please feel free to contact me at (919) 707-9090 or by email address: [bryan.groza@ncdenr.gov](mailto:bryan.groza@ncdenr.gov). Your regional office contact is Eric Hudson, Regional Engineer, at (336) 776-9800.

Sincerely,



Bryan A. Groza  
Engineer  
Compliance Services Branch  
Public Water Supply Section

Enclosure: Optimal Corrosion Control Treatment/Water Quality Parameters Form/ Certification of Treatment Installation (141-C2)

cc: Eric Hudson, Regional Engineer

Blue Water Cove NC 3034012

CCT Recommendation

B. Groza 4/8/19

→ 1.6-2.0 mg/L dose  
(1.0-1.5 g/g PO<sub>4</sub>)

Recommend: ortho-poly phosphate blend  
no pH adjustment due to constraints of North feed  
\*many (all) customers have whole house treatment

exceeded lead during RM 2018

WQPs (avg)

entry (1 EP):

pH: 7.9  
Temp: 15 °C  
Alk: 50.5 mg/L as CaCO<sub>3</sub>  
Ca: 13.6 mg/L as Ca  
Cond: 135 µmho/cm @ 25 °C

distribution:

pH: 8.1  
temp: 15 °C  
alk: 51 mg/L as CaCO<sub>3</sub>  
Ca: 13.7 mg/L as Ca  
Cond: 135 µmho/cm @ 25 °C

DIC: ~12 mg/L  
pH set: ~8.8

Flawchart 1C:

Raise pH w/ caustic

OR

add orthophosphate

Fe, Mn Present: Flawchart

3b:

add blended phosphate

Note: Aqua's flow chart selection  
and modeled initial parameters suggest  
a lower pH (7.1) than WAP's (7.8-8.1)

if pH actually lower, may require pH adjustment

SDWS results confirm higher pH



March 29, 2019

Brian Groza  
Lead and Copper Rule Manager  
Public Water Supply Section  
1634 Mail Service Center  
Raleigh, North Carolina 27699

Re: Corrosion Control Treatment Study  
Blue Water Cove, PWSID 30-34-012  
Forsyth County

Mr. Groza:

Attached are the Evaluation Form and the Optimal Corrosion Control Treatment Study (See Attached.) for the referenced community water system.

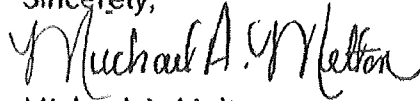
As a result of this study, Aqua North Carolina, Inc proposes adding an ortho-poly blended phosphate to act as a corrosion control inhibitor and a sequestering agent in the water distribution serving Blue Water Cove. We do not propose performing pH adjustment with NaOH as the guidance suggests since raw water pH is 7.1. Enclosed in the study is an iterative analysis of comparing the interim pH at various caused feed rates. The analysis shows that a small adjustment from 5 mg/L to 8 mg/L increases the pH from an interim pH of 7.74 to 8.78. Based on the tight constraints on the feed rate of NaOH, Aqua does not believe that this is operationally feasible. In addition, raising the pH will also have the effect of oxidizing the naturally occurring iron and manganese. Finally, it should be pointed out that many of the customers have indicated to us that they have installed home treatment systems. In light of the aforementioned, we only want to propose feeding the ortho-poly phosphate blend at this time.

Pending your review and acceptance of the proposed treatment, we will move forward with the preparation and submission of Engineering Plans and Specifications for the addition of ortho-poly phosphate at Well #1.

Mr. Groza  
March 20, 2019  
Page 2

We appreciate your cooperation and expeditious review of this study. If you have any questions, please feel free to contact me at (704)489-9404, extension 57238.

Sincerely,



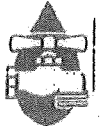
Michael A. Melton  
Engineering Manager

/mam

Enclosures

Cc: Laurie Ison, Western Region Area Manager  
Amanda Owens Berger, Manager of Environmental Compliance  
Dave McDaniel, Northwest Regional Supervisor  
Debbie Dycus, Environmental Compliance Administrator





# Evaluation Form for Corrosion Control Treatment (CCT) For Small / Medium Systems

MAIL TO: Lead and Copper Rule Manager  
Compliance Services Branch  
Public Water Supply Section  
1634 Mail Service Center  
Raleigh, North Carolina 27699-1634

OFFICIAL COPY

Sep 01 2021

**A. PWS General Information**

Date: March 27, 2019

1. Water System Name: BLUE WATER COVE
2. Water System No.: NC3034012
3. Contact Person: Name: LAURIE ISON  
Mailing Address: 4163 SINCLAIR STREET  
DENVER, NC 28037  
Telephone: (704) 489-9404 ext. 57234  
Email: lison@aquaaamerica.com
4. Population Served: 30
5. Person Responsible for Preparing this Form:  
Name: Debbie Dycus Signature: *Debbie Dycus*  
Telephone: (704) 489-9404 ext. 57228  
Email: djdycus@aquaaamerica.com  
Agency (if other than system contact): \_\_\_\_\_

**B. PWS Technical Information**

**1. Lead/Copper Monitoring Results from Monitoring Period with Exceedance:**

Monitoring Period: From June to September year 2018

First-draw Tap Water Monitoring Results:

- Lead: Minimum concentration = <0.003 mg/L  
Maximum concentration = .0327 mg/L  
90<sup>th</sup> percentile = .026 mg/L
- Copper: Minimum concentration = <0.050 mg/L  
Maximum concentration = <0.050 mg/L  
90<sup>th</sup> percentile = <0.050 mg/L

**2. Source Water Lead and Copper:**

**2a) Untreated Supply**

	Water Sources				
	1	2	3	4	5
Lead Concentration in mg/L:	<0.003				
Copper Concentration in mg/L:	<0.050				

**2b) Treated Supply (at Entry Point)**

	Entry Point				
	1	2	3	4	5
Lead Concentration in mg/L:	<0.003				
Copper Concentration in mg/L:	<0.050				



**3. Water Quality Parameter (WQP) Monitoring Results:**

3a) Entry Point WQP Monitoring Results (treated supply). Two WQP samples should be collected per Entry Point (on different days, illustrating normal water system operation). Copy this sheet as necessary for additional entry points. Please record both sets of results per Entry Point into the table.

Parameter	Entry Point					
	#1		#2		#3	
pH units:	8.0	7.8				
Temperature, °C:	15	15				
Alkalinity, mg/L as CaCO <sub>3</sub> :	.50	51				
Calcium, mg/L as Ca:	13.0	14.1				
Conductivity, $\Phi$ mho/cm @ 25° C:	130	140				
Orthophosphate*, mg/L as PO <sub>4</sub> :						
Silica*, mg/L as SiO <sub>2</sub> :						

\* Report only if PWS currently uses this inhibitor

3b) WQP Distribution System Monitoring Results (provide minimum and maximum values if multiple samples are collected). Indicate whether the result is a field or laboratory measurement.

Parameter	Field	Lab
pH: minimum = <u>7.8</u> maximum = <u>8.3</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature: minimum = <u>15</u> °C maximum = <u>15</u> °C	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alkalinity: minimum = <u>50</u> mg/L as CaCO <sub>3</sub> maximum = <u>52</u> mg/L as CaCO <sub>3</sub>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Calcium: minimum = <u>13.2</u> mg/L as Ca maximum = <u>14.1</u> mg/L as Ca	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conductivity: minimum = <u>130</u> $\Phi$ mho/cm @ 25° C maximum = <u>140</u> $\Phi$ mho/cm @ 25° C	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Orthophosphate*: minimum = _____ mg/L as PO <sub>4</sub> maximum = _____ mg/L as PO <sub>4</sub>	<input type="checkbox"/>	<input type="checkbox"/>
Silica*: minimum = _____ mg/L as SiO <sub>2</sub> maximum = _____ mg/L as SiO <sub>2</sub>	<input type="checkbox"/>	<input type="checkbox"/>

\* Report only if PWS currently uses this inhibitor

3c) Untreated and Treated Water Quality:

Identify water source(s) by source type (wells, river, lake, purchased, etc):

Source No. 1 Groundwater

Source No. 2 \_\_\_\_\_

Source No. 3 \_\_\_\_\_

**NOTE:** If you currently use ONLY groundwater and chlorination, you may skip completing the table. ALL other system MUST complete the table for untreated and treated water quality comparison.

Complete the table below for all sources, including typical untreated (source water) and treated (entry point) water quality data. The treated data will be the same information as included in section 3a (average the results for each Entry Point to arrive at one value per parameter per entry point). This information will be used to identify any significant differences between your source water and treated water. Copy this sheet for additional sources.

- For surface water sources, include data for each raw water source and finished water quality information from each treatment plant (entry point).
- For groundwater sources, water quality information from each well is acceptable, but not necessary, if several wells have similar data. Include a water quality summary for each well field or grouping of wells with similar quality.

Include available data for the following:

Parameters	Source No. 1		Source No. 2		Source No. 3	
	Untreated	Treated	Untreated	Treated	Untreated	Treated
pH, units						
Temperature, °C						
Alkalinity, mg/L as CaCO <sub>3</sub>						
Calcium, mg/L Ca						
Conductivity, $\mu$ mho/cm @ 25° C						
Orthophosphate, mg/L as PO <sub>4</sub>						
Silica, mg/L as SiO <sub>2</sub>						
Total dissolved solids, mg/L						
Hardness, mg/L as CaCO <sub>3</sub>						
Chloride, mg/L						
Sulfate, mg/L						
Iron, mg/L						
Manganese, mg/L						

Disinfectant Residual						
-----------------------	--	--	--	--	--	--

**4. Existing Conditions:**

Is any treatment used?  yes  no

If treatment is used, is more than one source used at a time?  yes  no

Identify treatment processes used (differentiate by source as necessary):  
Bacteria disinfectant

List all chemicals normally fed:  
Sodium Hypochlorite

List all chemicals occasionally fed (include any seasonal chemicals):  
N/A

**5. Planned Changes:**

Has the system already funded and/or submitted plans to change sources or treatment processes in the near future (1-2 years) that are not included in the CCT process?  yes  no  
If so, please list all the planned changes and provide details below. Attach additional sheets if necessary.

**6. Present Corrosion Control Treatment:**

None <input checked="" type="checkbox"/>	
Inhibitor <input type="checkbox"/>	Date initiated: _____
Present dose at treatment plant: _____ mg/L as PO <sub>4</sub> or SiO <sub>2</sub>	
Residual Range in Distribution System:	
Maximum	mg/L as PO <sub>4</sub> or SiO <sub>2</sub> Minimum      mg/L as PO <sub>4</sub> or SiO <sub>2</sub>
Brand name: _____	
Chemical Type: _____	
Has it been effective? Please comment on your experience.	
pH/alkalinity adjustment <input type="checkbox"/>	Date initiated: _____
pH Target:    Range: _____ standard units	
Alkalinity Target:    Range: _____ mg/L as CaCO <sub>3</sub>	
Chemical/Method: _____	
Has it been effective? Please comment on your experience.	
Calcium adjustment <input type="checkbox"/>	Date initiated: _____
Calcium Target:    Range: _____ mg/L as Ca	

Chemical/Method: _____
Has it been effective? Please comment on your experience.

**6. Present Corrosion Control Treatment (continued)**

Has the system performed any corrosion control studies and/or desktop evaluations (including completion of any previous 141-C forms)?  yes  no

If yes, complete the following:

Date(s) of evaluation: From \_\_\_\_\_ to \_\_\_\_\_

Evaluation conducted by system personnel?  yes  no

If no, by whom? \_\_\_\_\_

Briefly describe the results of the study:

Evaluation results attached?  yes  no

What treatment changes were recommended?

Were treatment changes implemented?  yes  no

If yes, have corrosion characteristics of the treated water changed?  yes  no

How has change been measured? (check all that apply)

WQP Values (Entry Point and Distribution System)

Lead/Copper Tap Water Results

Frequency/Type of customer complaints

Other: \_\_\_\_\_

If change was measured through observing WQPs or Lead/Copper results, please briefly describe those results below:

**7. Distribution System:**

Does the distribution system contain lead service lines?  yes  no  
(not including lead goosenecks and/or lead-based solder)

If your system has lead service lines, mark below the approximate number of lines which can be located from existing records.  None  Some  Most  All

Is the distribution system flushed?  Rarely  Sometimes  Frequently

**8. Historical Information:**

Is there a history of water quality complaints?  yes  no

If yes, then answer the following:

Are the complaints documented?  yes  no

For the categories of complaints listed below, denote:

1 for some complaints in this category

2 for several complaints in this category

3 for severe complaints in this category

Categories of complaints:

- Taste and odor \_\_\_\_\_
- Color \_\_\_\_\_
- Sediment \_\_\_\_\_
- Other (specify below) \_\_\_\_\_

**9. Treatment Constraints for Simultaneous Compliance:**

Optimal corrosion control treatment means the selection and operation of corrosion control treatment that minimizes lead and copper concentrations at users' taps, while ensuring the treatment does not cause the water system to violate any other State or national primary drinking water regulations. Water systems have several options for researching which treatments will affect their simultaneous compliance, including the EPA's 2016 Optimal Corrosion Control Treatment Evaluation Technical Recommendations and the Water Research Foundation's "Decision Tool to Help Utilities Develop Simultaneous Compliance Strategies" (particularly the tables on pages 3 through 5). Additional references are listed on Form 141-C - Instructions. Please indicate below which constraints to treatment may apply to your PWS. Use the following codes:

**NOTE:** If your system uses ONLY groundwater and chlorination, you may skip this section.

- 1 Minimal constraint = Some potential impact, extent is uncertain.
- 2 Significant constraint = Additional treatment modifications required beyond CCT.
- 3 Severe constraint = Significant capital improvements required to operate option.
- 4 Very severe constraint = Option is infeasible (must provide explanation below).

Constraint	Treatments			
	pH/Alkalinity adjustment	Calcium adjustment	Inhibitor	
			PO <sub>4</sub>	SiO <sub>2</sub>
<b>A. Regulatory</b>				
SOCs/IOCs				
SWTR: Turbidity				
Total Coliforms				
SWTR/GWR Disinfection				
Disinfection Byproducts				
Radionuclides				
<b>B. Functional</b>				
Taste & Odor				
Wastewater Permit				
Aesthetics				
Operational				
Other				

If you list ANY treatments as Infeasible (option 4), please provide a brief explanation below, or attach additional information related to the decision:

**10. Evaluation:**

Do other similar water system facilities exist with successful corrosion control?  yes  no

If yes, identify their corrosion control treatment method.

- None
- pH/Alkalinity adjustment
- Calcium adjustment

- Inhibitor
  - Phosphate based
  - Silica based

Briefly describe their corrosion control treatment chemicals and/or processes (include the Water System Name and Water System No.):

**11. Recommendation/Proposed Treatment:**

If you do not complete this section using the options listed, the form will be deemed incomplete! Please note that a combination of multiple treatment options may be required to optimize corrosion control.

11a) The corrosion control treatment method installed or being proposed is:

- Option 1: pH/Alkalinity adjustment  
 Target pH is \_\_\_\_\_ units  
 Target alkalinity is \_\_\_\_\_ mg/L as CaCO<sub>3</sub>  
 Chemical/Method used \_\_\_\_\_
- Option 2: Calcium adjustment  
 Target calcium concentration is \_\_\_\_\_ mg/L Ca  
 Chemical/Method used \_\_\_\_\_
- Option 3: Inhibitor
  - Phosphate based  
 Brand name/Chemical type Phosphate  
 Target dose 1.60 – 2.0 mg/L  
 Target residual 1.0 – 1.5 as PO<sub>4</sub> mg/L as Orthophosphate
  - Silica based  
 Brand name/Chemical type \_\_\_\_\_  
 Target dose \_\_\_\_\_ mg/L  
 Target residual \_\_\_\_\_ mg/L as SiO<sub>2</sub>
- Option 4: Adjust current corrosion control treatment (e.g. increase inhibitor dose, increase pH using same chemical, etc.).  
 Describe the changes to be made by attaching additional information detailing why the exceedance occurred, and how this option will be implemented to optimize your treatment:

11b) List your proposed operating guidelines for the appropriate parameters:

<u>Parameter</u>	<u>Operating Value/Range</u>
<u>P04</u>	<u>1.0 to 1.5</u>
_____	_____
_____	_____
_____	_____

Rationale and guidance used for the proposed corrosion control treatment is:

- Discussed in the enclosed report
- Briefly explained below

Note: The information provided in this section are the values/ranges that the system will be held accountable for under the WQP monitoring requirements of section 141.87 of the Rule.

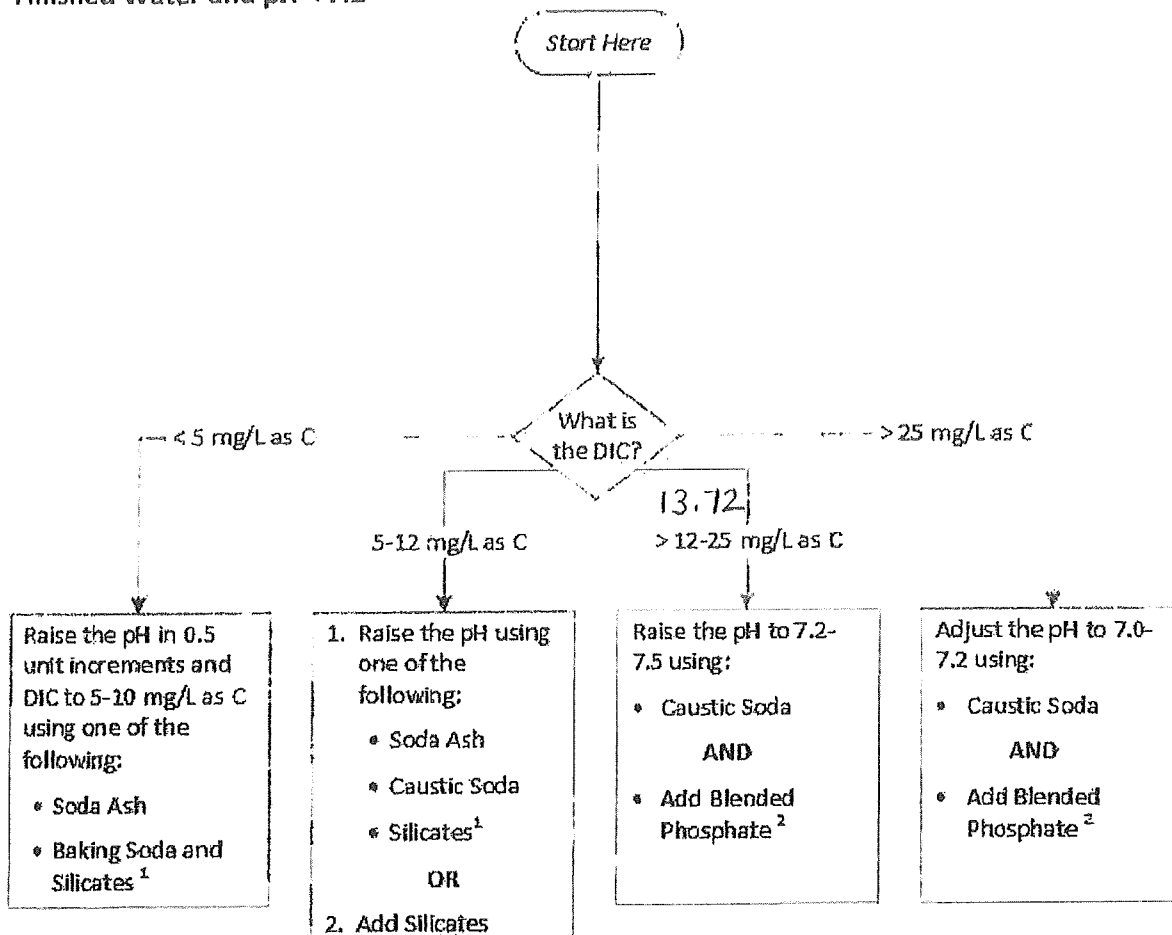
**12. Additional Comments:**

Please provide any additional comments that will assist in determining optimal corrosion control treatment for your PWS. You may attach additional sheets as necessary.



# Blue Water Cove

Flowchart 3a: Selecting Treatment for Lead and/or Copper with Iron and Manganese in Finished Water and pH < 7.2



**KEY:**

- AL = Action Level
- Caustic soda = sodium hydroxide (NaOH)
- DIC = Dissolved Inorganic Carbon
- mg/L as C = milligrams per liter as carbon
- Soda ash = sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>)

**Footnotes:**

1. Silicates are most effective when combined iron and manganese concentrations are less than 1.0 mg/L.
2. The effectiveness of blended phosphate varies based on the formulation. Additional evaluation and/or monitoring is recommended. See Section 3.3.2 for additional discussion.

# Blue Water Cove DIC Extrapolation

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Sep 01 2021

**Appendix B – Estimated Dissolved Inorganic Carbon (mg/L as C) based on Alkalinity and pH (with water temperature of 25 degrees C and TDS of 200)<sup>1, 2</sup>**

Total Alkalinity	pH																				
	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	9.6	9.8	10.0	10.2	10.4
0	0																				
2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0						
4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0			
6	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	0	0		
8	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	0		
10	4	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	1	1	0	
12	5	4	4	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	1	1	
14	6	5	4	4	4	4	4	3	3	3	3	3	3	3	3	3	2	2	1	1	0
16	7	6	5	5	4	4	4	4	4	4	4	4	4	4	3	3	3	2	2	1	0
18	8	7	6	5	5	5	5	4	4	4	4	4	4	4	4	3	3	3	2	2	1
20	9	7	6	6	5	5	5	5	5	5	5	5	5	4	4	4	4	3	3	2	1
22	10	8	7	6	6	6	6	5	5	5	5	5	5	5	4	4	4	4	3	2	1
24	11	9	8	7	7	6	6	6	6	6	6	6	5	5	5	5	4	4	3	2	2
26	11	10	8	8	7	7	7	6	6	6	6	6	6	6	5	5	4	4	3	2	2
28	12	10	9	8	8	7	7	7	7	7	7	7	6	6	6	6	5	5	4	3	2
30	13	11	10	9	8	8	8	7	7	7	7	7	7	6	6	6	5	4	3	2	2
35	15	13	11	10	9	9	9	9	9	8	8	8	8	8	7	7	6	5	4	3	2
40	18	15	13	12	11	10	10	10	10	10	10	9	9	9	8	8	7	6	5	4	3
45	20	16	14	13	12	12	11	11	11	11	11	11	10	10	10	9	8	7	6	5	4
50	22	18	16	14	14	13	13	12	12	12	12	12	12	11	11	10	10	9	8	7	6
55	24	20	18	16	15	14	14	14	13	13	13	13	13	12	12	11	11	10	9	8	7
60	26	22	19	17	16	16	15	15	15	14	14	14	14	14	13	12	12	11	10	8	7
65	29	24	21	19	18	17	16	16	16	16	15	15	15	15	14	14	13	12	10	9	8

Alk = 49

@ pH 7.1 & Alkalinity 49 mg/L DIC ≈ 13.72

# Interim pH with 5 mg/L of NaOH

The RTW Model

Ver. 4.0

ID: Blue Water Cove #1

STEP 1: Enter initial water characteristics.

Measured TDS	94	mg/L
Measured temperature	15	deg C
Measured pH	7.1	
Measured alk, as CaCO3	49	mg/L
Measured Ca, as CaCO3	33	mg/L
Measured Cl	2.7	mg/L
Measured SO4	9.5	mg/L

For CT and TTHM functions enter current:

Treated water pH	
Chlorine residual	mg/L
Chlorine or hypochlorite dose as chlorine equivalent	mg/L

STEP 2: Enter amount of each chemical to be added (expressed as 100% chemical). Press Ctrl+C to select chemicals for this list.

Carbon dioxide	0	mg/L
Caustic soda	5	mg/L
Chlorine gas	0	mg/L
Ferric chloride (anhydrous)	0	mg/L
Ferrous sulfate *7H2O	0	mg/L
Hydrochloric acid	0	mg/L
Hydrofluosilicic acid	0	mg/L
Lime (slaked)	0	mg/L
Soda ash	0	mg/L
Sodium hypochlorite	1	mg/L

STEP 3: Adjust at Step 2 until interim water characteristics meet your criteria.

Theoretical interim water characteristics			Desired	Theoretical interim water characteristics			Desired
Interim alkalinity	56	mg/L	> 40 mg/L	Interim pH	7.74		6.8-9.3
Interim Ca, as CaCO3	33	mg/L	> 40 mg/L	Precipitation potential	-5.12	mg/L	4-10 mg/L
Alk/(Cl+SO4)	4.6		> 5.0	Langelier index	-0.78		>0

Press PAGE DOWN for additional initial, interim and final water characteristics if desired.

Calculated initial water characteristics

Initial acidity	67	mg/L
Initial Ca sat, as CaCO3	1000	mg/L
Initial DIC, as CaCO3	116	mg/L

Theoretical interim water characteristics

Interim acidity	60	mg/L
Interim Ca sat, as CaCO3	201	mg/L
Ryznar index	9.31	
Interim DIC, as CaCO3	116	mg/L
Aggressiveness Index	11.01	

Theoretical final water characteristics after CaCO3 precipitation

Final alkalinity	N/A	mg/L
Final Ca	N/A	mg/L
Final acidity	N/A	mg/L
Final pH	N/A	
Final DIC, as CaCO3	N/A	mg/L

Press PAGE UP to review measured initial water characteristics, chemical addition quantities and additional interim water characteristics.

CT and TTHM Results

Required chlorine residual to maintain current level of giardia inactivation	N/A	mg/L
Estimated maximum total trihalomethane concentration change from current level	N/A	%

# Interim pH at 6 mg/L of NaOH

The RTW Model

Ver. 4.0

ID: Blue Water Cove #1

STEP 1: Enter initial water characteristics.

Measured TDS	94	mg/L
Measured temperature	15	deg C
Measured pH	7.1	
Measured alk, as CaCO3	49	mg/L
Measured Ca, as CaCO3	33	mg/L
Measured Cl	2.7	mg/L
Measured SO4	9.5	mg/L

For CT and TTHM functions enter current:

Treated water pH	
Chlorine residual	mg/L
Chlorine or hypochlorite dose as chlorine equivalent	mg/L

STEP 2: Enter amount of each chemical to be added (expressed as 100% chemical). Press Ctrl+C to select chemicals for this list.

Carbon dioxide	0	mg/L
Caustic soda	6	mg/L
Chlorine gas	0	mg/L
Ferric chloride (anhydrous)	0	mg/L
Ferrous sulfate *7H2O	0	mg/L
Hydrochloric acid	0	mg/L
Hydrofluosilicic acid	0	mg/L
Lime (slaked)	0	mg/L
Soda ash	0	mg/L
Sodium hypochlorite	1	mg/L

STEP 3: Adjust at Step 2 until interim water characteristics meet your criteria.

Theoretical interim water characteristics			Desired	Theoretical interim water characteristics			Desired
Interim alkalinity	57	mg/L	> 40 mg/L	Interim pH	8.02		6.8-9.3
Interim Ca, as CaCO3	33	mg/L	> 40 mg/L	Precipitation potential	-2.82	mg/L	4-10 mg/L
Alk/(Cl+SO4)	4.7		> 5.0	Langelier index	-0.49		>0

Press PAGE DOWN for additional initial, interim and final water characteristics if desired.

Calculated initial water characteristics

Initial acidity	67	mg/L
Initial Ca sat, as CaCO3	1000	mg/L
Initial DIC, as CaCO3	116	mg/L

Theoretical interim water characteristics

Interim acidity	59	mg/L
Interim Ca sat, as CaCO3	104	mg/L
Ryznar index	9.01	
Interim DIC, as CaCO3	116	mg/L
Aggressiveness Index	11.30	

Theoretical final water characteristics after CaCO3 precipitation

Final alkalinity	N/A	mg/L
Final Ca	N/A	mg/L
Final acidity	N/A	mg/L
Final pH	N/A	
Final DIC, as CaCO3	N/A	mg/L

Press PAGE UP to review measured initial water characteristics, chemical addition quantities and additional interim water characteristics.

CT and TTHM Results

Required chlorine residual to maintain current level of giardia inactivation	N/A	mg/L
Estimated maximum total trihalomethane concentration change from current level	N/A	%

# Interim pH at 7 mg/L NaOH

The RTW Model

Ver. 4.0

ID: Blue Water Cove #1

STEP 1: Enter initial water characteristics.

Measured TDS	94	mg/L
Measured temperature	15	deg C
Measured pH	7.1	
Measured alk, as CaCO3	49	mg/L
Measured Ca, as CaCO3	33	mg/L
Measured Cl	2.7	mg/L
Measured SO4	9.5	mg/L

For CT and TTHM functions enter current:

Treated water pH	
Chlorine residual	mg/L
Chlorine or hypochlorite dose as chlorine equivalent	mg/L

STEP 2: Enter amount of each chemical to be added (expressed as 100% chemical). Press Ctrl+C to select chemicals for this list.

Carbon dioxide	0	mg/L
Caustic soda	7	mg/L
Chlorine gas	0	mg/L
Ferric chloride (anhydrous)	0	mg/L
Ferrous sulfate *7H2O	0	mg/L
Hydrochloric acid	0	mg/L
Hydrofluosilicic acid	0	mg/L
Lime (slaked)	0	mg/L
Soda ash	0	mg/L
Sodium hypochlorite	1	mg/L

STEP 3: Adjust at Step 2 until interim water characteristics meet your criteria.

Theoretical interim water characteristics			Desired	Theoretical interim water characteristics			Desired
Interim alkalinity	58	mg/L	> 40 mg/L	Interim pH	8.42		6.8-9.3
Interim Ca, as CaCO3	33	mg/L	> 40 mg/L	Precipitation potential	-0.54	mg/L	4-10 mg/L
Alk/(Cl+SO4)	4.8		> 5.0	Langelier index	-0.08		>0

Press PAGE DOWN for additional initial, interim and final water characteristics if desired.

Calculated initial water characteristics

Initial acidity	67	mg/L
Initial Ca sat, as CaCO3	1000	mg/L
Initial DIC, as CaCO3	116	mg/L

Theoretical interim water characteristics

Interim acidity	58	mg/L
Interim Ca sat, as CaCO3	41	mg/L
Ryznar index	8.59	
Interim DIC, as CaCO3	116	mg/L
Aggressiveness Index	11.71	

Theoretical final water characteristics after CaCO3 precipitation

Final alkalinity	N/A	mg/L
Final Ca	N/A	mg/L
Final acidity	N/A	mg/L
Final pH	N/A	
Final DIC, as CaCO3	N/A	mg/L

Press PAGE UP to review measured initial water characteristics, chemical addition quantities and additional interim water characteristics.

CT and TTHM Results

Required chlorine residual to maintain current level of giardia inactivation	N/A	mg/L
Estimated maximum total trihalomethane concentration change from current level	N/A	%

# Interim pH at 8 mg/L NaOH

The RTW Model

Ver. 4.0

ID: Blue Water Cove #1

**STEP 1: Enter initial water characteristics.**

Measured TDS	94	mg/L
Measured temperature	15	deg C
Measured pH	7.1	
Measured alk, as CaCO3	49	mg/L
Measured Ca, as CaCO3	33	mg/L
Measured Cl	2.7	mg/L
Measured SO4	9.5	mg/L

For CT and TTHM functions enter current:

Treated water pH	
Chlorine residual	mg/L
Chlorine or hypochlorite dose as chlorine equivalent	mg/L

**STEP 2: Enter amount of each chemical to be added (expressed as 100% chemical). Press Ctrl+C to select chemicals for this list.**

Carbon dioxide	0	mg/L
Caustic soda	8	mg/L
Chlorine gas	0	mg/L
Ferric chloride (anhydrous)	0	mg/L
Ferrous sulfate *7H2O	0	mg/L
Hydrochloric acid	0	mg/L
Hydrofluosilicic acid	0	mg/L
Lime (slaked)	0	mg/L
Soda ash	0	mg/L
Sodium hypochlorite	1	mg/L

**STEP 3: Adjust at Step 2 until Interim water characteristics meet your criteria.**

Theoretical interim water characteristics			Desired	Theoretical interim water characteristics			Desired
Interim alkalinity	60	mg/L	> 40 mg/L	Interim pH	8.78		6.8-9.3
Interim Ca, as CaCO3	33	mg/L	> 40 mg/L	Precipitation potential	1.74	mg/L	4-10 mg/L
Alk/(Cl+SO4)	4.9		> 5.0	Langelier index	0.28		>0

Press PAGE DOWN for additional initial, interim and final water characteristics if desired.

**Calculated initial water characteristics**

Initial acidity	67	mg/L
Initial Ca sat, as CaCO3	1000	mg/L
Initial DIC, as CaCO3	116	mg/L

**Theoretical interim water characteristics**

Interim acidity	57	mg/L
Interim Ca sat, as CaCO3	18	mg/L
Ryznar index	8.21	
Interim DIC, as CaCO3	116	mg/L
Aggressiveness Index	12.07	

**Theoretical final water characteristics after CaCO3 precipitation**

Final alkalinity	58	mg/L
Final Ca	31	mg/L
Final acidity	57	mg/L
Final pH	8.55	
Final DIC, as CaCO3	115	mg/L

Press PAGE UP to review measured initial water characteristics, chemical addition quantities and additional interim water characteristics.

**CT and TTHM Results**

Required chlorine residual to maintain current level of giardia inactivation	N/A	mg/L
Estimated maximum total trihalomethane concentration change from current level.	N/A	%



INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 30-34-012 County: Forsyth

Name of Water System: BLUE WATER COVE

Sample Type:  Entry Point  Special/Non-compliance

Location Where Collected: Well: 1(IOC) - BLUE WATER COVE(96) - [REDACTED]

Facility ID No: P01

Location Code: E01

Collected By: PETER DEALING

Collection Date	Collection Time
08/09/18	11:25 am

Mail Results to:

Aqua NC - Kernersville (AQ007)

Attn: Debbie Dycus

1163 Sinclair Street

Denver, NC 28037

Phone #: (704) 489-9404

Fax #: (704) 489-9409

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		0.17 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		1.27 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.0145 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		8.43 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		9.2 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:	08/13/2018	12:07 pm
ANALYSES COMPLETED:	08/23/2018	10:08 am

Laboratory Log #: CB09124-01

Certified By: Bill Scott Bill Scott

COMMENTS: