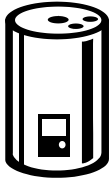


**WATER SUPPLY
Child Care Sanitation**



Children's Environmental Health

Inspection Form, cont.

____ Health Department _____
____ **Current Facility ID:** _____
____ Old Facility ID: _____

is approved

Water sample taken today? YES NO

Inspection Form

N.C. Department of Health and Human Services
Division of Public Health
Environmental Health Section

**Sanitation Standards Evaluation
Form for Child Care Centers**

Classification: Superior Approved Provisional I
Water Supply: Community Non-Transient Non-Community
 Transient Non-Community Non-Public Water Supply

Demerits: _____

Date of Insp/Chg _____

Status Code: _____

Water Supply .2815(a)

Shall meet 15A NCAC 18A .1700 Protection of
Water Supplies.

In addition *Any center using a groundwater
supply that serves 25 or more people shall
provide documentation from the Public Water
Supply Section that the well meets the
requirements of 15A NCAC 18C.*

A water sample shall be collected by the
Department and submitted to state certified
laboratory for bacteriological analysis annually *if
the child care center is not served by a
community water supply.*

Who is regulated under the .1700 Rules?

**Non-Community supplies serving an
establishment regulated under
15A NCAC 18A**

- **.2800 Child Care Centers**
- **.2400 Public, Private, and Religious
Schools**

Public Water Supplies

Community

15 connections or 25 or more users for at
least 60 days year round
RESIDENTS - LIVE THERE

Non-Community

not a community water system

Non-Transient

At least 25 of same persons more than 6 months
(Child Care Centers, Schools)

Transient

does not regularly serve at least 25 of the same
more than 6 months
(Gas Station, Restaurant)

Public Water Supply:

- <https://www.pwss.enr.state.nc.us/NCDWW/>

Drinking Water Watch

Public Water Supply Systems Search Parameters

Water System No.

You must insert "NC" in front of your water system ID#. Example: NC1234567

Water System Name

Company Name

Water System Status Code

Principal County Served

Water System Type

Primary Source Water Type

Point of Contact Type

Sample Search Parameters

Sample Class

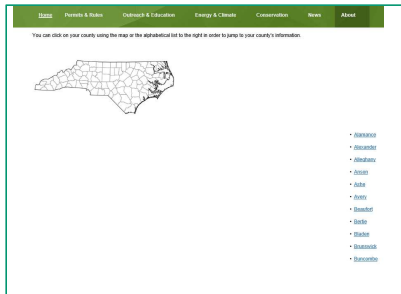
State Classification Code

Sample Collection Date Range
(The Search Functionality is limited to the last 3 years)
From To

[Click Here for the County Map of NC.](#)

Public Water Supply:

- <https://www.ncwater.org/?page=125>



Non-Transient, Non-Community Examples



Child Cares Served by Wells

- Need to know the population of children + staff + anyone else on system
- 24 or less = .1700 Rules, Non-Public
- 25 or over = NTNC = Public Water System
- Requires PWS approval PRIOR to starting
- Long history of problems
- **.1700 Rules Still Apply to BOTH**

Scenario #1: Child Care

- A child care has 18 children and 4 staff
- Falls below threshold to be a Public system
- .1700 rules apply

Scenario #2: Child Care

- A child care has 20 children and 5 staff
- .1700 rules apply
- Non-Transient/Non-Community (PWS)

**.1720(c)(5)
Check the Wellhead**

- An owner, licensee or permittee shall not place or have placed a new source of contamination within the minimum setbacks

Wellhead

- Well Head Completion (2C)
Well tags
Sample Tap/Hose Bib
Vent
Well Seal
12" above ground surface
Grout at land surface



Setbacks by Construction Date

Minimum Horizontal Distance From:	7/1/93 or after	prior to 7/1/93
• Septic tank or nitrification field	100'	50'*
• Other subsurface ground absorption waste disposal	100'	50'*
• Industrial/municipal sludge spreading or wastewater irrigation site	100'	100'
• Water tight sewage or liquid-waste collection or transfer facility	50'	25'
• Other sewage or liquid-waste collection or transfer facility	100'	100'
• Animal feedlot or manure pile	100'	100'
• Fertilizer, pesticide, herbicide or other chemical storage area	100'	100'
• Non-hazardous waste storage, treatment or disposal lagoon	100'	100'
• Sanitary landfill	500'	500'
• Other non-hazardous solid waste landfill	100'	100'
• Animal barn	100'	100'
• Building foundation	50'	25'
• Surface water body	50'	50'
• Chemical or petroleum fuel UST	50/100'	50/100'
• Other source of groundwater contamination	100'	100'

*Well constructed prior to 7/1/93 serving an establishment regulated under 15A NCAC 18A in operation prior to 7/1/93 shall only be required to meet these 2 setbacks

.1725
Water Quality

- PRIOR to INITIAL USE
- Or after construction, maintenance, repairs, pump installation, or a positive coliform sample
- TWO CONSECUTIVE bacteriological samples
- TAKEN AT LEAST 48 HOURS APART
- Collected by the Department

1725 (a) Water Quality
Confirmed contamination

- - **Confirmation -**
- **Another positive sample result following the initial positive sample unless the last positive sample was preceded by two consecutive negative samples**

Imminent Hazard-vs- Unsafe Water
Supply

Deemed Imminent Hazard

Confirmation of the presence of fecal coliform bacteria

Determination by Environmental Epidemiology that the presence of chemical constituents meet the definition of an imminent hazard as defined in 130A-2(3)

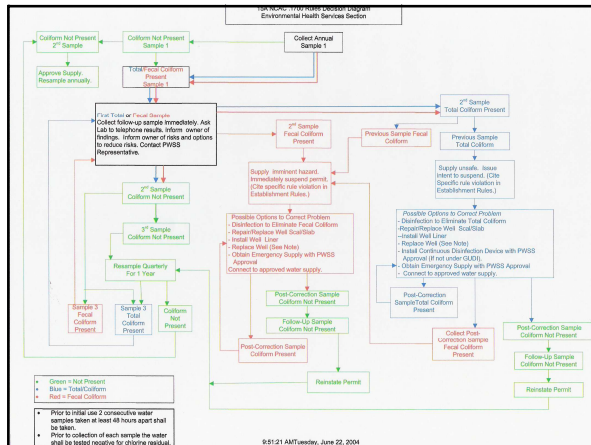
Deemed Unsafe Water Supply

Confirmation of the presence of total coliform

Determination by Environmental Epidemiology that chemical constituents are present at levels in violation of water quality standards but do not constitute an imminent hazard.

One positive sample requires:

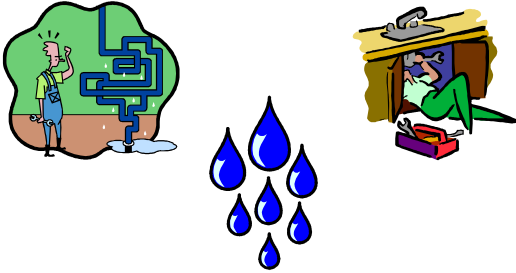
- 2 Consecutive negative samples be taken at least 48 hours apart
 - (no treatment between negative samples)
- Follow-up samples must be taken quarterly for 1 year while the supply is in use



Summary Disapproval for water supply

- .2834(d) Compliance, Inspections and Reports
- A summary classification of **disapproved** shall also be issued and forwarded to DCD(EE) when a water sample is confirmed positive for **fecal or total coliform** or other chemical constituent in accordance with 15A NCAC 18A.1725(a).

Protection of Water Supply



.2815(b) Water Supply

- Running water under pressure shall be provided in sufficient quantity to meet the needs of cooking, cleaning, drinking, toilets and outside uses *in accordance with the NC Plumbing Code.*

Protection of Water Supply

- **.2815 Water Supply (c)** No cross connections with an unapproved water supply shall exist.

Cross-Connection

An actual or potential connection between a potable water supply and any non-potable substance or source.(source of contamination)

Forces Acting on Cross Connections

Backflow

The undesirable reversal of flow of water or other substances into the potable water distribution supply.

Backpressure

Backsiphonage

Forces Acting on Cross Connections

• Backpressure

Pressure in down stream piping greater than supply pressure.



• Backsiphonage

Vacuum or pulling force in water supply piping created by negative pressure causing nonpotable source to be drawn or siphoned into potable water source.

Protection of Water Supply

- **.2815 Water Supply (c)** If the potential for back flow conditions exist, an approved atmospheric vacuum breaker or back flow prevention device shall be *installed in accordance with the North Carolina Plumbing Code*

- » Toilets
- » Kitchen sinks
- » Can wash/ mop sink
- » Dishwashers



Backflow Prevention Methods

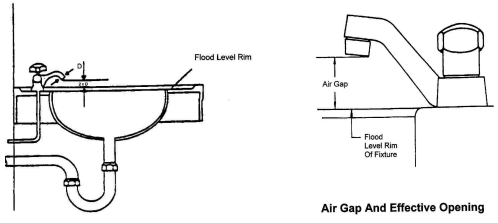
• **Physical**

- **Air Gap** (most desirable method of backflow prevention)

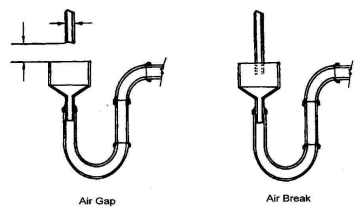
Air gap must be a minimum of one inch or twice the inside diameter of the supply pipe ("2xD or 1in")

- **Air Break** (references waste lines only)

Air Gap



Indirect Waste



Plumbing at Three Compartment Sink



Sewage back up potential

Air Break



Air Gap

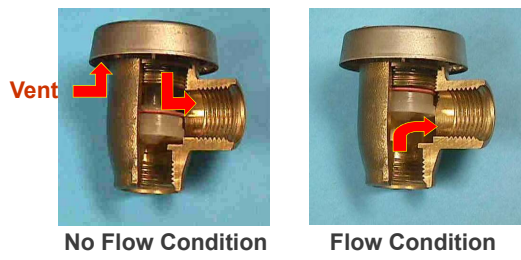


Backflow Prevention Methods

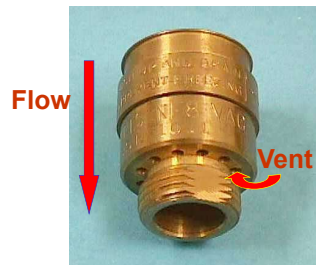
- **Mechanical**

- Consist of single to multiple check valves that open from the flow pressure of the potable water. Valves prevent any flow in the wrong direction.
 - Atmospheric Vacuum Breaker (AVC)
 - Hose Bibb Vacuum Breaker(HBVC)

Atmospheric Vacuum Breaker



Hose Bibb Vacuum Breaker





Atmospheric Vacuum Breaker



Atmospheric Vacuum Breaker on Dishwasher



**Water Heater Requirements
.2815(d)**

- Water heating equipment that is sufficient to meet the maximum expected requirements of the center shall be based on the following:
 - Number and size of sinks
 - Capacity of dishwashing machines
 - Capacity of laundry machines
 - Diaper changing facilities
 - Food service needs
 - Cleaning needs

* For CCC fewer than 13 and located in a residence existing water heater or equivalent replacement is adequate (must meet temperature requirements)

.2815(d) cont.

hot & cold water under pressure shall be provided in all rooms where:

- food is prepared
- Utensils or equipment are washed
- Areas where water is required for cleaning & sanitizing
- Diaper changing areas

**Hot Water Requirements
.2815(e)**

- For cleaning & sanitizing food utensils & laundry **min 120°F (item 15, 6 point provisional item-kitchen)**

*water in areas accessible to children

80 °-110°F (item 16, 4 point item)

*burn hazard (accessible to children)

excess of **120°F (item 17, 6 point provisional item)**

-Handwash lavatories used exclusively by school aged children the minimum 80°F does not apply

-Child care centers serving only school age children are not required to provide hot water

-In the event of the loss of hot water contact HD immediately

Hot Water at Can/Mop Wash .2830(b)

- Can/mop wash facilities
 - shall include a faucet with a threaded nozzle
 - Water of at least 80°F
 - In either a designated utility sink or above a curbed impervious pad sloped to drain into wastewater
 - Can cleaning facilities approved prior to July 1, 1991 shall be approved if in good repair.
 - <13 in a residence exempt

Water Supply

Drinking fountains .2815(f):

- comply with the North Carolina Plumbing Code
- be separate from handwash lavatories
- be kept clean
- be regulated that individual's mouth does not come in contact with the nozzle and does not splash on the floor

Outdoor drinking fountains .2815(g)

- constructed to protect spout
- be kept clean

Springs

- If proposed source:
- Three step process
 - **Approval of the site** (investigation)
 - **Design & Construction** of a collection system
 - **Water sampling & data collection** extensive **6 months** (under most severe anticipated environmental conditions)
 - Costly\$\$ to ensure springs as safe source

Things To Consider As Part of Plan Review

- When converting an existing building to childcare:
- Plumbing (Plumbing Code)
- Structural integrity of building
- Check zoning requirements child care center may not be permittable in that area
- Water heater requirements/sink requirements
- Water requirements Public Water Supply/Well
- Sewage

Water Supply ~Plan Review~

- Public Supply –vs- Private Water Supply (well)
- Documentation from PWS for groundwater serving 25 or more
- Plumbing concerns for new & existing structures
- Temperature requirements and hot water accessibility
- Backflow/back siphonage prevention
- Anti-Scald devices-vs-tempering valves

~Plan Review~

Hot Water Heaters

<p><u>Factors to consider:</u></p> <ul style="list-style-type: none"> • # and size of sinks • Capacity of dishwashing machine • Capacity of laundry machine • Diaper changing facility • Food service needs • Is CC Center located in a residence 	<ul style="list-style-type: none"> • <u>Size, Recovery & Capacity</u> <u>Recommendations</u> <i>*Domestic water heater*</i> <i><u>Fewer than 13 up to 30</u></i> <i>*Min. 40 gallon storage 30-49</i> <i>*Min. 50 gallon storage 50-100</i> <i>*Min. 80 gallon storage over 100</i> <i>*Min. 120 gallon storage</i>
---	---

~Plan Review~
Hot Water Heaters

Water Heater Sizing Calculator			
Developed by the Plan Review Unit of the Environmental Health Services Section NC Division of Environmental Health			
Enter the quantity of each piece of equipment listed below. For other equipment enter the description and gallon per minute (GPM) value. Find dishmachine GPM on the "Dishmachine Specs" sheet below or on the manufacturer's spec sheet.			
Facility Name:			
Address:			
Equipment	Quantity		GPM Calculated
Hand Sink		5 GPM each	0
Utensil Wash Sink		2 GPM each	0
Prep Sink		1 GPM each	0
Mop Sink		1 GPM each	0
Can Wash		1 GPM each	0
Other equipment	Description	GPM value	
Other equipment			0
Other equipment			0
Other equipment			0
Dishmachine brand	Dishmachine Model	Dishmachine GPM	
Dishmachine brand			0
Pre-rinse Quantity		2 GPM each	0
Total Gallons per Minute (GPM) Needed:			0

~Plan Review~
**Tempering Valve-vs- Anti-scald device **

- A tempering valve is meant to be used as a "BTU conserver", while a true anti-scald valve is recognized as a "safety" valve. Manufacturers and installers must understand the difference between these two valves, especially as they relate to safety and legal ramifications.

~Plan Review~
**Tempering Valve-vs- Anti-scald device **

- Figure 1 illustrates a standard "tempering" valve that is meant to be used as a "hot water extender" and not as a "safety" device.
- The manufacturer, as indicated in Figure 2, has made sure to point out that these tempering valves are not to be used to provide anti-scald service.

Series 70A, L70A
Hot Water Extender Tempering Valves for Residential Installations
 For domestic hot water service. Mixes cold water and hot water. For automatic storage water heaters it increases draw capacity.
 Convenient adjusting dial for "finger-tip" temperature control. Heavy stainless steel design. Standard temperature range 120°F to 160°F. Max. temperature 210°F. Max. pressure 100 psi.
 No. L70A - Special model available for low temperature range 100°F to 120°F.

- Brass construction
- Thermal interchangeable in all sizes

No.	No.	Connection	Size	Height	Length	Weight
70A	L70A	Sweet	1/2"	23 1/4"	2"	5 lb.
70AT	L70AT	Threaded	1/2"	23 1/4"	2 1/4"	1 lb.
70A	L70A	Sweet	3/4"	41 1/4"	23 1/4"	1 lb.
70AT	L70AT	Threaded	3/4"	41 1/4"	23 1/4"	1 lb.

For Additional Information, send for ES-70A.

WARNING

WATTS HOT WATER EXTENDER TEMPERING VALVES CANNOT BE USED FOR TEMPERING WATER TEMPERATURE AT FIXTURES. SEVERE BODILY INJURY (i.e., SCALDING OR CHILLING) AND/OR DEATH MAY RESULT DEPENDING UPON SYSTEM WATER PRESSURE CHANGES AND/OR SUPPLY WATER TEMPERATURE CHANGES. A.S.S.E. STANDARD 1016 LISTED DEVICES SUCH AS WATTS MODELS L111 OR MMV SHOULD BE USED AT FIXTURES TO PREVENT POSSIBLE INJURY.
 The WATTS hot water tempering valves are designed to be installed at or near the boiler or hot water heater. They are not designed to compensate for system pressure and/or temperature fluctuations and should not be used where devices tested to A.S.S.E. standard 1016 are required. These WATTS valves should never be used to provide "anti-scald" or "anti-chill" service.

~Anti Scald Devices~
(Thermostatic Mixing Valves)

- **How do Thermostatic Mixing Valves work?**
TMV's blend hot water with cold water to produce water for direct ablutionary use. It incorporates a temperature sensitive element that reacts to water temperature entering the TMV. It reacts by controlling the travel of a shuttle, automatically adjusting the amount of hot and cold water entering the valve to deliver stable temperature warm water.

~Anti Scald Temperature Valves~



~Plan Review~

- Do plumbing fixtures and connections meet NC Plumbing Code?
- Approved backflow prevention device protect all water lines subject to backflow, back pressure or back siphonage?
- Water heater isolated from classrooms?
- Hot water heater sized to provide hot water in sufficient quantity based on need?
- Consideration of separate water heaters for kitchen and handwash needs vs anti-scald devices

Summary Disapproval for water supply

- .2834(d) Compliance, Inspections and Reports
- A summary classification of **disapproved** shall also be issued and forwarded to DCD when a water sample is confirmed positive for **fecal or total coliform** or other chemical constituent in accordance with 15A NCAC 18A.1725(a).

Water Supply Emergencies

Environmental Health
Emergency Preparedness and Recovery Guidance Manual
North Carolina

Revised 2018

- Types of Water Supply Emergencies
- Types of Notifications
- Recommended Use Restrictions for Child Care Centers
- <https://ehs.ncpublichealth.com/faf/food/fd/docs/EH-PreparednessManual-Final.pdf>

Types of Notices

Boil Water Advisory means there is reason to suspect an increased risk for the water system to be contaminated. Boil water advisories are generally given when testing confirms the presence of total coliform bacteria in the water supply or if a pressure loss or break in the water system increases the risk that water system could have been contaminated with bacteria. Center may remain open for operations, but may want to take precautions. May use bagged ice, bottled water, food cooked with bottled or boiled water.

Types of Notices (cont.)

Fecal Coliform Bacteria Notice issued due to water testing positive for e. coli or other contamination, establishment should not operate until water supply is safe. DCDEE should be notified. Beverages, ice and any other food made with contaminated water should be discarded.

Scenario #1

Receive call from PWS that town of Cary is under a boil water notice

You have 3 child care centers in town located on that system

You receive a call from DCDEE asking what guidance to give the center.

What do you do?

Scenario #2

Receive notice from PWS that a child care center located on a well has tested positive for total coliform.

What do you do?

What guidance do you offer for the center?

What, if anything, is issued?

Scenario #3

Receive notice that a child care center located on a well has tested positive for total coliform. Confirmation sampling tested positive for fecal.

What do you do?

What guidance do you offer for the center?

What, if anything, is issued?

Questions?

- Carissa Moore, REHS
Environmental Health Regional Specialist
Children's Environmental Health
Division of Public Health, NC DHHS

828-417-4629

Carissa.moore@dhhs.nc.gov
