



**NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SYSTEM ENGINEERING
TECHNICAL REVIEW FORM**

CHLORINATION

(N.J.A.C. 7:10-11.16)

Water Purveyor

PWSID#

Municipality

Type of Chlorination: Gas Hypochlorite Other: _____
 Tablet Chlorinator System On Site Hypochlorite Generation System
 Pre Chlorination§ Post Chlorination§

Make and Model of Feed System: _____ Capacity: _____

Control of Operation: _____ Design Chlorine Residual: _____

Chlorine Contact Time*: _____ minutes provided via _____

YES NO N/A

General Information

- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| 1. Is chlorination the last form of treatment? (N.J.A.C. 7:10-11.16(a)2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is the chlorine treatment system designed to provide sufficient disinfection of the water within the treatment plant with one treatment unit out of service? (N.J.A.C. 7:10-11.16(d)) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Is a comparator suitable for determining chlorine residual provided? (N.J.A.C. 7:10-11.16(h)) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Is a room heater provided? (N.J.A.C. 7:10-11.16(f)) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is ammonia treatment separate from the chlorination system so that the gases do not mix? (N.J.A.C. 7:10-11.16(b)3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Chlorine Contact Time

- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| 1. Are the chlorination facilities designed to produce the following minimum chlorine residuals based on the pH level: (N.J.A.C. 7:10-11.16(e)3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|

pH level	Available Chlorine Residual (ppm)	
	Free	Combined
Up to 7.0	0.2	1.0
7.0 to 8.0	0.3	1.5
Over 8.0	0.4	2.0

* See supporting calculations on page _____ of Engineer's Report

§ **SUBMIT ONE FORM FOR EACH PROCESS**

- | | YES | NO | N/A |
|--|--------------------------|--------------------------|--------------------------|
| 2. For chlorination facilities which treat ground water sources, is a minimum chlorine contact time of 5 minutes provided (after post chlorination) to produce the above required free chlorine residual or 30 minutes to produce the above required combined chlorine residual? (N.J.A.C. 7:10-11.16(e)i) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. For chlorination facilities which treat surface water or ground water under the direct influence of surface water, is a minimum chlorine contact time of 30 minutes provided to produce the above required free chlorine residual? (N.J.A.C. 7:10-11.16(e)ii) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Gas Chlorinators

- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| Is the chlorination system of the solution feed type? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is the chlorination system located in an above-grade separate room with an outside entrance only? (N.J.A.C. 7:10-11.16(f)1) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Is the chlorine room equipped with proper ventilation including an exhaust fan located near floor level with an outside switch? (N.J.A.C. 7:10-11.16(f)1) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Is the chlorine room equipped with an outward opening door with panic hardware (i.e. pushbar on the inside of the door)? (N.J.A.C. 7:10-11.16(f)1) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is an automatic chlorine leak alarm or an observation window to facilitate visual inspection of the chlorine room without opening the door of the chlorine room provided? (N.J.A.C. 7:10-11.16(f)2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Is an ammonia solution available for testing chlorine leaks? (N.J.A.C. 7:10-11.16(h)2) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Are a minimum of 2 chlorine cylinders interconnected by a manifold and valved to permit rapid changeover provided? (N.J.A.C. 7:10-11.16(f)3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. For those facilities which do not have 24 hour supervision, is an automatic switchover valve provided? (N.J.A.C. 7:10-11.16(f)3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Are scales provided for determining the weight loss in each chlorine cylinder? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Is the water supplied to the chlorinator protected against backsiphonage? (N.J.A.C. 7:10-11.16(f)5) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Is the rotameter properly sized to prevent abnormally high chlorine application? (N.J.A.C. 7:10-11.16(f)6)
Rotameter capacity: _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Is a gas mask stored in a readily accessible location provided? (N.J.A.C. 7:10-11.16(f)8) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

YES NO N/A

13. Is an automatic chlorinator with chlorine residual recorders and an alarm system to indicate chlorine failure provided for surface water systems and systems which do not meet State microbiological standards? (N.J.A.C. 7:10-11.16(f)7)

Hypochlorinators

1. Has a Technical Review Form for Chemical Handling and Feeding been prepared for the chlorine feed?

2. Is a positive displacement type pump used?

Chlorine Dioxide Generators

1. Is post chlorination via gas chlorine or sodium hypochlorite provided?

2. If chlorine dioxide is used, is sodium chlorite injected into the discharge line of the solution feed chlorinator with the formation of chlorine dioxide in a reaction chamber?

3. Does the maximum chlorine dioxide feed rate exceed 1.5 mg/l? (N.J.A.C. 7:10-11.16(j)1)
 Maximum feed rate: _____

4. Is each chlorine dioxide generator at least 95% efficient in producing chlorine dioxide? (N.J.A.C. 7:10-11.16(j)2)

5. Is a comparator suitable for determining chlorine residual by the D.P.D. Method in accordance with Part 4500-C102D of Standard Methods for the Examination of Water and Wastewater and supplies of the necessary reagents provided for measuring chlorine residuals? (N.J.A.C. 7:10-11.16(j)3)

On-Site Sodium Hypochlorite Generators

1. Is a water softener used prior to the water flowing to the salt tank?

2. Is a back up generator provided?

3. Is a tank provided to hold a bulk solution in case the generators are out of service?

YES NO N/A

Tablet Chlorinators

1. Are anti siphon valves part of the chlorination system? YES NO N/A


2. Does the chlorinated water flow to a day tank? YES NO N/A

3. What is the capacity of the tablet recharger?

_____ Pounds of tablets providing _____ days of use

Submit appropriate engineering plans, specifications, reports, etc. to substantiate your answers

I hereby certify that answers provided herein are accurate and reflective of the project being considered for approval.



Signature of Engineer Date
Professional Engineer's Embossed Seal

N.J.P.E. #

Type or Print Name of Engineering Firm
PA16 (09/13)

