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PROLOGUE

This manual has been produced by the Department of Environmental Protection (Department) to make the permit process less complicated and time-consuming for you. This manual is one of a series of technical manuals produced by Department under the requirements of the Environmental Management Accountability Plan (P.L. 1991, Chapter 422) with the goal of making the permit application process more consistent and predictable. In each technical manual, you will find summaries and explanations of policies that may not be fully described or explained in environmental laws or regulations. In addition, the manuals contain guidance on how the Department defines other standards, such as “state-of-the-art” control technologies or “best management practices”.

Unless otherwise required by federal or state law, the policies and procedures contained in a technical manual on the date an application is filed will be binding on both the Department and the applicant. The technical manuals may be updated every six months or whenever a regulatory change requires revisions. Any revision made to a technical manual will have no effect upon a permit application that was submitted to the Department prior to adoption of the revision. This is a technical manual prepared pursuant to N.J.S.A. 13:1D-111 to 1D-113. Because it by necessity condenses and summarizes statutes, regulations, and other documents, it may not always precisely reflect all the requirements set forth in same. In the case of any inconsistency between this technical manual and any statutes, regulations, or policy determinations based upon same, the requirements of the statutes, regulations, or policy determinations shall prevail. Accordingly, this technical manual should not be used as a substitute for a thorough analysis of the law and the facts as they apply to any specific project or proposal. The State of New Jersey, including its Department of Environmental Protection and all agents and employees thereof, hereby disclaims any warranties (express or implied) and any legal liability for the accuracy, completeness, or usefulness of any of the information set forth in this technical manual.

In addition to the information contained in the manual, the Department endorses the environmental management hierarchy which establishes an order of preference, placing multi-media pollution prevention first, followed by recycling, reuse, treatment and finally, disposal options. Therefore, pollution prevention is the first and preferred practice in environmental management as defined in the 1991 New Jersey Pollution Prevention Act (N.J.S.A. 13:1d-35 et seq.). Pollution prevention practices reduce the demand for and the generation of hazardous substances prior to treatment, control,

storage, or recycling. This reduction is typically attained through process modifications, product reformulations, improved operation and maintenance, raw material substitution and in-process recycling.

The Department considers the term “state-of-the-art” to include a process whereby the applicant considers the environmental management hierarchy in an effort to encourage pollution prevention. The Department believes that the applicant has primary control over consideration and implementation of pollution prevention options while the Department retains control over allowable release limits based on treatment and control requirements. This division of responsibility is designed to encourage the applicant to implement pollution prevention measures before exploring treatment and control options under Department review.

Only after pollution prevention options are determined to be infeasible should control options be considered. Therefore, it is the Department’s policy that “state-of-the-art” reflects a demonstration of the applicant’s having sequentially considered the environmental management hierarchy.

The Department welcomes suggestions for improving its technical manuals. Please direct your comments to Jeanne Mroczko, Director, Office of Pollution Prevention and Permit Coordination, NJDEP, P.O. Box 423, Trenton, NJ, 08625.

You may request additional copies of this manual by sending a check or money order, made payable to the Treasurer, State of New Jersey for $7.00 (this includes first class mailing by the U.S. Postal Service) to:

NJDEP Maps & Publications Sales
General Services
P.O. Box 438
Trenton, NJ 08625

Also, for information about other technical manuals offered by the Department, contact NJDEP Maps and Publications Sales at (609) 777-1038.

As stated previously, these manuals may be updated every six months or whenever a regulatory change requires it. Therefore, if the publication date of the manual is more than six months old or if you are aware of a regulatory change, you should contact NJDEP Maps and Publications Sales for a copy of the appropriate revision.

Notice: This manual contains forms and applications that are provided as a convenience to the applicant. These forms are included for illustrative purposes only, are not subject to the limitation of N.J.S.A. 13:1D-112 (b), and may be updated as often as necessary. Prior to submitting any forms to the Department, an applicant should contact the appropriate bureau or make certain that he or she is using the most up-to-date version.

I. INTRODUCTION

This is a technical manual prepared pursuant to N.J.S.A. 13:1D-111 to 1D-113. Because it by necessity condenses and summarizes statutes, regulations, and other documents, it may not always precisely reflect all the requirements set forth in same. In the case of any inconsistency between this technical manual and any statutes, regulations, guidance documents, or policy determinations based upon statutes, regulations or guidance documents, the requirements of the statutes, regulations, guidance documents, or policy determinations shall prevail. Accordingly, this technical manual should not be used as a substitute for a thorough analysis of the law and the facts as they apply to any specific project or proposal. The State of New Jersey, including its Department of Environmental Protection and all agents and employees thereof, hereby disclaims any warranties (expressed or implied) and any legal liability for the accuracy, completeness, or usefulness of any of the information set forth in this technical manual.

This technical manual has been prepared as guidance to water purveyors and consulting engineers who need to ascertain whether a permit application is necessary for construction of water works facilities. More importantly, it serves to provide guidance to the consulting engineer as to what is required of an applicant for the permit application. It highlights areas of most frequent deficiencies, and it accentuates areas of critical concerns in each of the permit categories.

Subject matter covered herein refers only to provisions of N.J.A.C. 7:10-11 (Standards for the Construction of New Public Community Water Systems) as adopted on November 18, 1996 and N.J.A.C. 7:19-6.7 (Water Supply Management Act Rules - System Pressure and Storage). Occasionally reference is made to other programs within the New Jersey Department of Environmental Protection (Department) where permits may be required. Applicants and consulting engineers are encouraged to contact those programs' staff directly for guidance.

Questions pertaining to this technical manual and applicable regulations should be directed to the Compliance and Permit Section of the Bureau of Safe Drinking Water (Bureau) at 1-609-292-5550. Office hours are from 8:00 am to 4:30 pm Monday through Friday.

II. GENERAL SYSTEM REQUIREMENTS

The following are the general requirements for public community water systems (PCWS). A PCWS is a system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

A. Ownership/Control

All PCWS must have a responsible entity to operate and maintain the system. The Bureau recommends that upon completion of a water system, developers seek takeover by the municipality or an investor-owned water utility in good standings with the Board of Public Utilities and the Department. If a new water purveyor is to be established, approval from the municipality or municipal utility authority is required, as is approval from the Board of Public Utilities, where appropriate. The Bureau strongly discourages formation of a homeowners association to own and operate a water system as such entities generally lack the expertise and resources to effectively operate a water system. Also, all new PCWS must meet the Department's criteria for system capacity which addresses a system's managerial, technical, and financial abilities, once such criteria have been developed.

B. Source Capacity

All PCWS must have adequate firm capacity to meet its peak daily demand. Firm capacity is defined as the pumping and/or treatment capacity when the largest pumping or treatment unit is out of service; for most water systems this entails assuming the largest well is out of service. For existing PCWS, the peak daily demand is defined as the average daily demand as recorded in the peak month of the prior 5 years. For new PCWS, the peak daily demand is estimated using the demand figures described in Section VII.

C. Treatment

All PCWS must provide treatment so that the water meets all New Jersey State Primary and Secondary Drinking Water Standards (see Appendix C). At a minimum, disinfection must be provided. The Bureau may issue waivers to ground water systems which serve 100 or fewer dwellings or properties provided the water is of exceptionally good microbiological quality, no other treatment is required, and the system increases its microbiological sampling requirements. Please note that the Bureau requires that

disinfection be provided if any other treatment is present regardless of the number of dwellings or properties served. However, the Bureau will waive this requirement if the only treatment is calcite filtration and/or ion exchange.

D. Storage Capacity

All PCWS must provide storage to allow for proper service and to meet the requirements of the Water Supply Management Act Rules as described at N.J.A.C. 7:19-6.7. Storage facilities should be located strategically throughout the distribution system to offset peak loads. The total storage capacity required for a PCWS is based on the number of sources provided (including interconnections with other public community water systems) and the availability of auxiliary power at those sources.

E. Distribution System

All PCWS distribution systems must be designed to maintain a minimum pressure of 20 psi at street level at all locations in the system under all flow conditions. The water mains must be located so as to prevent freezing and be adequately separated and protected from sanitary sewer lines. Valving must be provided and water mains should be looped if possible to minimize customer inconvenience during repairs.

F. Auxiliary Power

Auxiliary power must be provided at those facilities which are primary components of a PCWS system or are indispensable to operation of the water system (e.g. pump stations used to maintain pressure in the distribution system).

G. Building Design

The ground floor of all buildings must be located above the 100-year flood plain and a minimum of 6 inches above the surrounding grade. Adequate drainage without the possibility of backflow must be provided for all areas not intended to hold water (e.g. floors, meter pits, valve vaults, piping galleries, etc.). Special attention should be given to drainage for well houses with respect to the requirements prohibiting certain sources of pollution near a well (see Section VII).

H. Licensed Operator

As per N.J.A.C. 7:10A, any PCWS which has a population greater than 1,500 people or has more than 100 service connections must employ a New Jersey licensed water distribution operator with the appropriate “W” class license and any PCWS that has treatment must employ a New Jersey licensed water treatment operator with the appropriate “T” class license.

III. PERMIT CATEGORIES

All permits required under N.J.A.C. 7:10-11 are divided into five categories:

A. New Public Community Water System
B. New Ground Water Source (Well)
C. New Surface Water Source
D. Distribution Modification
E. Treatment Modification

A. New Public Community Water System

This category includes construction of a brand new satellite (stand alone) water system. A new PCWS almost always includes new sources, treatment facilities, storage facilities, and distribution system.

B. New Ground Water Source

This category includes construction of a new well or a replacement well. It also includes redrilling, deepening and/or increasing the capacity of an existing well. It does not include repairs to nor rehabilitation of existing wells.

C. New Surface Water Source

This category includes any new raw water intake from any surface water source. It does not include reconstruction or repairs of existing intakes.

D. Distribution Modification

This category includes pump stations, storage facilities, and water main construction as described below:

Pump Stations

This category includes the construction of a new pump station or the modification of an existing pump station. It includes installing additional pumps, changing the type of pumps, or increasing the capacity of the pumps. It does not include replacement of pumping units of like size, changes in the type of

pump without changes in capacity, or changes in the control system or instrumentation.

Water Main Construction

This category includes any water main construction (extension or replacement) which meets **ANY** of the following criteria:

1. Consists of more than 15 new service connections; OR

2. Consists of more than 15 new dwelling units (e.g. an apartment complex using a single service connection); OR

3. Consists of 1,500 or more feet of water main NOT located directly on a new site being developed (e.g. water main necessary to connect the proposed development to the existing water system); OR

4. Consists of 1,500 of more feet of replacement water main, reinforcing water main, transmission water main, water main to loop deadends, etc.; OR

5. Will generate a non-residential demand greater than 6,000 GPD as per N.J.A.C. 7:10-12.6(b); OR

6. Includes an interconnection with another public community water system (regardless of length of water main).

Please note that the above is a clarification of the regulations concerning water main construction and have been adopted as an official Bureau policy.

The estimated cost of construction is no longer a factor in determining the need for approval from the Bureau for water main construction (previously, water main extensions with an estimated cost under $150,000 were not subject to approval from the Bureau). Water main construction that were not subject to our review prior to November 18, 1996 which had all local, county, and state approvals as of that date are not subject to the new requirements.

Approval from the Bureau is not required for the installation of individual hydrants, valves, air relief valves, etc., nor for cleaning and lining of existing water mains.

Storage Facilities

This category includes the construction of new storage facilities or major alteration of existing storage facilities. A permit is not required for the maintenance of storage facilities (e.g. cleaning, repainting, etc.).

E. Treatment Modifications

This category includes construction of any new treatment or modification of any existing treatment (e.g. addition of caustic soda, construction of a packed tower, increasing the capacity of an existing sodium hypochlorite feed to treat an additional well, etc.). This includes changing the type of chemical used (e.g. changing from gas chlorine to sodium hypochlorite, changing from a polyphosphate corrosion inhibitor to an orthophosphate corrosion inhibitor). This does not include switching of generic products of similar chemical composition (e.g. switching from one polyphosphate to another polyphosphate) provided the new chemical meets ANSI/NSF Standard 60, nor does it replacing filter media or tower packing material provided there are no changes in depth or type of media or packing.

IV. TYPES OF CONSTRUCTION PERMITS

The Bureau approves the following types of construction permits:

A. Permit to Construct and Operate
B. Construction Only Permit
C. Master Permit for Water Main Construction
D. Simplified Water Main Extension Permits

A. Permit to Construct and Operate

This is the typical permit issued by the Bureau and allows the permittee to construct and operate potable water works facilities. This type of permit is issued for new sources, treatment facilities, pump stations, storage facilities, and water main construction. The permittee has 3 years from the date of approval to construct the facilities or the permit is rendered invalid.

B. Construction Only Permit

This permit only allows the permittee to construct the proposed water works facilities and is generally issued for new PCWS and new sources. The Bureau issues a Construction Only Permit once the proposed location and method of construction have been deemed to meet the applicable regulations. The permittee will then have 3 years from the date of approval to construct the facilities. Once the facilities have been constructed, the permittee then submits a written request to the Bureau to modify the Construction Only Permit to allow for operation of the facilities. The Bureau will then sample the new source(s) and inspect the facilities. If the results of the sampling and inspection are acceptable, the Bureau will then issue a Permit to Construct and Operate which will supersede the previously issued Construction Only Permit.

C. Master Permit for Water Main Construction

PCWS may apply for a Master Permit which will cover all proposed water main construction (up to a set number of service connections) which is to be performed over the next 3 years. The Bureau will review all proposed construction at one time and then issue the Master Permit allowing the permittee to proceed with the water main construction at their leisure. The water purveyor must submit annual updates and pay an annual renewal fee in order for the Master Permit to remain valid. A further description of the Master

Permit for Water Main Construction is provided in Section VII.

D. Simplified Water Main Extension Permit

This permit is issued for water main construction projects which meet the requirements for submitting an application listed in Section III and also meet **ALL** of the following criteria:

1. Consists of less than 50 new service connections; AND

2. Does not consist of 1,500 or more feet of water main NOT located directly on the site being developed (e.g. water main necessary to connect the proposed development to the existing water system); AND

3 Does not consist of 1,500 or more feet of replacement water main, reinforcing water main, transmission water main, water main to loop deadends, etc.; AND

4. Does not include an interconnection with another public community water system.

All other water main construction which requires the Bureau's approval must apply for a Permit to Construct and Operate as described above.

The Simplified Water Main Extension Permit has advantages over a Permit to Construct and Operate in that less information is required to be submitted (see Section V), the review fee is less (see Section V), and the review time necessary by the Bureau is shorter.

V. MATERIALS TO BE SUBMITTED

All permit applications submitted to the Bureau, with the exception of applications for Simplified Water Main Extension Permits, must include the following information:

A. Application Form
B. Engineer's Report
C. Technical Specifications
D. Engineering Plans
E. Technical Review Forms
F. Permit Application Review Fee

Applications for Simplified Water Main Extension Permits must include the following information:

A. Application Form
B. Simplified Water Main Extension Certification Form
C. Overall plan(s) showing the location of the proposed water main extension in relation to the existing distribution system
D. Permit Application Review Fee

NOTE: The Bureau only requires ONE copy of each document that is submitted.

A. Application Form (N.J.A.C. 7:10-11.5(c))

A "Standard Application to Modify/Construct/Operate Public Water Works Facilities" (Form BSDW-APPLICATION, dated 11/96) must be completed and submitted (see Appendix A). With the exception of applications for Construction Only Permits, the applicant must be the water purveyor who will ultimately operate and maintain the water system. In the case of Construction Only Permits, the Bureau will issue a Construction Only Permit to an applicant other than the water purveyor (e.g. a developer); however, the Bureau will not issue a Permit to Construct and Operate to any entity other than a responsible, approved water purveyor as described in Section II.

B. Engineer's Report (N.J.A.C. 7:10-11.5(d))

The engineer's report should include a description of the proposed work, an overview of the existing system, and a description of how the two will be interrelated. The engineer's report, when pertinent, should also include information concerning source capacity, ability to meet demands, calculations justifying specified chemical feed pump capacities, anticipated chemical feed

rates and residuals, etc.

C. Technical Specifications (N.J.A.C. 7:10-11.5(e))

The technical specifications should include a description of the sanitary safeguards of the proposed system. Only those aspects related to the water system improvements must be included. The Bureau will allow PCWS to submit a set of Master Technical Specifications for water main construction which the Bureau will retain for use with any permit application for water main construction submitted by the PCWS.

D. Engineering Plans (N.J.A.C. 7:10-11.5(f))

The plans should include construction drawings in sufficient detail to allow for examination of the proposed system. Only drawings dealing with the overall site plan and the sanitary aspects of the project need be submitted. All plans must bear the seal and signature of a New Jersey licensed Professional Engineer.

E. Technical Review Forms

All applications should include the Checklist for Administrative Completeness, General Conditions, and the applicable technical review forms for the type of work proposed (see Appendix B). Please note that supporting documentation for the answers indicated on the submitted technical review forms must be provided in the engineer’s report, technical specifications, and/or engineering plans described above. The exception to this is for the Simplified Water Main Extension Certification Form which does not require supporting documentation. Also, please note that these forms are not subject to N.J.S.A. 13:1D-112(b).

F. Permit Application Review Fee (N.J.A.C. 7:10-15)

The permit application review fee for all projects except water main construction is based on the estimated construction cost (it does not include land acquisition, engineering, and legal fees). Therefore, all permit applications must include a cost estimate break-down. The fee for water main construction projects is based on the length of water main and the number of new service connections. The minimum review fee is $100 and the maximum review fee is $12,000.

The basic fee structure for projects other than water main construction is as follows:

0.009 x construction cost for the first $250,000
0.006 x construction cost from $250,001 to $1,000,000
0.003 x construction cost over $1,000,000

Applications for new sources of water supply (excluding interconnections or bulk purchase sources) should include an additional $1000 per source to cover sampling expenses.

Fees for water main construction are based on length of water main and the number of new service connections. The fee is the greater of the amounts calculated based on the following:

Number of New Service Connections	Length of Water Main (feet)	Review Fee
50 - 100	1,500 - 3,000	$1,000
101 - 250	3,001 - 7,500	$2,500
251 - 500	7,501 - 15,000	$4,000
More than 500	More than 15,000	$5,000

The fee for a Master Permit for Water Main Construction and for the renewal of these permits is determined based on system population as follows:

25 - 999 people	$ 500
1,000 - 9,999 people	$ 1,000
10,000 - 49,999 people	$ 2,500
50,000 or more people	$ 5,000

Applications submitted for a Simplified Water Main Extension Permit require a $250 review fee.

Applications submitted only because the project includes an interconnection with another public community water system (e.g. includes 15 or fewer new service connections AND is less than 1,500 feet of water main) require a $250 review fee.

The fee for applications which include water main construction and other components (e.g. treatment facilities, pump stations, tanks, etc.) should be based on the estimated construction cost of the non-water main portion plus the appropriate fee for the water main portion as described above.

VI. REVIEW PROCEDURE

The permit application review process involves four steps: Administrative Review, Technical Review, Project Manager's Recommendation, and Final Permit Determination.

The applicant has the right to withdraw the application at any time by submitting a written request to the Bureau. However, the permit application review fee will not be refunded once any technical review has been performed.

A. Administrative Review

All permit applications are reviewed to ascertain that all information required in Section V is included in the application. The Bureau will acknowledge receipt of the application in writing and advise the applicant of any deficiencies. The applicant will also be given the name of the project manager who will perform the technical review. Failure by the Bureau to complete the administrative review within 30 days will result in the application being deemed administratively complete.

B. Technical Review

Within 60 days of the application being deemed administratively complete, the project manager will make an initial technical review of the application. If the application is technically complete and requires no clarification, the project manager will process the permit and submit the application to the Section Chief with a recommendation of approval (see below). If the project manager requires further information in order to continue review of the application, the project manager will issue a letter to the design engineer requesting the additional information. Failure to submit the requested information in a timely manner may result in the project manager recommending denial of the application.

Under N.J.A.C. 7:10-11.4(d), the Bureau has the right to terminate review of and return any permit application which has remained technically deficient for 3 years after the date of the submittal. Once again, however, the permit application review fee will not be refunded once any technical review has been performed.

C. Project Manager’s Recommendation

Once the permit application is deemed to be technically complete, the project manager will make a recommendation to the Section Chief. The recommendation will either be for approval or denial of the application based on the submitted information. The project manager may include Specific Conditions with his or her recommendation which require the permittee to perform additional sampling, provide additional equipment, etc.

D. Final Permit Determination

Upon receiving the project manager’s recommendation, the Section Chief will review the recommendation and either agree with the recommendation (at which time the application is either approved or denied) or return the application to the project manager requesting clarification or additional information.

The applicant has the right to appeal the denial of a permit application or any Specific Condition(s) included in an approved permit as described at N.J.A.C. 7:10-11.17.

VII. STANDARD REQUIREMENTS FOR CONSTRUCTION

A. Deviation from Standards (N.J.A.C. 7:10-11.3)

The Bureau will consider granting a deviation from standards provided the applicant can demonstrate that adequate protection of the water will be provided. This entails showing that the water is naturally protected, performing pilot testing, or using an analogous system.

B. Wells (N.J.A.C. 7:10-11.7)

The major areas of concern for new wells are location, method of construction, and water quantity and quality.

Location

The Bureau requires that the water purveyor own all land within 50 feet of a PCWS well. Easements are acceptable provided they include language which explicitly grants the water purveyor total control of all land use within 50 feet of the well. Major and minor pollutant sources (defined at N.J.A.C. 7:10-11.4) and non-water related activities are prohibited within this 50 foot radius.

Additional pollutant sources that are prohibited near a well are defined at N.J.A.C. 7:10-11.7(b) 2. Special attention should be given to these requirements with consideration for well house floor drains and blowoffs. The Bureau will grant a deviation from the minimum distance requirements if the applicant can show that the well will be adequately protected from contamination. Furthermore, the Bureau will allow a stone pit for drainage of a well house provided the only drainage into the pit comes from the well house floor drains. Otherwise, floor drains and blowoffs should discharge via an air gap to another location (e.g. a splash pad, a remote detention basin, etc.).

The Bureau also requires that the applicant identify all major and minor pollutant sources in the area surrounding the well. The requirements differ depending upon whether the well is constructed to withdraw water from a confined aquifer or an unconfined aquifer.

For wells constructed to withdraw water from a confined aquifer, the applicant should identify and evaluate the impact of all major and minor pollutant sources within 500 feet of the well.

For wells constructed to withdraw water from an unconfined aquifer, the areas of concern are defined in terms of the zone of contribution (ZOC) for a certain time of travel (TOT) and also in distances. The ZOC are determined once a well head protection area (WHPA) delineation has been performed. If the applicant has not had a WHPA delineation performed, the distances given should be used. If the applicant has had a WHPA delineation performed, the various ZOC should be used although some minimum and maximum distances are given. Please note that the Department will perform a WHPA delineation for all PCWS wells constructed to withdraw water from an unconfined aquifer, usually as part of the permit application review process; however, the Bureau will usually issue a Permit to Construct and Operate for a new well prior to completion of the WHPA delineation.

With regards to the pollutant sources an applicant must identify for a well constructed to withdraw water from an unconfined aquifer:

a. If a WHPA delineation has not been performed, the applicant should identify and evaluate the impact of all major pollutant sources within 10,000 feet of the well and all minor pollutant sources within 500 feet of the well. A treatment barrier must be provided for all major pollutant sources within 500 feet of the well. Furthermore, the applicant must either provide a treatment barrier or establish a sampling program to detect the presence of contamination for all major pollutant sources located in the area between 500 feet and 10,000 feet from the well.

b. If a WHPA delineation has been performed, the applicant should identify and evaluate the impact of all major pollutant sources within the ZOC for the well’s 12 year TOT (not to exceed 10,000 feet) and all minor pollutant sources within the ZOC for the well’s 200 day TOT (minimum 500 feet). A treatment barrier must be provided for all major pollutant sources within the ZOC for the well’s 200 day TOT (minimum 500 feet). Furthermore, the applicant must either provide a treatment barrier or establish a sampling program to detect the presence of contamination for all major pollutant sources located in the area between the ZOC for the well’s 200 day TOT (minimum 500 feet) and the ZOC for the well’s 5 year TOT (not to exceed 10,000 feet).

In addition, all applicants must determine if a proposed PCWS well (whether the well is constructed to withdraw water from a confined aquifer or an unconfined aquifer) is vulnerable to being ground water under the direct influence of surface water as described at

N.J.A.C. 7:10-9.3. The Bureau will require that any source which is determined to be vulnerable to surface water influence be monitored as required by N.J.A.C. 7:10-9.4.

Construction

Well design should conform to the American Water Works Association standards. In general, all wells are required to have a minimum of 50 feet of casing and wells drilled in rock formations must extend a minimum of 20 feet into competent bedrock. All annular spaces must be grouted the entire length. Wells drilled in areas which are subject to salt water intrusion must be double cased with the area between the casings grouted in order to protect any non-brackish aquifers.

Well heads must be designed to ensure the well is protected from contamination. The casing pipe and protective curbing of a PCWS well must extend a minimum of 12 inches above the pump house floor or surrounding grade. Although the well head may be located outside, the wellhead appurtenances and treatment must be located within a protected, above ground building; the use of a well pit is prohibited.

All wells must be equipped with the necessary appurtenances (e.g. water level indicator, means for direct measurement of water level, pressure gauge, shut-off valve, check valve, protected blow-off, well vent, etc.).

Quantity

The Bureau requires that all proposed wells be pump tested in order to ensure adequate quantity of water. Pump test requirements are described at N.J.A.C. 7:10-11.7(k).

Pump tests can be performed at either 100% or 120% of the design pump capacity as described below. Pump tests must continue for the minimum times given below and until a stabilized rate of drawdown (0.2 feet\hour or less) has been achieved for a minimum of 6 hours. Records of flow rate and water level must be made hourly.

If a well is tested at 120% of the design pump capacity, the minimum duration of the pump test is 24 hours in an unconsolidated formation and 72 hours in a consolidated formation.

If a well is tested at 100% of the design pump capacity, the minimum duration is 72 hours regardless of the type of formation.

The stabilized rate of drawdown should then be used to determine if the well would run dry after 30 days of continuous pumping.

Also, applicants should be aware of the potential need for approval from the Bureau of Water Allocation. The applicant is urged to determine the need for their approval and run a single pump test which will satisfy the requirements of both Bureaus. Questions regarding the requirements of the Bureau of Water Allocation should be directed to that Bureau at 1-609-292-2957.

Quality

All proposed PCWS wells must be sampled to determine if the water meets all New Jersey State Primary and Secondary Drinking Water Standards (see N.J.A.C. 7:10-5 and 7). Treatment will be required if the water exceeds any Maximum Contaminant Level (MCL) or recommended upper limit or optimal range. A summary of the current standards is contained in Appendix C.

C. Surface Water Intakes (N.J.A.C. 7:10-11.8)

The major areas of concern for new surface water intakes are watershed delineation, pollutant source inventory, determination of dependable yield, assessment of water quality, pilot testing of the surface water treatment plant, preparation of an emergency plan including watershed monitoring, and placing surface water sources in service.

Watershed Delineation

The applicant must use the appropriate ortho-photo quarter quadrangle map to show the exact location of the surface water supply intake. If the map is not available, the applicant should use the most current USGS Quarter Quadrangle map(s). The point showing the location must have an accuracy level of +/- 50 feet. The watershed of a surface supply must be delineated and shown on ortho-photo quarter quadrangle maps if the scale is practical; otherwise the USGS quadrangle maps must be used. In the case of a surface supply from a major river, the delineation may be limited to five (5) miles upstream. The location of the intake and possibly the watershed for the source being considered will be digitized and stored in the Department’s GIS system.

Pollutant Source Inventory

The applicant must perform an inventory of potential major and minor pollutant sources (as defined at N.J.A.C. 7:10-11.4) which may impact the surface water intake. All identified minor and major pollutant sources must be located and shown on either the ortho-photo quarter quadrangle or USGS quadrangle maps, as appropriate, and their potential impact on the proposed water supply must be evaluated.

The minor pollutant sources inventory may be limited to the area in the immediate vicinity of the intake (e.g. 500 foot radius). An inventory is not required for minor pollutant sources outside this area, but a general description as to type of developments and a rough estimate of the minor pollutant sources within the watershed is necessary.

The major pollutant sources inventory may be limited to a 5 mile distance upstream of the intake, within the watershed, and within a 500 foot distance of any waterway in the watershed. Other major pollutant sources in the watershed outside these limits need not be inventoried but the existence of other known major pollutant sources in the watershed is necessary and the approximate location of such source should be given.

Dependable Yield

The applicant must establish the dependable yield of a proposed surface supply and have it approved by the Bureau of Water Allocation. The dependable yield is generally based on flows during the drought of record. Questions regarding dependable yield should be directed to the Bureau of Water Allocation at 1-609-292-2957.

Assessment of Water Quality

The proposed surface source’s water quality must be evaluated over an extended period. At a minimum there must be at least one year of water quality data and precipitation data. The frequency of sampling will be dependent on parameters of interest and levels found.

At a minimum, monitoring should include monthly sampling for physical, chemical, and primary contaminants; quarterly sampling for Giardia lamblia, Cryptosporidium and radiological contaminants; weekly for turbidity, temperature, and bacteria (total and fecal coliform); and daily for precipitation within the watershed.

At least one of the quarterly tests should be done either during or immediately following a significant precipitation event (more than 1" of rain) and another during a dry period (no rain for 1 week during the summer).

Furthermore, once per season, the applicant should monitor for microbiological and physical parameters weekly for 4 consecutive weeks.

Pilot Testing

Every proposed surface source should be pilot tested for treatment alternatives. The duration of the pilot test must be a minimum of 1 week, and preferably will be for a longer period of time. During pilot testing, the water quality conditions experienced during the water quality assessment should be replicated, either through stirring of sediments or artificially adding turbidity spikes. Ideally, the pilot plant should be operated and evaluated over a period of several months during which naturally occurring water quality variations can be experienced.

Water quality data of raw and treated water will be reviewed by the Bureau to evaluate the plant performance. In addition, the treated water will be evaluated for disinfection-by-products and corrosion-by-products. Distribution system conditions should be simulated by the applicant where treated water is conditioned as if it where to be delivered (e.g. disinfected, pH adjusted, corrosion inhibitor fed, etc.). Disinfection-by-products should be measured at the point of entry to distribution, at one hour, two hour, four hour, and eight hour intervals, etc. until reaching 150% of the anticipated maximum residence time. Temperature, chlorine residual, pH, and time as well as the season are critical aspects of disinfection-by-products, therefore, care in selection of conditions and record retention are of critical concern. The Bureau will look at these and determine whether worst (or likely worst) conditions are being presented. The applicant and engineer are encouraged to propose a pilot treatment plant plan and to meet with the Bureau to review and seek approval of the plan prior to commencing pilot plant studies.

Emergency Plan and Watershed Monitoring

Applicants must prepare and submit a Watershed Monitoring and Emergency Plan as part of the application package for a proposed surface water source. Said plan must include a proposal for

continued monitoring of the watershed at critical points to allow early detection of changes in water quality. It also must include a system of monitoring land developments within the watershed and notification process for receiving notice of such developments through municipal and county planning boards. The plan must also include the identification of emergency notification and response procedures with the participation of an established emergency response system through county and/or municipal emergency coordinators and local police departments as appropriate.

Placing Surface Water Sources in Service

Placing new sources in service always presents new challenges; this is particularly true when the source is a surface water supply. Care must be taken for proper and early notification of consumers. If the system also includes a new treatment plant, the Bureau highly recommends that the plant be operated for several days until all process have been fine-tuned, before the plant is actually placed in service. Once all processes have been fine-tuned and are running properly, the Bureau further advises that the water purveyor start delivering water from the new source gradually. This usually minimizes consumer complaints. The Bureau should be advised when the new source is scheduled to go in service so that it can be prepared to handle the usual higher number of consumer water quality complaints. The Bureau conducts inspections of new surface water treatment plants prior to allowing such plants to be placed in service. Early notification is encouraged.

D. Distribution Modifications

This category includes pump stations, storage facilities, and water main construction as described below:

Pump Stations (N.J.A.C. 7:10-11.9)

The Bureau requires that a pump station have firm capacity (capacity with the largest pump out of service) to meet the maximum design output of the station. Auxiliary power is required if the pump station is necessary to maintain pressure in the system it serves (e.g. no storage is provided in that portion of the system, etc.).

Pump stations should be located a minimum of 6 inches above the surrounding grade, but the Bureau will allow pump stations to be located below grade provided the station is designed as follows:

1. Dual sump pumps which will activate at different flood levels must be provided;

2. An alarm which will sound if the second sump pump is activated or if the water level reaches 6 inches above the floor must be provided;

3. Isolation valves must be provided which will automatically close if there is a power failure or if the second sump pump is activated; and

4. An automatic above-ground power shutoff must be provided which will activate when the water level reaches the base of the booster pumps.

Water Main Construction (N.J.A.C. 7:10-11.10)

As previously indicated, distribution systems must be designed to maintain a minimum of 20 psi pressure at street level at all locations in the distribution system under all flow conditions.

Adequate separation of water mains and sanitary sewer mains must be provided. The water and sanitary sewer mains should be separated by a minimum of 10 feet horizontally. If such separation is not possible, the mains must be laid in different trenches with the water main being 18 inches above the sanitary sewer main. At crossings of water mains and sewer lines (excluding sewer service laterals), or where adequate separation is not possible, the sanitary sewer main should either be encased or be of watertight construction with watertight joints that are a minimum of 10 feet from the water main. The Bureau will entertain other options for protecting the water main (e.g. double casing, concrete encasement, etc.) on a case-by-case basis. Please note that polyethylene wrapping of the water main is not an acceptable means of protection; this practice is usually provided as a means of external corrosion protection of the water main.

Special consideration should be given to surface water crossings, whether over or under water. Adequate protection from damage and freezing must be provided.

The Bureau requires a minimum water main diameter of 6 inches for systems with an average demand of less than 1 MGD and 8 inches for larger systems. The maximum velocity in water mains excluding fire flow should not exceed 5 feet per second in water mains up to 16 inches in diameter and 10 feet per second in water mains greater

than 16 inches in diameter. The Bureau will allow smaller diameter water mains if the applicant provides hydraulic analysis showing how the maximum velocity will not exceed the above criteria using an instantaneous flow of 12 GPM per service; the possibility of future development must be considered. However, water mains intended to serve fire hydrants must be a minimum of 6 inches, regardless of the instantaneous flow through the pipe.

So far as is practicable, water mains should be looped to eliminate dead ends. Where dead ends cannot be avoided, a hydrant or other flushing device must be provided. Flushing devices should be capable of providing a minimum pipe flushing velocity of 2.5 fps.

The Bureau requires that adequate valving be provided to minimize service interruption and safety hazards during repairs and interruptions of service. The Bureau uses the (n-1) formula for determining the required number of valves at an intersection; that is, at a 4-way intersection, 3 valves are required. Valves should be provided on straight runs of water mains, such as transmission mains, at 2,500 foot intervals; the Bureau will allow greater distances for larger transmission mains, but in no case will the Bureau approve a distance greater than 1 mile between valves.

When submitting a permit application for a water main extension with new customers, the applicant must show that the water system has adequate firm source capacity to meet the system's estimated new peak daily demand with consideration for the additional demand of the proposed water main extension (refer to Section II Part B for an explanation of firm capacity and peak daily demand). Additional demand is calculated using 0.25 GPM per bedroom for residential units and 3 times the average daily demands given in N.J.A.C. 7:10-12.6 for commercial and/or industrial units. The Bureau will not approve permit applications for water main extensions in those systems which do not have adequate firm source capacity to meet the estimated additional demand of a proposed water main extension.

Please note that the demand estimates provided by the Department of Community Affairs at N.J.A.C. 5:21-5.1 et seq. may be used in lieu of the Bureau’s demand estimates (see Appendix C). Please note that N.J.A.C. 7:5.21-5.2(d) requires use of a peaking factor of three (3) when using Exhibit 5.1 “Water Demand/Generation by Type/Size of Housing” to estimate additional demands.

For the purpose of calculating the additional average daily demand for determining compliance with the Water Supply Management Act Rules (see below), the applicant should use an additional average demand of 100 GPD per bedroom. Once again, the demand estimates

provided by the Department of Community Affairs at N.J.A.C. 5:21-5.1 et seq. may be used in lieu of the Bureau's demand estimates.

Master Permit for Water Main Construction

As indicated previously, the Master Permit for Water Main Construction will allow a water purveyor to submit one application for all water main construction to be performed in a system for the next 3 years. The water purveyor must identify all work that will be performed and submit one set of Master Technical Specifications, an overall plan showing all existing and proposed water mains (including replacements), an Engineer's Report, and a permit application review fee. The applicant will be required to show how adequate firm source capacity will be provided with consideration for the total build-out of all proposed work included in the application.

The water purveyor must renew the Master Permit annually for the permit to remain valid. The annual renewal should identify the work that has been completed, any developments that should be removed from the Master Permit, and any new developments that should be added to the Master Permit. If new developments are to be added, an updated description of how adequate firm source capacity to meet the system's new estimated peak daily demand will be provided must be included. If a purveyor chooses to let the Master Permit lapse and does not apply for a renewal, the work approved in the Master Permit must be completed within three years of the issuance date of the Master Permit; any work not completed is subject to the Bureau's review under a new permit application, if such approval is necessary.

If a water purveyor desires to construct water main which requires the approval of the Bureau, but is not included in the Master Permit, the purveyor has two options. The first is to apply for a separate permit application for the water main construction as described previously. Calculations showing how the PCWS has adequate firm source capacity to meet the additional demand of the new water main construction extension must be provided, if applicable. Please be advised that the water purveyor will be held accountable for all water supply committed to developments approved in the Master Permit when determining the system's ability to meet its new estimated peak daily demand. The second option is to wait for the next renewal of the Master Permit and add the new construction to the Master Permit at that time. The Bureau will not allow substitution of one development for another once the Master Permit has been issued.

Storage Facilities (N.J.A.C. 7:10-11.11)

As indicated in Section II, the Bureau requires that all PCWS provide storage to allow for proper service and also have minimum effective storage capacity as required by the Water Supply Management Act Rules, N.J.A.C. 7:19-6.7.

Storage facilities should be located throughout the distribution system to meet peak loads and to provide water in the event of a main break or mechanical failure (e.g. well failure, pump station failure, etc.).

The Water Supply Management Act Rules outline the required storage capacity for a PCWS. The required storage capacity is defined in terms of a percentage of the system's average daily demand based on the number of sources and interconnections and the availability of auxiliary power. Effective storage capacity is defined as that storage capacity which is not used to maintain 20 psi (the required minimum pressure) in the distribution system. Hydropneumatic tanks are not considered effective storage.

PCWS which operate hydropneumatic pumping systems and do not have other storage facilities must meet the following design requirements:

1. The total capacity of all wells\pumps must be a minimum of 10 times the average daily demand of the system to be served; and

2. The gross capacity of the hydropneumatic tank, in gallons, must be a minimum of 10 times the capacity of the largest well\pump, rated in gallons per minute.

E. Treatment Modifications

General Chemical Feed Requirements (N.J.A.C. 7:10-11.12)

A minimum of 2 feeders must be provided for any chemical feed system at a treatment plant which serves multiple sources or which has a capacity that exceeds 20 percent of the total system capacity.

All chemical feed pumps must be electrically connected to a well pump or a booster pump to ensure the chemical feed pump will not operate without water flowing. Once activated, chemical feed pumps must be either flow paced or residual paced.

All chemical feed pumps must be equipped with an anti-siphon device and the chemical feed lines should be looped to a point higher than the highest level of the chemical storage tank to prevent back-siphonage or drainage into the treated water supply.

A minimum of 30 days storage is required and the capacity of the bulk storage tank must be at least 120% of the amount of chemical to be delivered. If the chemical solutions are to be prepared or diluted on-site, either an air gap or a reduced pressure zone backflow preventer must be provided for the make-up water.

Chemical containment areas should be provided for all chemical storage areas. Said containment areas should have a volume greater than the largest quantity of chemicals to be stored in the area.

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

The Bureau requires that chlorination be the last form of treatment in a treatment train. Pre chlorination may be practiced provided post chlorination is also practiced. The Bureau will consider a deviation from this requirement on a case-by-case basis for phosphate booster feeds.

A permit is required to add chlorination or to make any changes in current disinfection practices in existing facilities. The Bureau's review will be based upon the current regulations (e.g. a water system which switches from gas chlorine feed to sodium hypochlorite feed will be required to have the minimum contact time required at the time the conversion is approved even if the system had an earlier approval for a lesser contact time).

Chlorine feeds must be designed to maintain a minimum chlorine residual based on the water pH; the minimum free chlorine residual allowed is 0.2 ppm.

Ground water sources must provide a minimum of 5 minutes chlorine contact time prior to water reaching the first customer. However, the Bureau encourages the water purveyor to provide greater contact time to provide for 4-log inactivation of viruses (refer to Appendix G for CT values).

Surface water systems and systems which are determined to be ground water under the direct influence of surface water must meet the minimum contact time and residual disinfectant requirements of the Federal Surface Water Treatment Rule (40 CFR 141 - Subpart H Filtration and Disinfection) and are required to maintain a

continuous chlorine residual analyzer and recorder. Please refer to N.J.A.C. 7:10-9 for additional requirements.

Means for taking a finished water sample after the required contact time must be provided. Said tap must be located in a protected location and may not be a hydrant of other flushing device.

Corrosion Control (N.J.A.C. 7:10-11.15(d))

Systems which do not meet the lead and/or copper action levels as defined in the federal Lead and Copper Rule (40 CFR 141 - Subpart I - Control of Lead and Copper) are required to install corrosion control treatment. This includes examining source water quality and then determining the appropriate form of treatment (e.g. pH adjustment, addition of a phosphate corrosion inhibitor, addition of a silicate inhibitor, etc.). A corrosion control treatment recommendation must be made to the Bureau. Upon approval and installation of the recommended treatment, additional follow-up monitoring is required. For further guidance, please refer to the EPA’s Lead and Copper Rule Guidance Manual Volume II: Corrosion Control Treatment.

Volatile Organic Compound Removal (N.J.A.C. 7:10-11.15(g) and (h))

Treatment for volatile organic compound (VOC) removal should consist of either packed column aeration or granular activated carbon filtration. Upon approval of VOC removal treatment the Bureau generally requires the water purveyor to sample the influent and effluent water for VOCs once every 2 weeks to monitor treatment efficiency. The water purveyor may request a reduction in sampling frequency after the treatment has been in operation for a minimum of two years. Regardless of any additional sampling requirements, all PCWS with VOC removal treatment must submit one (1) finished water sample from the facility to the Bureau on a quarterly basis.

Packed column aeration towers should be designed to remove contaminants from twice the level found to a level below the contaminants’ MCLs. The removal efficiency should not be less than 95%. A back-up blower and auxiliary power is required if the tower treats multiple sources. The Bureau will consider deviations from this requirement if the system shows it is able to meet its peak daily demand with the entire treatment facility out of service. The applicant must also determine if an Air Quality Permit is required.

Granular activated carbon filter units must be designed to meet the requirements of pressure filters, as applicable. A minimum empty bed contact time of 20 minutes must be provided and the filters

must be capable of being backwashed. The life of the GAC must be carefully determined because contamination through desorption may result in contaminant concentrations in the finished water which are greater than those levels found in the raw water.

Filtration (N.J.A.C. 7:10-11.14)

The Bureau requires that the total filtration capacity of a system be such that, with the largest filter out of service, the loading rate on the remaining filters will be no greater than 3 GPM/SF for pressure filters and 5 GPM/SF for rapid sand and mixed media filters. A minimum of 2 filters must be provided for all filtration systems. The design may not include a by-pass around the filters nor any cross connections (e.g. through the backwash water piping).

The Bureau will not approve pressure filters for primary filtration for surface water treatment plants.

Coagulation and Sedimentation (N.J.A.C. 7:10-11.13)

These treatments are typically associated with surface water treatment plants and usually precede filtration and disinfection (although pre chlorination is commonly practiced). Redundancy of equipment to meet the firm capacity of a plant is required for all feeds and treatments, except for flocculation and sedimentation basins. For flocculation and sedimentation basins, a minimum of two basins are required for each process, but each basin does not need to be sized to serve the total plant capacity.

Ion Exchange (N.J.A.C. 7:10-11.15(b))

The Bureau is concerned with the use of ion exchange due to the related increase in the sodium level in the drinking water and also because the process generates backwash water which must be properly disposed of due to the higher chloride levels. Please note that the Bureau will not approve installations if the treatment will cause the sodium level to exceed the recommended upper limit. Furthermore, the Bureau will only approve ion exchange for softening; the Bureau will not approve ion exchange for iron and manganese removal.

If ion exchange is proposed for the removal of a primary drinking water contaminant (e.g. barium, arsenic, mercury, radium, etc.) the Bureau will require that the process be pilot tested on the source in question or an analogous system with similar water quality be

identified and its performance evaluated.

Sequestration (N.J.A.C. 7:10-11.15(c))

Sequestration is an effective method of controlling iron and manganese discoloration as well as calcium and magnesium scaling. The Bureau will allow systems with iron levels up to 0.6 ppm and manganese levels up to 0.1 ppm to provide sequestration instead of removal. For systems with iron and/or manganese which exceed these levels, removal via filtration will be required. Sequestration for scaling control is generally limited to 300 mg\l total hardness (as CaCO3).

Chlorine Dioxide and Ozonation (N.J.A.C. 7:10-11.16(i) and (j))

Although both of these treatments are beginning to be used in public water treatment as strong oxidants and disinfectants, said treatments must always be followed by post chlorination for chlorine residual maintenance.

When using chlorine dioxide, the maximum feed rate must not exceed 1.5 mg/l and each generator must be at least 95% efficient in producing chlorine dioxide and the production of by-products (e.g. chlorates, chlorites, etc.) may not exceed 5%.

When using ozonation, the formation of disinfection-by-products (e.g. bromates, chlorites, etc.) must be carefully examined. This must include pilot testing of the proposed actual source to be treated.

VIII. REFERENCES

1. American Water Works Association, AWWA Standards.
   Available from AWWA at 1-303-794-7711.

2. American Water Works Association, 1986, Introduction to Water Distribution, Volume 3.
   Available from AWWA at 1-303-794-7711.

3. New Jersey Department of Environmental Protection and Energy, 1991, New Jersey Well Head Protection Program Plan.
   Available from the Office of Environmental Planning at 1-609-633-1179.

4. New Jersey Department of Environmental Protection and Energy, 1992, New Jersey Geological Survey Report GSR 29, Guidelines for Preparing Hydrogeologic Reports for Water-Allocation Permit Applications, with an Appendix on Aquifer-Test Analysis Procedures.
   Available from the Bureau of Water Allocation at 1-609-292-2957.

5. Residential Site Improvement Standards, N.J.A.C. 5:21-5.1 et seq., June 1997
   Available from the Department of Community Affairs at 1-609-984-0040

6. New Jersey Safe Drinking Water Act Regulations, N.J.A.C. 7:10-1.1 et seq., November 1996.
   Available from the Bureau of Safe Drinking Water at 1-609-292-5550.

7. New Jersey Water Supply Management Act Regulations, N.J.A.C. 7:19-1.1 et seq.
   Available from the Bureau of Safe Drinking Water at 1-609-292-5550.

8. United States Environmental Protection Agency, March 1991 Edition, Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources.
   Available from the National Technical Information Service (NTIS) at 1-800-553-6847 or AWWA at 1-303-794-7711.

9. United States Environmental Protection Agency, September 1992 Edition, Lead and Copper Rule Guidance Manual Volume II: Corrosion Control Treatment.
   Available from the National Technical Information Service

(NTIS) at 1-800-553-6847 or AWWA at 1-303-794-7711.

Appendix A

Standard Permit Application Form

Appendix B

Permit Application Technical Review Forms

Appendix C

Primary and Secondary Drinking Water Standards

Appendix D

Department of Community Affairs
Daily Water Usage Requirements

Appendix E

New Well Test Requirements

MEMORANDUM

PROCEDURE FOR NEW WELL TESTS AND INSPECTION
BUREAU OF SAFE DRINKING WATER

Before any well may be approved by this Department as a source of water for public water supply systems an inspection and test by a representative of this Department must be conducted. For the guidance of all concerned the following is outlined:

The inspection is conducted for the purpose of detecting any sanitary hazards or discrepancies which might exist and also to determine if the well and appurtenances have been constructed according to plans and specifications submitted to this Department with the application.

Samples will be taken during the well test for both bacteriological and chemical analysis. The water purveyor and/or engineer should be prepared to pump the well to waste for at least one hour.

The well should have been rested for a period of at least 24 hours prior to the start of pumping for the well tests.

It is of sufficient importance to reemphasize here that provision should be made for the well to be pumped to waste for at least one hour and that the well blowoff be adequately protected from sanitary hazards. A sampling tap must also be provided at the well discharge in order that raw water samples may be taken. The well should have no trace of chlorine residual at the start of the well test.

Please note that it takes six to eight weeks before results of the lab analyses are received by this Bureau. Final approval of the well will be based on satisfactory results of the well test and inspection.

Appendix F

Emergency Well Use Procedure

Procedures for Emergency Use of a Well
By
Public Community Water Systems

The following criteria must be met in order to place a well into service prior to the well being approved for emergency use by the Water Allocation and Safe Drinking Water Bureaus.

1. A Water Supply Emergency must be declared by the water system and/or the local governing body when appropriate;

2. Mandatory water use restriction must be in effect and public notification implemented;

3. A complete application for permit modification must be submitted in accordance with N.J.A.C. 7:19-2.2 to Bureau of Water Allocation within 30 days;

4. A complete application for water works facilities approval in accordance with N.J.A.C. 7:10-11 must be submitted to the Bureau of Safe Drinking Water within 30 days (if not already done so);

5. The professional engineer and/or licensed operator has reviewed water quality results from well and certifies that they meet primary drinking water quality standards; and

6. The emergency well shall be utilized in a “last on-first off” form of operation.

A written request for approval of Emergency Well Use, outlining the measures taken pursuant to the items listed above and the nature of the emergency should be submitted to:

Shing-Fu Hsueh, Ph.D., Administrator
Water Supply Administration
P.O. Box 426
Trenton, New Jersey 08625-0426

Appendix G

CT Tables