DOMESTIC WATER SUPPLY PERMIT

APPLICANT INSTRUCTIONS

I. BACKGROUND

One of the more significant threats to health and safety is the purity and quality of the water consumed by the public. Widespread waterborne illnesses can and have occurred whenever the public's drinking water has become contaminated. Therefore, the ownership and operation of a public water system constitutes a significant public responsibility. There are many federal and state laws and regulations that have been developed and adopted over the years to assure that public drinking water is safe for human consumption. The majority of these statutes are contained in the Safe Drinking Water Act (chapter 7 of the California Health and Safety Code). The adoption of implementing regulations and the enforcement of the drinking water laws of California are the responsibility of the California Department of Health Services (Department). Although the laws and regulations governing the operation of a public water system are quite detailed, the basic responsibilities of an owner or operator of a public water system are the following:

- Knowledge of and compliance with all drinking water regulatory requirements
- Obtaining a domestic water supply permit
- Obtaining and maintaining an adequate source and quantity of water
- Providing appropriate treatment of the water supply
- Providing a distribution system that complies with the Waterworks Standards
- Hiring certified water system operators
- Providing continuous monitoring of the quality of the water
- Keeping the consumers informed
- Responding to emergencies

A key feature of the Safe Drinking Water Act is the requirement that no person may operate a public water system without having secured a domestic water supply permit from the Department. Operating a public water system without the proper permit not only constitutes a danger to consumers, but may also subject the operator of such a system to substantial liability in the event of a consumer illness. In addition, the Department may impose significant civil penalties up to $1000 per day on the operator. Before issuing a water supply permit, the Department conducts a thorough evaluation of the system or proposed system to provide assurance that the system will be able to provide a safe and reliable supply of drinking water.

The statutes provide a clear definition of a public water system. Basically, anyone who serves drinking water to at least 25 persons for at least 60 days out of the year, or who serves domestic water to 15 or more service connections, is a public water system and

must have a domestic water supply permit. In addition, there are different types of public water systems such as community water systems, transient non-community water system, and nontransient non-community water systems. There are also specified methods for determining the number of persons served, etc. If you are in doubt as to whether or not you may meet the criteria for a public water system, you should contact the local district office of the Department's drinking water program. They can provide you with guidance and assistance in making this determination. If it is determined that your system meets the criteria, the District will provide you with a permit application form and other materials. Even though a water system does not qualify as a public water system, state law has established another category of regulated water systems known as State Small Water Systems. These are community water systems serving at least 5 but less than 15 service connections and are subject to less stringent requirements. State Small Water Systems are regulated by local health departments. These agencies should be contacted regarding permits or other requirements pertaining to these systems.

The information presented in this document is to assist and guide persons that are or will be establishing a new public water system, including State Small Systems that expand beyond the 14-service connection limit. The State water supply permit is a one-time permit that is issued prior to the operation of a drinking water system. If various changes are made to the water system such as a change of ownership or a change in the treatment of the water, the initial permit must be amended to allow the change to occur.

II. OBTAINING A WATER SUPPLY PERMIT

This section outlines the various steps that an applicant for a water supply permit needs to follow. Applicants should be aware that for some counties, the Department has delegated some of its drinking water enforcement responsibilities for public water systems serving less than 200 service connections to the county. The county agencies that have received this delegation are known as Local Primacy Agencies (LPAs). Thirty-four counties have received this delegation. Included in the delegation is the authority to issue the State drinking water permit on behalf of the Department. If you are uncertain as to which agency will issue the permit in your county, you should contact the District Office for the Department's drinking water program. A permit application fee must accompany all applications for a water supply permit. Contact Napa County Department of Environmental Management for the current feel.

Step 1. Contact the agency and discuss your plans.

After determining whether the county or the State has permit jurisdiction over your water system, you should contact the agency and set an appointment to discuss your proposed water system. The agency can provide information and advice that may help you decide on various options for your system and can help you avoid potential pitfalls. The agencies also have various guidance documents available that will be useful in doing the preliminary engineering for your system. They can also point out specific requirements that you may not have been aware of previously. For example, you may have

contemplated drilling a well near a surface stream without being aware that such a well will likely be required to have complete filtration and disinfection facilities installed. At the meeting, the respective agency can also provide you with the proper forms for the type of system you plan on constructing as well as advise you on other procedural steps (such as compliance with the California Environmental Quality Act).

Step 2. Review applicable regulations and requirements.

At the meeting with the agency, you will be provided with a copy of the drinking water statutes and regulatory requirements. It is important that you review these requirements carefully. Not only will you be forewarned of the requirements and responsibilities for your system, but this knowledge may preclude the necessity of making costly repairs or modifications to your system at a later date. By reviewing the regulations and requirements, you will also be able to project more accurately, the ongoing operation and maintenance costs for your system. The Department and the LPAs have substantial enforcement authority and can issue administrative fines up to $1000 per day for violation of drinking water requirements. Ignorance of these requirements is no excuse and provides no protection.

Step 3. Consider all alternatives.

As pointed out previously, owning and operating a public water system is a substantial responsibility and involves a significant ongoing cost to maintain compliance with drinking water regulations. As discussed in Section III, State and federal laws require that a water system must be able to demonstrate that it has the technical, managerial, and financial capability to reliably operate the water system for the foreseeable future.

One of the alternatives that you will be required to evaluate is the possibility of consolidating your proposed water system with an existing public water system. Consolidation with an existing system is the preferred alternative in most cases. Assuming the existing water system is a viable water system, there are obvious economies of scale both initially and ongoing which generally results in less overall cost to consumers of the new system. In addition to cost savings, there are usually additional benefits of a reliable source of water, assured quality of water, better overall management, and more skilled technical operational capabilities. A new water system permit will only be issued if you demonstrate that connecting to an existing water system is not feasible or practical.

Step 4. Obtain an application form and supporting material.

If, at this point, you have decided to proceed you should obtain a copy of the appropriate application form and all of the supporting guidance material if you have not already done so. After reviewing the form and these instructions, you should contact the District or the

LPA if you have any specific questions regarding the form. You should also determine the appropriate amount of the application fee since that amount will have to be remitted to the agency along with the completed information.

Step 5. Hire a competent engineer to prepare the permit technical report.

The heart of the application is the technical report that must accompany the permit application. The technical report is similar to a set of construction blueprints that a person submits to obtain a building permit. It sets forth all of the technical information, calculations, material descriptions, design parameters etc. that are the basis for construction of the new water system. Section IV describes in detail the information that must be included and addressed in the technical report.

The technical report must be prepared by a qualified engineer with experience in the design of type of water system being proposed. This is especially important when proposing a surface water system. Use of this type of technical expertise greatly simplifies the process to the benefit of the applicant and the Department and reduces the possibility of rejection of the application for lack of adequate technical information.

Step 6. Complete all of the required information.

After obtaining a copy of the application form and materials and hiring a competent engineer to design the system, the next step is to develop all of the information required to (1) fill out the application form; (2) complete the Technical, Managerial, and Financial (TMF) Assessment form; and (3) prepare the permit technical report. The Department's field engineers are available to discuss and assist your consulting engineer with respect to any of the technical aspects of the water system or the State requirements.

Step 7. Submit the application.

After all of the required information is completed, you should submit the application with the supporting information to the District Office or the respective LPA along with the application fee. Depending upon the complexity of the water system, it may take several months to complete the review of the application. During this time, Department or LPA staff may contact you with questions or a request for additional information. It is also possible that staff from one of these agencies may wish to conduct a field inspection of the proposed site or the proposed water source. If so, you will be contacted to arrange a mutually convenient time for the inspection.

Step 8. Begin construction.

After you have received the permit from the Department or the LPA, you may initiate the construction of the project. Note that the law does not specifically preclude you from

starting construction of the water system prior to receiving a water supply permit, however, it is strongly advised that you not do so since it could result in significantly higher costs. For example, some installed facilities may have to be removed because they did not comply with the Department's requirements. Similarly, a buried pipeline may have to be uncovered to allow the Department to inspect the pipeline material used etc. The Department will likely conduct one or more inspections of the water system project during construction. You should notify the Department's District Office or the LPA when construction is completed. Under no circumstances should you operate the water system and provide water to consumers prior to receiving approval to do so from the Department or the LPA.

Step 9. Hire a certified operator.

All community water systems and many of the non-community water systems are required to be operated by a State certified operator. The particular grade of operator required for your system should be specified in the permit granted for your system. If not, you should contact the District Office or the LPA and determine if this is needed. In some cases, the permit will contain a special condition specifying the grade of operator needed and a deadline for hiring such an operator. In most cases, the certified operator must be on board prior to placing the water system into operation.

Step 10. Comply with all permit conditions.

The permit issued to your water system generally includes various permit conditions with which you must comply. Some of these, such as the development of a water system operations plan, may contain a deadline by which the item must be completed and submitted to the Department or LPA. It is important that you understand and comply with these conditions since a citation and administrative fine may be assessed for failure to do so.

III. TECHNICAL, MANAGERIAL, AND FINANCIAL REQUIREMENTS

The United States Environmental Protection Agency requires that any new public water system must demonstrate that the system has, or will have, adequate technical, managerial, and financial (TMF) capability to be able to reliably operate a public water system in compliance with all drinking water requirements for the foreseeable future. Pursuant to that requirement, the Department has adopted specific criteria that set forth what constitutes adequate TMF capability. These criteria are described in detail in the TMF Assessment Form and guidelines that you received from the Department or the LPA. In order to be issued a water supply permit, you must respond to all of the items described in the form as mandatory or required for new systems.

Most of the TMF items must be completed and submitted to the Department or LPA prior to the issuance of the permit. A few items, such as the completion of a systems operation plan, may be delayed until the system has been placed into operation. For these items, a condition will be placed into the permit that requires the submission of the item by a set date.

The purpose of the TMF requirements is to assure that systems are not created that will likely have financial or technical difficulties in operating their system in the future. Many small systems have difficulty in developing and maintaining the technical expertise needed to operate their systems reliably, particularly if the source water requires treatment to meet drinking water standards. For this reason consolidation with another water system is recommended. If this is not feasible, you should consider contracting with another agency or water system for on-going operation of your water system. This is one relatively easy way to comply with the technical portions of the TMF requirements and is encouraged.

Since the TMF Assessment Form contains detailed instructions and guidance for filling out the form, that information is not repeated here. Your application for a permit, however, cannot be processed unless the TMF Assessment Form is completed and submitted along with the permit application. If you have any questions about the TMF form, you should contact the District Office for the Department or the respective LPA.

IV. PREPARATION OF THE TECHNICAL REPORT

As stated earlier, this is the heart of the application for a permit and contains all of the technical information necessary to allow the Department to evaluate the proposed water system. This report must accompany the permit application and must be prepared by a qualified engineer with drinking water system design experience. Although it is not necessary that the report follow the specific order in which the following items are presented, it must address all of the required information. If part of the information is contained in another document or report, it is not necessary to repeat that information in this report but appropriate references should be indicated and the additional reports attached.

The discussion of the various elements of the technical report as presented below are for a community water system since this is the most comprehensive type of water system. If your application is for a non-community water system, you may ignore those items (or simply indicate them as non-applicable) that do not pertain to a non-community system. Examples are the number of service connections or the map of the service area. Those elements that pertain only to a community water system or a noncommunity water system are designated as CWS or NCWS respectively.

1. General Water System Information

This section should present or describe basic information regarding the proposed water system. This section should include a written description of how water flows through the system, from the source through the distribution system and how the flow rates and water system pressures are maintained. These items are in addition to the managerial information that is included in the TMF Assessment. If the information is included elsewhere, it does not have to be repeated in this report. The report should describe or provide the following:

- The proposed number of service connections (CWS). This should be the number of service connections for which the proposed facilities are being designed and sized. For example, if the planned water system is being designed to serve a subdivision consisting of 250 lots, the proposed number of service connections would be 250 even though it may take a few years before that many connections are actually hooked up.

- The type of service connections anticipated (CWS). To the extent feasible you need to estimate the approximate number of residential, commercial, industrial, and agricultural connections that are expected to be served by the system. If any of the service connections will be to multiple dwelling establishments such as apartments, condominiums, or trailer parks, these should be indicated along with the numbers of each of those units.

- Type of use or users (NCWS). Describe the nature of the facility and the water system. For example will the system serve a campground, restaurant, motel, school, place of employment, etc? Also provide information on the anticipated number of persons that are or will be using the facility. Include estimates of maximum as well as average number of persons that will have access to or may use water from the water system. Also describe the basis for your estimates.

- Period of use. If the water system will be used on a seasonal basis you should indicate the periods of time that the water system will be in use. Examples of where this may be applicable are second home subdivisions that are closed in the winter, ski resorts, campgrounds etc.

- Consolidation evaluation. As indicated earlier, the feasibility of consolidating with an existing water system rather than creating a new one must be evaluated. The report should describe the results of that evaluation. If consolidation was deemed not to be feasible, a justification for that determination must be provided. Adequate justification, for example, may be based on physical separation (no nearby water system), type of terrain, excessive costs, or lack of sufficient water in the existing system.

- Map of facilities. You must provide a map that clearly shows the locations of the proposed water source(s), the location of any treatment facilities, storage facilities,

and primary transmission lines. If you desire, these locations can be included on the map delineating the service area of the water system that you prepared in response to the TMF requirements.

2. Source Water Information

- Description of source. The report must describe the nature of the planned source of water for the system. For example, will the source be a surface stream, lake or reservoir; a well; or an interconnection with another water system? Also describe the location of any surface water intakes and any information on the groundwater for proposed wells (depth of water table, etc.). Yield must be determined using the methods described in the Waterworks Standards.
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- Water quantity. In order to receive a permit for a new water system, you must demonstrate that the proposed source is sufficient to reliably serve the anticipated water demands of the system (including expected growth) for at least 10 years. Information must be presented to establish what the anticipated water demand will be for a 10-year period for the service area of the system. Make sure all water demands including required fire flows are included. If your source is a well, you need to establish the anticipated safe yield for the well and the ability of the groundwater basin to sustain that yield for the foreseeable future. The District Office can provide you with information on calculating well yield. The safe well yield, or the allowable water right, must be sufficient to meet the water demands for a period of at least 10 years. **The Maximum Day Demand (MDD) must be provided for the water system, in accordance with the WaterWorks Standards.** Water system sources must provide MDD without storage.

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- Assessment of vulnerability to contamination. The technical report must include a source water assessment to determine the vulnerability of the source water to contamination. Forms and guidance on conducting this assessment are available from the District Office.

- Source water quality analysis. In order to assess the suitability of the proposed source and the appropriateness of any planned treatment, it is essential that the quality of the source water be determined. Samples of the raw source water must be taken and analyzed by a State certified laboratory. All sources, whether surface or groundwater, must be sampled and analyzed for all of the organic and inorganic chemicals as well as radioactivity compounds listed in the drinking water regulations. In addition, surface water sources must be analyzed for the presence of bacteriological organisms.

  If the source will be a well that has not yet been constructed, the District Office or LPA may require a test well or may impose a permit condition that requires the constructed well to be sampled and analyzed before the well can be placed into service. If an existing well will be used, you will need to submit a copy of the well driller's report.

3. Treatment and Design Information

- Description and layout. Any type of treatment that is planned to be used should be described in detail. You should be aware that all surface sources and any wells subject to surface water influence must have complete filtration treatment consistent with the Surface Water Treatment Rules. Most other sources require disinfection as a minimum. If the water quality analyses indicate that any drinking water standard may be exceeded, appropriate treatment must be provided. Treatment alternatives should be discussed with the District Office or the LPA during the initial meeting discussed in Section I. You also need to provide a flow diagram showing the locations and relationships of individual treatment process units. The District Office has various treatment data forms and checklists that may assist you in preparing and presenting this information.

- Design capacities. The report should set forth the design criteria or parameters used for the treatment units as well as the planned design capacities. For wells, the anticipated yield should be estimated.

- Well construction. The report should describe the anticipated depth of the well as well as the size and type of casing to be used. Also show the planned depths of perforations and the type and depth of the sanitary seal. Please note that all wells must be constructed in accordance with the California Water Well Standards (DWR Bulletins 74-81 and 74-90) and any applicable local ordinances. Copies of these can be obtained from the District Office or the LPA. The Department also has available additional specific guidance material for the construction of drinking water wells. This can be made available upon request.

- Treatment chemicals. The type of chemicals planned to be used as well as the dosages and method of feeding those chemicals should be described. You need to be aware that all chemicals used in water treatment must be certified under the ANSI/NSF Standard 60.

- Disinfection facilities. Disinfection is one of the most important treatment processes and is required on many sources. The report should present detailed information on any proposed disinfection facilities including equipment to be used, feed rates, residuals, contact times, CT values, reliability features, etc.

4. Distribution System Information (CWS only).

- In designing and laying out the distribution system, the requirements of the Waterworks Standards should be carefully reviewed.

- Location. In addition to the overall map required under general information, you will need to prepare a scaled map showing the locations of all pumping stations, storage tanks, mains, hydrants, isolation valves, and flushing valves. If the system will have more than one pressure zone, the different zones should be delineated.

- Water mains. The report should provide the locations, sizes, lengths, depths, and type of materials to be used for all transmission and distribution mains. Special protections, such as where a water main crosses over a sewer line, should be shown and described.

- Pumping stations and storage tanks. Descriptions, specific designs, and the capacities of all pumping stations and storage tanks must be provided.

- Distribution pressure. The report should present sufficient design information to demonstrate that the system has been designed to sustain a minimum pressure of 40 psi throughout the distribution system at all times.

5. Operational Plans.

- Water Quality Monitoring Plan. As described in detail in the drinking water regulations, the water system must be monitored to assure that none of the drinking water standards are exceeded in the water delivered to consumers. The monitoring requirements are extensive and cover many different types of constituents including organic and inorganic chemicals, bacteria, radioactivity, and general minerals. It is required, therefore, that you develop and submit a water quality-monitoring plan that describes the proposed methods for compliance with these regulations. The plan, for example, must show the locations of sampling points, the frequency of sampling at each point, and the types of analyses to be run on the samples. If there will be rotational sampling for coliform bacteria, the method and locations of the rotational points should be described. The plan should also indicate who will be collecting the samples (e.g. water system personnel, certified laboratory) and the training those persons have or will receive. Once your monitoring plan has been approved, it will be incorporated into the permit and will be enforced.

- Water System Operations Plan. As described in the TMF guidance (also required by the Waterworks Standards), a comprehensive plan for operation of the water system must be prepared and submitted. The District Office or the LPA will inform you whether this plan needs to be submitted prior to or after issuance of the permit. The District Office can provide you with a separate guidance document for preparation of an operations plan.

- Disaster/Emergency Response Plan. As described in the TMF guidance, you will need to prepare a plan for responding to emergencies. This includes notification to the appropriate regulatory agencies, notification to consumers, and actions to be taken by the water system in the event of an emergency (earthquake, water supply disruption, power outage, contamination incident, etc.). The District Office can provide you with sample plans and guidance material for preparation of the emergency plan.

6. Environmental Documentation.

Since all new water systems are "projects" requiring State approval and permits, new water systems must undergo an environmental review that complies with the California Environmental Quality Act (CEQA). As an applicant for a water supply permit, therefore, you will be required to submit documentation (Notice of Determination) demonstrating that compliance with CEQA has been obtained, whether that compliance is by means of a categorical exemption, negative declaration, or an EIR. In those rare instances where the Department may be the lead agency, you will need to fill out and submit an environmental information form that will be provided to you by the District Office. The water supply permit will not be issued until compliance with CEQA has been fulfilled.

V. AMENDMENTS TO THE PERMIT

The State of California Domestic Water Supply Permit issued to you by the Department or the LPA is issued on a "one-time" basis. It is not subject to expiration and does not have to be routinely renewed. The permit, however, may need to be amended from time to time if changes in the water system occur. You should be aware that none of the following changes can occur unless a permit amendment has been issued:

- Change in ownership of the water system
- Change in classification of the water system
- The addition of new water sources
- Any changes in the method of treatment
- The addition of any storage reservoirs
- A major expansion of the service area

- An expansion that changes the water system classification
- Any change in the distribution system that does not comply with the waterworks standards

If you are contemplating making any of these changes, you should submit a request to the District Office or LPA for a permit amendment. Making these changes without an amendment to the original permit could subject your water system to citations and administrative fines.

In addition to the above amendments, the District Office or the LPA may reissue the water supply permit if they determine the original permit is out-of-date and needs to be updated.