

## **What is a Sanitary Survey?** (Surface Source and GWUDI Systems)

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In preparation for a sanitary survey, the system should consider the eight elements that make up the sanitary survey. The following is an explanation of a Sanitary Survey, the eight elements of a Sanitary Survey and some of the major topics within each element that will be considered when a system is inspected.

In the Interim Enhanced Surface Water Treatment Rule (IESWTR), a sanitary survey is defined as:

“an onsite review of the water source (identifying sources of contamination using results of source water assessments where available), facilities, equipment, operation, maintenance and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.”

This is the definition used in EPA's Guidance Manual *Conducting Sanitary Surveys of Public Water Systems-Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water* (April 1999). In the Guidance Manual, Sanitary Surveys are broken into eight sections: Source, Treatment, Distribution, Storage, Pump Facilities, Monitoring/Reporting/Data Verification, Management/Operation, and Operator Certification. The following further defines the eight elements of the Sanitary Survey and provides the major topics within each element that will be evaluated.

### Source:

The system's source will be evaluated for quality, quantity, reliability, and vulnerability. The major items of concern are: does the source have adequate storage (even during a drought); is the source water being impaired by a discharge upstream; and does the source have extreme changes in water quality. A review of the system's Source Water Assessment may be necessary to identify possible problems in the system's watershed.

### Treatment:

In evaluating the treatment of a surface source or GWUDI source, the condition and capacity of treatment facilities will be evaluated. In evaluating treatment capacity, each stage of the treatment will be assessed for size, chemical addition (type of chemical, application point and application rate), and operational condition. The treatment plant will also be evaluated for its handling of washwater to determine if there is any adverse impact on the treatment plant caused by recycling this water.

### Distribution:

An improperly maintained or designed distribution system can adversely impact public health just as a poorly operated water treatment plant. These conditions could lead to contamination of the distribution system through backflow from a cross connection or improperly maintaining a chlorine residual. The following will be evaluated during the survey: 1) sampling plans/maps (are samples representative of entire system), 2) field sampling/measurement (chlorine residual and pressures), 3) water line repair practices, 4) system flushing procedures, 5) cross connection control program, 6) water loss control program, 7) distribution maps, and 8) adequacy of properly certified distribution system operators.

### Storage:

Adequate above ground storage is an essential part of any distribution system. If a system does not have adequate storage that provides satisfactory pressure (one day's average usage and a minimum of 20 psi at the customer's meter) contamination through backflow could result. Storage tanks will be evaluated for location, capacity (correct size for service area), condition (inspected within last 5-7 years), and security.

### Pump Facilities:

Pumping facilities are essential to many water systems and especially those with large distribution systems. They provide the means for moving water from one section of the distribution system to another via storage tanks. Without pumping facilities to maintain adequate tank levels, water quality could become compromised if pressures fluctuate radically or drop below 20 psi. Evaluation will include pump facility capacity (with largest pump out of service), condition, chemical addition (if any), and security.

### Monitoring/Reporting/Data Verification:

Quality control is important in any industry that produces a product. A water system's product is potable water. Improperly treated water can directly impact public health, so it is vital that a water system closely monitor its water quality. To ensure that the system is supplying water that meets or exceeds standards, the inspector will review all records submitted to the Department, all chemical monitoring within the past several years, verify that correct water quality data is being submitted to the Department (comparison of monthly reports with daily logs), and ensure that correct testing procedures are being followed by the system's certified operator.

### System Management/Operation

Water system management has a major effect on water system performance. Management provides direction for the system, sets specific quality goals and ensures adequate funding and support is available to enable the system to provide safe, reliable drinking water. This element focuses on water system management and operation. The inspector will review system funding, goals set by management, staffing requirements/staffing needs, O&M documents and SOP's to be used by system operators.

### Operator Certification

The inspector will determine if the system has enough certified operators of sufficient grade to operate and maintain the water system. Surface water treatment plants are required to have an onsite operator of appropriate grade (III or IV) at all times during plant operation. Distribution systems need enough supervisory certified operators to ensure that any work performed by non-certified operators is in accordance with accepted water practices and AWWA guidance documents.

These eight elements, when combined, form the basis of the Sanitary Survey. When the Sanitary Survey is completed the system will be provided with a letter which details the results of the Sanitary Survey and whether the system was viewed as satisfactory or unsatisfactory. If the water system is found to be unsatisfactory, a detailed list of deficiencies will be provided along with specific date by which the system must correct or respond to the named deficiencies. If

necessary, the inspector may schedule a follow-up visit to ensure that the system is properly correcting the deficiencies.

Should a water system desire additional information on what is to be expected during a Sanitary Survey, EPA's Guidance Manual titled "*Conducting Sanitary Surveys of Public Water Systems-Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water* (April 1999)" should be obtained by contacting EPA through their website at [www.epa.gov](http://www.epa.gov).