

State Implementation Guidance for the CCR Rule (EPA 816-R-99-008 / Aug 1999)

Appendix I: Information on Source Water Assessment Programs (SWAPs) and Susceptibility Determinations

Appendix I provides more detailed information on State SWAP programs, wellhead protection programs and other source water information resources. On the following pages, you will find:

- ▶ Background information on source water assessments and susceptibility determinations referenced in Section 141.153 (b)(2) of the CCR rule.
- ▶ A discussion of CCR rule provisions that require highlighting of source water assessments.
- ▶ Examples of how a water system might incorporate the results of source water assessments into a CCR.

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Source Water Assessment Program

Background

The 1996 amendments to the Safe Drinking Water Act (SDWA) include a focus on pollution prevention which complements the traditional treatment approach to ensuring safe drinking water. In Section 1453, the amendments require states to develop Source Water Assessment Programs (SWAPs) and submit them for EPA approval in February of 1999. EPA has a nine month period in which to review and approve these programs and then, upon approval, States will have up to three and a half years to complete source water assessments for all public water systems (PWS). These assessments will include delineation of a source water protection area, inventory of potentially significant sources of contamination, and a determination of the susceptibility of the PWS to these potential contamination sources.

As part of an approved program, States must make the results of these assessments available to the public - either directly or through a delegated entity. This last requirement can, in part, be met through the requirements of the CCR rule that water systems provide susceptibility determinations to the public once an assessment has been completed. State source water assessments provide a springboard for local wellhead and watershed protection efforts. Although information about source water protection efforts is not specifically required in CCRs, the reports offer an excellent opportunity for water systems to explain how a community's drinking water supply is being protected.

Program Overview

When assessments conducted under the 1453 Source Water Assessment Program, are complete, States should provide information about the availability of these assessments and a brief summary of the results, i.e. the susceptibility of the system to contamination, for inclusion in the CCR. State personnel responsible for CCR implementation should coordinate closely with the source water program personnel in order to estimate when this assessment information would be available to water systems (This task may require extra effort where the SWAP program is located in another division or agency).

Many states are conducting assessments through local watershed efforts and the ongoing implementation of Wellhead Protection Programs (WHP) that may be used to satisfy or go beyond the SWAP assessment requirements. Wellhead programs may either be voluntary or mandatory for water systems depending on the States' program, but do include development of wellhead management plans. Watershed protection plans are all voluntary. Approximately 4,400 CWS systems nationwide have completed wellhead management plans although many more are in some stage of the process. Most States will be integrating SWAP and WHP activities. One of the key distinctions between the new SWAPs and existing wellhead programs and watershed protection programs is that SWAPs will explicitly include a determination about the susceptibility of the drinking water system to sources of contamination. These determinations will be needed for the purposes of CCR reporting since the CCR rule requires that reports contain a brief summary of the results of these susceptibility determinations.

More information about State SWAP programs, including a list of State source water contacts and links to State source water web sites can be found through <http://www.epa.gov/safewater>.

Incorporating Source Water Assessment Results in CCRs

Information about source water is an important part of the consumer confidence report. Table I-1 is a list of the report requirements related to source water. Requirements are highlighted in bold and followed by additional information.

| Table I-1: CCR Requirements Referencing Source Water Assessment Results | |
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| Rule/ Guidance Citation | Requirement |
| §141.153 (b)(1), §141.153 (d)(5), CCR Guidance: Section I, B.1: Items 2, 5 | <p>Each report must identify the source(s) of water delivered by the CWS by providing information on: the type of water used (i.e. surface water or ground water), the commonly used name (if any) and the location of the body (or bodies) of water.</p> <p>For surface water, the waterbody, such as a river, where the intake is located would be appropriate. The name of the watershed or sub-watershed could also be included. For ground water, the name of the principle aquifer would be appropriate. EPA encourages the use of simple maps to illustrate the extent of each system’s protection area. A system does not need to report data from every well in it’s well field. However, a system using more than one raw water source in independent distribution systems needs to account for each source. Explaining inter-connections and back-up sources will help consumers understand that the source of their water may vary during the year.</p> |
| §141.153 (b)(2) CCR Guidance: Section I, B.1: Items 2, 5 | <p>If a source water assessment has been completed, the CCR must:</p> <ol style="list-style-type: none"> 1) notify consumers that this information is available, and 2) tell them how to obtain the information <p>Where a system has received a source water assessment from the State, the report must include a brief summary of the systems’s susceptibility to potential sources of contamination, using language provided by the State or written by the operator.</p> <p>If an assessment is conducted as part of a State’s EPA approved Source Water Assessment Program, a brief summary of the susceptibility determination must be provided in the CCR, in addition to information on availability. As part of an approved program, States must make the results of these assessments available to the public - either directly or through a delegated entity. This often could extend beyond, but can, at minimum, be met in part by having systems provide a summary of the results of susceptibility determination in the CCR. States can either provide this information to the system or, in the case where responsibility for the assessment has been delegated, provide clear guidance on how the results should be presented to the public. Many state programs will produce brief system-specific reports summarizing the results of these assessments which water systems can use for the CCR.</p> |

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| Rule/ Guidance Citation | Requirement |
| | If the source water assessment has not been completed, systems could indicate when that information will be available to the public. Systems are encouraged to include information about specific significant sources of contamination in the source water area if they have readily available information from the assessments or other sources such as wellhead management plans, sanitary surveys, watershed assessments, special water quality studies, and other publicly available information. |
| §141.153 (d)(4)(ix) CCR Guidance: Section I, B.1: Item 4 | Each report must include the likely source(s) of detected contaminants to the best of the operator’s knowledge. Specific information regarding the likely source (s) of the contaminants may be available in sanitary surveys and source water assessments and should be used when available to the operator. If the operator lacks specific information on the likely source(s), the report must include one or more typical sources given in the Appendix B of the rule for the detected contaminant. (See Appendix H of this guidance for the list of typical sources). Even if a source water assessment is not yet complete, the state may have preliminary data about potential contamination sources from state-wide data bases or can provide additional information about the types of potential sources of contamination associated with particular contaminants. |
| §141.153 (e)(1) CCR Guidance: Section I, B.1: Items 4, 5 | If a system has performed any monitoring, including monitoring to satisfy ICR requirements, which indicate that <i>Cryptosporidium</i> may be present in the raw or finished water, the report must include a summary of the results of the monitoring and an explanation of the significance of the results. |
| §141.153 (h)(1) CCR Guidance: Section I, B.1: Item 6 | Every CCR must contain a brief explanation about the sources of drinking water and contaminants that may be present in the source water. Systems can either use the language provided in CFR 141.153(h)(1)(i) and (ii) or develop comparable language. |

CCR Examples - Summarizing Results of Source Water Assessments

Most source water assessments will be completed by the year 2003. Many source water assessments will be available before this date. Examples of how results of these assessments could appear in a CCR are given below.

| Table I-2: CCR Examples - Source Water Information | |
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| <p><i>Ground water source</i></p> <p>▶ <i>Source water assessment not available</i></p> | <p>Our water comes from three municipal wells drilled 500 feet into an underground source of water called the Low Plains Aquifer. These wells are located west of town on the north side of City Park. The town owns the land immediately around the wells and restricts certain activities on that property. The State will be doing a complete assessment of our source water which will be completed by January 2001. In the 2001 CCR we will summarize the source water assessment results and let you know how to get a copy of the completed assessment and all related information.</p> |
| <p><i>Ground water source</i></p> <p>▶ <i>Source water assessment available</i></p> | <p>Our water comes from three wells drilled about 500 feet into an underground source of water called the Low Plains Aquifer. These wells are located west of town on the north side of City Park. The wellhead protection area for these wells extends approximately 2000 feet north, 4000 ft south and 1500 ft east and west of the well field. (Please see the map). We have a town ordinance that prohibits dumping and many other activities that could pollute our drinking water in this wellhead area. The Department of Environmental Resources (DER) completed an assessment of our source water in January of 2001 and has reported that our raw water is most susceptible to contamination from abandoned irrigation wells and farm runoff. The town has done a follow-up investigation and has identified two abandoned wells. They have been properly plugged. Farm runoff continues to be a concern. Please contact the County Extension Service at [phone number] to get a list of area farmers participating in a three county source water protection program. You can get a summary of our assessment by calling the DER Region 1 office at [phone number]. A full copy of the assessment is available in the town clerk's office or on the Internet [Internet address].</p> |

Table I-2: CCR Examples - Source Water Information

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| <p><i>Groundwater source</i></p> <ul style="list-style-type: none"> ▶ <i>Source water assessment available</i> ▶ <i>Contaminants detected</i> | <p>Our drinking water comes from 5 municipal wells sunk 100 - 175 feet into a shallow unconfined aquifer which extends north of town. Wells 1, 2, & 3 provide all of our water for most of the year. Wells 4 & 5 are only used during water shortage emergencies - usually in late August. In January of 2001, the Pheasantville Waterworks Department conducted a source water assessment with funds provided by the State Source Water Protection Program. The assessment includes a vulnerability ranking - a prioritized list of the Possible Contaminating Activities (PCAs) identified in the source water assessment. The vulnerability ranking is based on the risk posed by each PCA (relative risk to drinking water supplies), the protection zone in which the PCA occurs, and the Physical Barrier Effectiveness rating (how effective the source and site are at preventing contaminants from reaching the drinking water). Activities at the top of the Pheasantville Vulnerability Ranking include Gas Stations (current and historic), Dry Cleaners, and Leaking Underground Storage Tanks. These activities are known, or believed, to have caused the presence of contaminants in Well 4 (1,2DCA) and Well 5 (Benzene). Other activities at the top of the Pheasantville Vulnerability Ranking are Chemical Storage, Metal Plating/Finishing, Plastics/Synthetics Producers, Septic Systems on Parcels Less than One Acre, and Sewer Lines. You can get a copy of this assessment, including a map of the source water protection area, by calling the Waterworks Consumer Affairs Department at [phone number] or access it on the Internet at [Internet address].</p> |
| <p><i>Surface water</i></p> <ul style="list-style-type: none"> ▶ <i>Source water assessment not available</i> | <p>Our water is taken from the Grubstake river near Spitfire Junction. We collect water in the McErtel reservoir (Please see the map) and then pipe it to the treatment plant just northwest of town. We restrict access to the reservoir to protect our water from contamination. We are working with the State drinking water program to identify what other kinds of pollution our water supply could be vulnerable to. We will report the results of the source water assessment to you in this report next year. Our Utility is a major sponsor of the Grubstake Watershed Coalition. Please call us at [phone number] to find out how you can get involved.</p> |

Table I-2: CCR Examples - Source Water Information

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| <p><i>Surface Water</i></p> <ul style="list-style-type: none"> ▶ <i>Source water assessment available</i> ▶ <i>Cryptosporidium detected</i> | <p>Our utility serves you treated surface water which is taken from the Grubstake river near Spitfire Junction. We collect it in the McErtel Reservoir and then pipe it to the treatment plant just northwest of town. The State drinking water program through a source water assessment report has found that our drinking water is potentially most susceptible to farm runoff as well as three underground storage tanks in Spitfire county. However, we have not detected any contaminants from these sources in our drinking water. You can get a copy of the source water assessment by calling the state drinking water program at [phone number].</p> <p>In December of 1998, we voluntarily monitored for <i>Cryptosporidium</i>, a microbial parasite commonly found in surface water, and found some evidence of these microbes in the raw, but not the finished water. Current test methods do not enable us to determine if these organisms are capable of causing disease. We are not aware of a specific source of <i>Cryptosporidium</i>. <i>Cryptosporidium</i> may come from wildlife or cattle grazing near the reservoir. <i>Cryptosporidium</i> must be ingested for it to cause disease, and may be passed through other means than drinking water. Symptoms of infection include nausea, diarrhea, and abdominal cramps. These symptoms can also be the result of food related organisms or flu or ingesting untreated water. Most healthy individuals are able to overcome the disease within a few weeks. However, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people living with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by <i>Cryptosporidium</i> and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).</p> |
| <p><i>Surface water</i></p> <ul style="list-style-type: none"> ▶ <i>Source water assessment available</i> ▶ <i>Cryptosporidium not detected</i> | <p>Our utility serves you treated surface water which is taken from the Grubstake river near Spitfire Junction. We collect it in the McErtel Reservoir and then pipe it to the treatment plant just northwest of town. The State drinking water program has found that our drinking water is potentially most susceptible to farm runoff and three underground storage tanks in Spitfire county. However, we have not detected any contaminants from these sources in our drinking water. You can get a copy of this state information by calling the state drinking water program at [phone number].</p> |
| <p><i>Surface Water</i></p> <ul style="list-style-type: none"> ▶ <i>Source water assessment not available</i> ▶ <i>Known potential source of contamination</i> | <p>Your water is taken from the Grubstake river near Spitfire Junction. The Grubstake river is part of the Fuller Watershed. We collect the water in the McErtel Reservoir and then pipe it to the treatment plant just northwest of town. We have established an emergency plan to deal with the potential of industrial accidents contaminating our source. We have worked with the Spitfire Finishing Plant to minimize the likelihood of contamination. The State Drinking Water program is doing source water assessments for all communities and should have results for our community available by January 2001. Please call us at [phone number] if you would like more information about this assessment.</p> |

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