

Instructions for Completing the PCI Risk-Ranking Matrix:

Column A - Enter the name of the contaminant and its source from Worksheet 14

Column B - Rank each contaminant as High, Medium, or Low. High-ranked contaminants are chemicals such as carcinogens, and chemicals or biological contaminants for which maximum contaminant levels (MCLs) have been established. Moderate-ranked contaminants are those that may cause health-related disorders, but are not as toxic as high-ranked contaminants. Low-ranked contaminants are those that do not produce systemic health effects. Rankings should consider both the toxicity of the contaminant and the quantity present at the source site. Thus, even a small amount of a highly toxic contaminant such as arsenic may warrant a high ranking.

Column C - Sources located inside a delineated area are given a higher weight because distance from the wellhead or intake structure tends to reduce the concentration of contaminants.

Column D - Natural barriers are features such as subsurface clay layers that tend to block or slow down the movement of contaminants toward a drinking water source. The presence of these barriers can reduce the potential for contamination by reducing the concentration of a contaminant or neutralizing it through natural processes. Porous soils or karst aquifers tend to have low natural barrier effectiveness. Aquifers overlaid with clay layers, or surface water bodies surrounded by thick vegetation, tend to have higher natural barrier effectiveness. If you are unsure how to rank your water source, select moderate.

Column E - For surface water systems, this column includes conveyances (open canals or aqueducts), intake pumps, and distribution systems. Intake structures and distribution systems with cracks or leaks can allow contaminants to enter the system. For purposes of this matrix, intake structures more than 10 years old are presumed to be less well protected against contaminants than are structures less than 10 years old. A thorough inspection and testing of the intake structure and distribution system will identify areas where improvements may be needed to strengthen system integrity.

Column F - For groundwater systems, this column includes the wellhead apparatus and distribution piping. Faulty casing, cracks in sanitary seals, or loose pipe joints could allow contaminants to enter a well or distribution system. Well inspection and maintenance records, if available, can provide useful information for completing this column. Also, a visual inspection of each wellhead should be made to ensure that surface water drains away from the wellhead and the sanitary seal is intact.

Column G - The history of contamination detection at a water source can be an indication of its susceptibility. This column assigns a weighting if a contaminant has been detected in the water source before this assessment.

Column H - Totaling all the numbers across the matrix yields an approximation of how serious a risk each potential contaminant source poses to your drinking water supply. The totals can be used to rank the potential contaminant sources so they can be addressed during the protection phase in some kind of priority order. The higher the number in Column H, the more likely the drinking water source is to be susceptible to that contaminant source.

The ranking that results from using the matrix need not dictate which sources are addressed first in the protection phase, or what actions are taken. Rather, it is the starting point for further evaluation and discussion. Deciding which potential contaminant sources to address in the protection phase will depend on Tribal priorities, resources, and input from the community.

Water Education Foundation, 2000
Sacramento, CA
<http://www.watereducation.org/doc.asp?id=1061>