

Protecting Public Health by Assuring Safe Drinking Water

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2002 REPORT ON OREGON PUBLIC DRINKING WATER

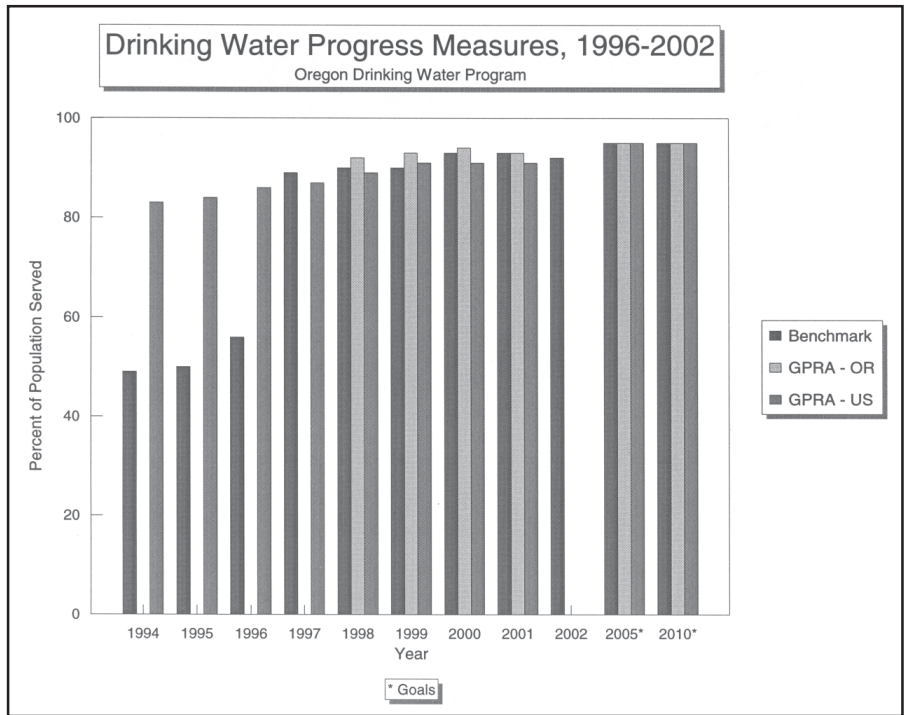
2002 was a year of continued progress by Oregon public water suppliers and the Oregon Drinking Water Program. This edition of the PIPELINE is in two parts. The first part (below) is a recap of 2002 accomplishments and an analysis of trends from 1996 to 2002. The second part is the full text of the 2002 Oregon Annual Compliance Report, beginning on page 7. Previous Oregon ACRs can be found on the Drinking Water Home Page.

by Dave Leland, Manager, Drinking Water Program

During 2002, Oregon water suppliers continued their work to meet EPA drinking water standards. The Department continued its oversight of public water systems, and continued to implement the variety of program initiatives under the 1996 federal Safe Drinking Water Act (SDWA).

Sixteen communities, serving a total of nearly 68,000 people, completed improvements to their drinking water systems during 2002 in order to meet the drinking water standards (see table 4, page 14). These included projects to improve treatment for surface water supplies, to meet action levels for lead and copper at customer taps, and to consolidate multiple water systems. Each represented the culmination of long-term commitment and effort by the local community to ensure safe drinking water for their users. 92% of Oregonians were served drinking water by public water systems that continuously met all health-based standards during the year (Oregon Drinking Water Benchmark). The goal is to reach 95% by 2005, and to maintain that level through 2010, as new EPA standards are adopted and implemented.

The Department continued efforts in 2002 to oversee and assist communities under the 1996 federal Safe



Drinking Water Act. The effort involved the Department drinking water program, contract county health departments, the Drinking Water Advisory Committee, partner agencies, and contractors. With the assistance of the Drinking Water Advisory Committee, the Oregon Economic and Community Development

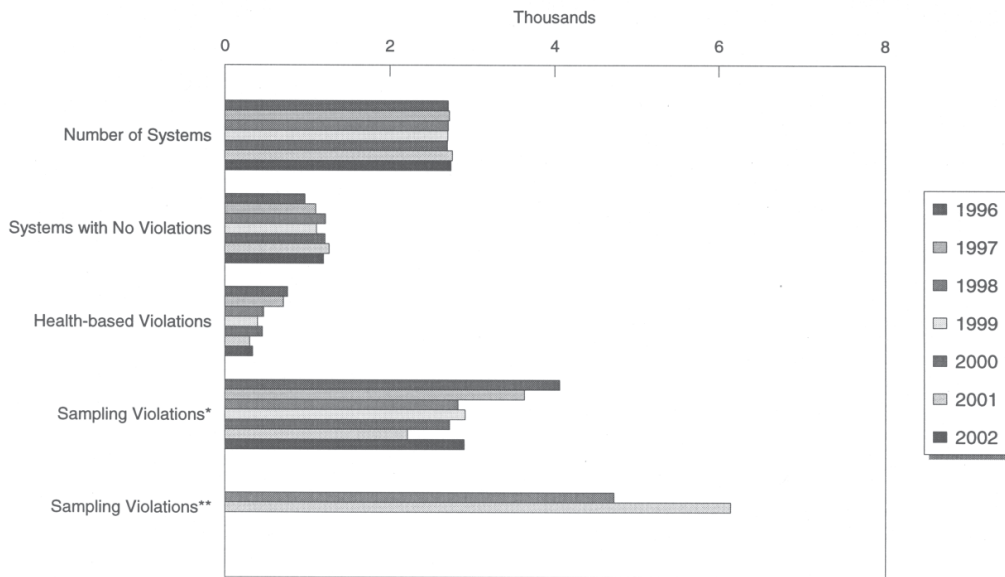
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Oregon Drinking Water Program



*Microbials-coliform & SWTR, nitrate, lead/copper, TTHMs **13 inorganic, 53 organic chemicals

2002 REPORT ON OREGON'S DRINKING WATER *(continued from page 1)*

Department, and the Department of Environmental Quality, the Department received the sixth annual State Drinking Water Revolving Loan Fund capitalization grant from EPA. This brings the total federal funding available for safe drinking water projects and program initiatives in Oregon to \$80M through the end of 2002. \$74M was loaned for 45 community safe drinking water construction projects. The Department also applied for the seventh capitalization grant.

The Department and its partners continued to assist communities in providing safe drinking water using set-aside resources of the revolving loan fund. Local health departments and the Department of Agriculture expanded their programs to oversee small water systems. The Department negotiated with USEPA to obtain additional time and funding to complete source water assessments for all Oregon public water systems by July, 2005. The Department also continued to certify operators of very small public water systems using groundwater sources. 593 of these

operators were certified, compared to the 850 small groundwater water systems for which certified operators are required. The Department completed application for USEPA operator certification funds, which will be used to develop and deliver specific and focused training statewide for small groundwater system operators. Department staff began to implement the "Oregon Capacity Strategy" to improve the technical, managerial, and financial capacity needed by public water suppliers to provide safe drinking water now and in the future. Two technical assistance contractors assisted small water systems statewide with short-term operational problems.

Department staff kept up with the highest priority ongoing responsibilities, following program priorities revised and established during 2002 in collaboration with the Drinking Water Advisory Committee. Department and county staff investigated and responded to water quality problems and recurring water sampling failures at public systems, and conducted as many on-site inspections of water systems as possible. The Department resolved 277 previously issued enforcement actions, and initiated ten new actions. The Department implemented a new EPA-designed database to manage public water system water quality data. This effort expanded the Department's capability to identify all types of regulatory violations, and to more completely and accurately track and report water system compliance status. The Department updated and improved Internet access to water system water quality information. The site, established in 1999, continued to be widely used by water suppliers, laboratories, and the public. The Department tracked, reviewed, and commented on new EPA drinking water rules under development at the national level. 723 communities completed and submitted their third

annual Consumer Confidence Report, as per EPA requirements.

Measuring Progress, 1994-2002

Compliance data for 2002 showed a small overall increase in noncompliance, particularly with respect to monitoring and reporting requirements, after several years of steady improvement. Possible reasons for this include 1) implementation of the new drinking water database system, which identifies all types of violations, 2) new EPA drinking water standards, 3) implementation of current EPA standards at smaller water systems, and 4) lack of attention to water sampling and reporting by some water suppliers.

Oregon Safe Drinking Water Benchmark. This Benchmark measures progress of public water suppliers toward meeting safe drinking water standards in Oregon:

“The percentage of Oregonians served by public drinking water systems that meet all health-based standards continuously during the year.”

Meeting all health-based standards at all times during the year is an important indicator of drinking water safety. The benchmark presumes that all required water sampling and reporting is carried out, and Oregon water suppliers need to improve in this area. The benchmark includes the following health-based standards, listed from highest to lowest health risk:

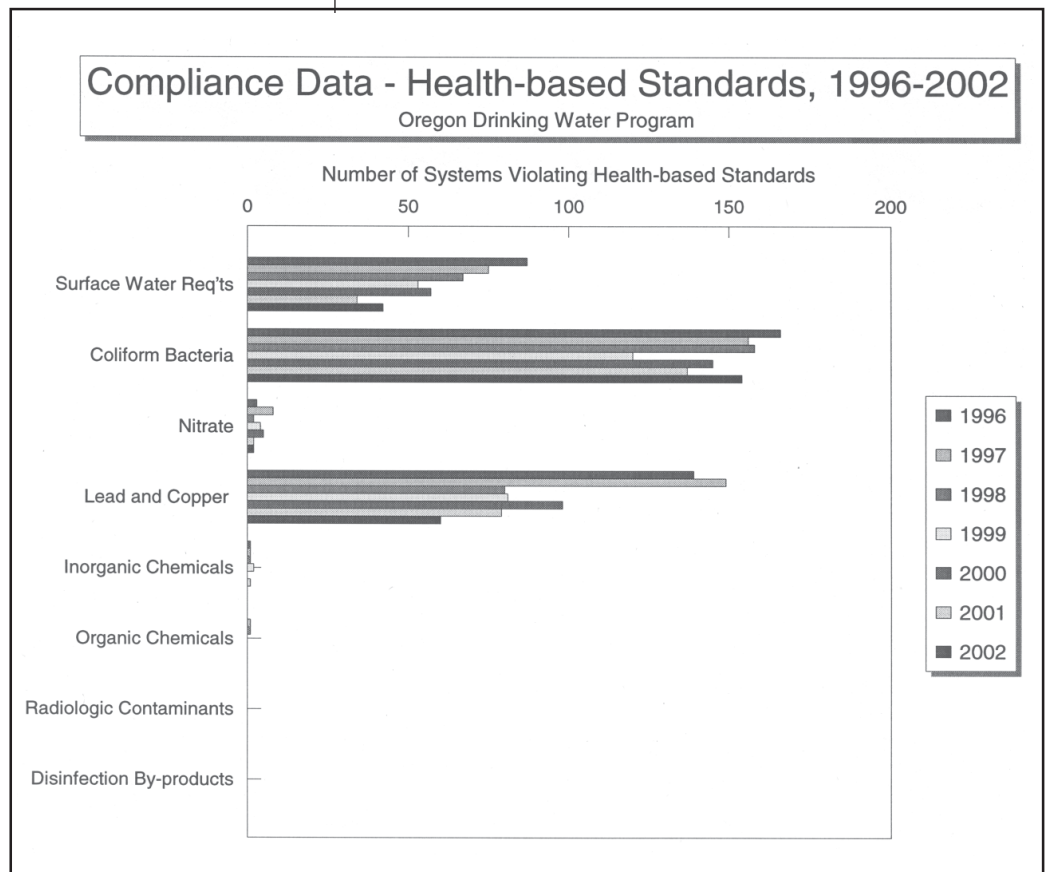
- E. Coli (or fecal coliform) bacteria maximum level
- Surface water treatment performance levels (filtration and disinfection)

- Nitrate/Nitrite maximum levels
- Chemical/Radiological maximum levels
- Lead action level
- Total coliform bacteria maximum level
- Copper action level

Included in the benchmark are about 1,300 public water systems that serve the majority of the state population, including all community systems, all nontransient noncommunity systems, and the larger transient noncommunity systems (serving over 500 people per day).

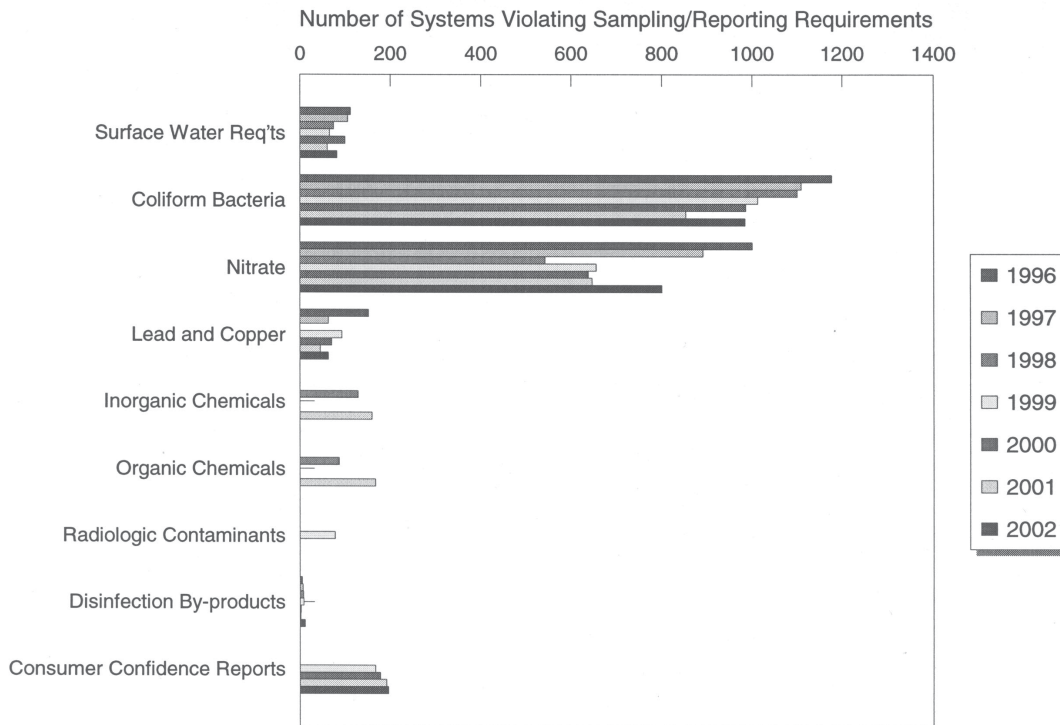
In 2002, the benchmark was 92%, compared to 93% in 2001. The benchmark goal is to reach 95% by 2005, and to maintain this level while implementing new EPA drinking water standards from 2005 through 2010. Results for previous years are summarized in the first chart (page 1), showing significant improvement from 1994-2002.

EPA GPRA Goal. USEPA established a similar performance-based measure for drinking water under the Government Performance and Results Act



Compliance Data - Sampling/Reporting. 1996-2002

Oregon Drinking Water Program



water is inadequately treated.
 2) Sampling/reporting violations - instances where the water supplier fails to collect or report results of required water samples for one or more contaminants prior to the reporting deadline.

Summary statistics for 1996-2002 are shown in the charts that accompany this article. The second chart (page 2) shows a summary by year of the number of regulated public water systems (under EPA requirements), the total number of water

(GPRA) of 1993. This goal is:

By 2005, protect human health so that 95% of the population served by community water systems receives water that meets health-based drinking water standards...

In 1994, the GPRA baseline for the U.S. was 83%. In 2001, the measure for the U.S. improved to 91%. Oregon achieved 93% in 2000, and GPRA figures for 2002 are not yet available. (See first chart page 1).

Regulatory Compliance Trends in Oregon, 1996-2002. The federal Safe Drinking Water Act requires the drinking water program to prepare and publish an Annual Compliance Report (ACR) on Oregon public water systems. See the full text of the 2002 ACR in this issue (page 7). This is the seventh Oregon ACR. Below, we offer our observations and conclusions about trends in drinking water safety and regulatory compliance over the past seven years.

Two kinds of violations are summarized here:

1) Health-based violations - instances where a water supply system distributes water with a concentration of a contaminant above allowable levels, or where the

total number of water systems with NO identified violations, the total number of health-based violations, and the total number of sampling/reporting violations. The total number of regulated systems remained nearly unchanged over the past five years (2,740 in 2002). 1,192 systems generated no significant violations at all in 2002.

The number of health based violations declined overall from 1996-2002. This is the result of improvements in recent years in water system facilities, such as water treatment plants, and improvements in water system operations. A slight increase in violations is evident from 2001-2002.

Complete monitoring is essential to detect water quality problems and assure water safety. About 90% of violations overall are for sampling/reporting. A decline in sampling/reporting violations for frequently tested contaminants occurred from 1996 to 2001 (microbials: coliform and surface water treatment, nitrate), with some increase evident in 2002. The increase may be due, in part, to Department implementation of the USEPA compliance database. The new database identifies more types of violations, especially for sampling and reporting. Note that sampling and

reporting requirements for most inorganic and organic chemical contaminants is on a three-year cycle. The latest cycle ended in 2001, so additional data will be available next in 2004. Note that failure to report these results on time can result in as many as 64 violations per water system, one for each of the regulated contaminants in these groups.

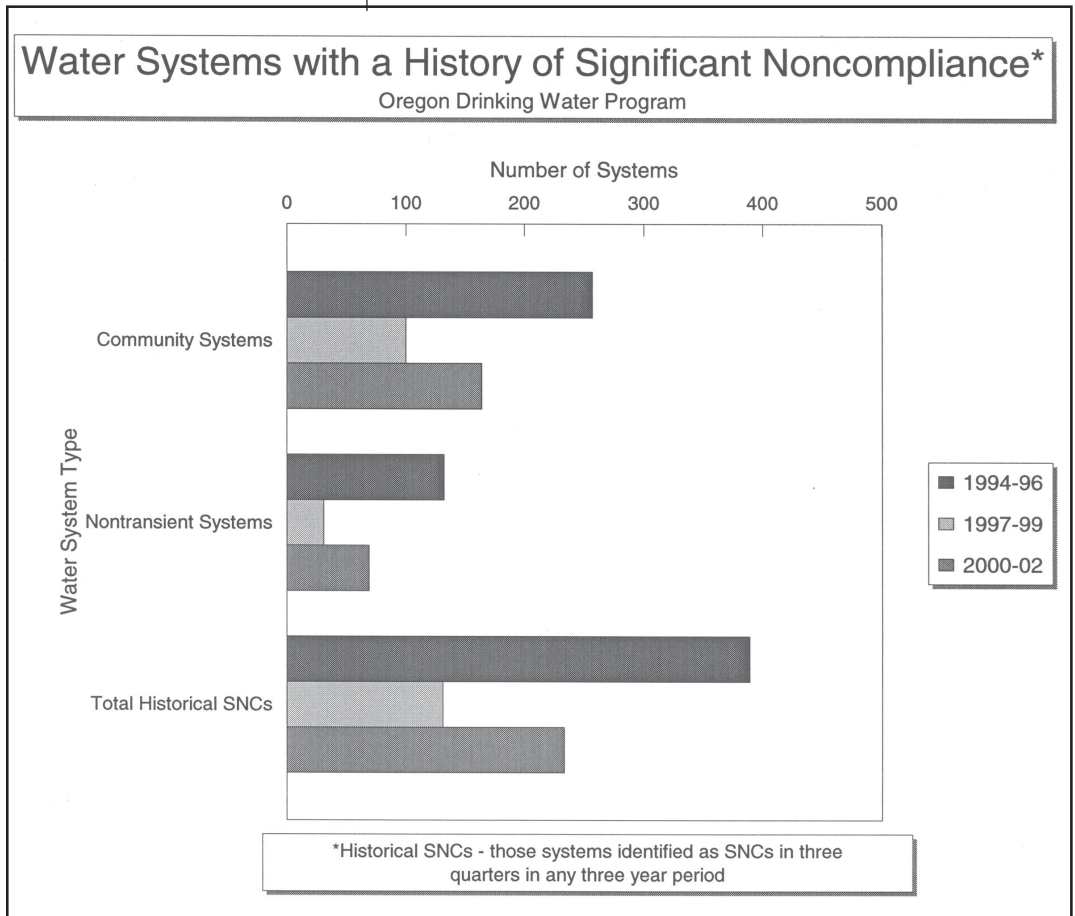
The third chart (page 3) summarizes statistics on the number of water systems that violated health-based standards. Most systems in violation are for microbial contaminants (coliform bacteria and surface water treatment), and for lead and copper. Department and county staff focused attention in the field to water systems that violated coliform bacteria standards and surface water treatment requirements, because these could result in acute waterborne disease. A decline in the number of systems violating surface water treatment requirements is evident, until 2002. In 2002, the department identified wells at seven water systems that draw water that is influenced directly by nearby surface water bodies, and must now meet surface water treatment requirements. In addition, new EPA standards for surface water treatment took effect in 2002 for large water systems. Only seven water systems with open surface water intakes remain unfiltered of 165 originally identified as requiring filtration treatment (1992).

The number of systems violating lead and/or copper action levels was fairly constant in 1998-2001 while impacted water systems installed needed corrosion control treatment. Corrosion control treatment was successful in reducing lead and copper at customer taps for many communities, and an improvement in meeting lead and copper action levels is evident in 2002.

Very few water systems violate health-based standards for nitrate, inorganic chemicals, and organic chemicals.

The fourth chart (page 4) summarizes the number of water systems that violate sampling/reporting requirements. Overall declines in the number of systems in violation are evident from 1996 to 2002 for microbials, nitrate, and lead/copper, the result of oversight by state and county staff and improved attention by water suppliers. Although most test results were reported overall, the remaining number of individual sampling violations and the number of water systems that account for them still appear large. Failure by water suppliers to fully monitor and report on water quality undermines the credibility of public water suppliers and public confidence in the safety of drinking water.

Water Systems with a History of Significant Non-compliance. EPA is required by the Safe Drinking Water Act to identify water systems with a history of significant noncompliance in each state every three years. These include community and nontransient



noncommunity water systems that commit sufficient multiple violations to be characterized as “significant noncompliers” (SNCs) in at least three calendar quarters in each three-year period. These are the water systems with the worst compliance histories. The fifth chart (page 5) compares the results for the three-year time periods from 1994-2002. EPA generated the first listing in 1997, for 1994-96, and the second listing in 2000, for the time period of 1997-99. A large decline in the numbers of systems with very poor compliance records is evident. The increase in poor performers in the third listing (2000-02) compared to the second listing may be due in part to more complete compliance determination and violation reporting by the Department in recent years.

Conclusion

Public water suppliers, the Department drinking water program, county health departments, partner agencies, and organizations continued efforts to assure safe drinking water in Oregon. Progress depends on the integrated application of the many program elements, each targeted to meet specific water system needs:

- Regulatory information, advice and assistance
- Investigations of contaminant occurrence
- Sanitary surveys of water systems
- Training and certification of operators
- Review and approval of plans and specifications for construction projects
- Operational technical assistance
- Safe Drinking Water loan fund
- Source water assessment and protection
- Public information
- Enforcement

Work remaining for public water suppliers for 2003 and beyond will continue to focus on improving drinking water quality at specific water systems, primarily completing filtration treatment installations and improvements for surface water sources, and completing corrosion treatment installation to control lead and copper levels at the tap. In addition, overall sampling and reporting by public water suppliers must improve. Drinking water safety cannot be demonstrated or assured unless water suppliers fully test their water as required and report test results promptly.

Work remaining for the Department and its partners include continuing the oversight of water suppliers and their compliance to standards, completing sanitary surveys and promoting correction of identified deficiencies, installing the next version of the EPA drinking water information system, completing assessments of public drinking water sources, improving the technical/financial/managerial capabilities of water suppliers, and training and certifying operators of very small water systems. The Department must complete as much of this work as possible before new EPA standards directly impact Oregon water systems in 2004-10.

During the 2001 Legislative Assembly, the Department’s capacity to effectively carry out the implementation of federal drinking water regulations and oversee public water systems in Oregon was called into question. An Oregon Secretary of State audit report found that the Department did not always carry out all of its assigned responsibilities, and EPA Region X expressed concerns about the Department’s capacity to carry out current and anticipated future federal requirements. In 2003, the Department and Oregon water supplier organizations agreed to meet as a Task Force and report back to the Legislature on “the workload of the Department in effectively administering the federal Safe Drinking Water Act”, and “the funding sources and amounts of moneys needed by the Department to carry out the effective administration of the federal Safe Drinking Water Act”. Adequate resources are critical so that the Department can achieve its mission to assure safe drinking water, operate a credible and effective oversight program, and continue to meet EPA requirements for Primacy in Oregon.

Charts:

- ✓ Drinking Water Progress Measures
- ✓ Summary Compliance Data
- ✓ Compliance Data - Health Based Standards
- ✓ Compliance Data - Sampling/Reporting
- ✓ Water Systems with a History of Significant Noncompliance

2002 ANNUAL COMPLIANCE REPORT ON OREGON PUBLIC DRINKING WATER SYSTEMS

Under the 1996 Safe Drinking Water Act, each state is required to prepare annual reports on violations of national primary drinking water regulations by public water systems in the state. States are required to provide the annual reports to the USEPA, publish and distribute summary reports, and make the full reports available to the public. In addition to satisfying the legal requirement under the Safe Drinking Water Act, the annual compliance report provides an opportunity to review the status of public drinking water safety in Oregon. This is the seventh annual report and presents compliance data on Oregon public water systems for the calendar year 2002.

Drinking Water Standards

A brief overview of the public drinking water regulatory program is useful. In Oregon, public drinking water systems are subject to the Oregon Drinking Water Quality Act (ORS 448 - Water Systems) and the federal Safe Drinking Water Act. The primary purpose of the Oregon Act is to assure all Oregonians safe drinking water. According to the Oregon Act, safe drinking water means water, which is sufficiently free from biological, chemical, radiological, or physical impurities such that individuals will not be exposed to disease or harmful physiological effects. Under the Oregon Act, the Department of Human Services has broad authority to set water quality standards necessary to protect public health through insuring safe drinking water within a public water system. To accomplish this, the Department is directed under the Act to require regular water sampling by water suppliers. These samples must be analyzed in laboratories approved by the Department, and the water supplier to the Department must report the results of laboratory tests on those samples. The Department must investigate water systems that fail to submit samples, or whose sample results indicate levels of contaminants that are above maximum allowable levels. Water suppliers who fail to sample the water or report the results, or whose water contains contaminants in excess of allowable levels must take corrective action and notify water users.

Since 1986, the Department has exercised primary responsibility for administering the federal Safe Drinking Water Act in Oregon, an arrangement called Primacy. The Department adopts and enforces standards that are no less stringent than the federal standards, and in return, the US Environmental Protection Agency gives the Department the regulatory responsibility for public drinking water systems and partial financial support for the Oregon program operation.

In practice, the Oregon drinking water standards match the national standards established under the Safe Drinking Water Act by the USEPA. This is because setting maximum levels for drinking water contaminants to protect human health involves considerable development of health effects information and other scientific research that is best carried out at the national level. The Department concentrates its available efforts and resources on implementing the national standards at Oregon public water systems.

Drinking water quality standards consist of two parts; a maximum allowable level for each contaminant (called a Maximum Contaminant Level, or MCL) and a sampling and reporting frequency. For contaminants that can not be readily detected or measured in water, the standard may be a treatment technique requirement, which means that in place of regular water sampling and reporting, all water systems at risk of the contaminant are required to provide water treatment processes to remove the contaminant at all times. A full description of the current drinking water standards was published previously (PIPELINE, Fall 2002).

Sampling frequencies vary by the type of drinking water contaminant. Contaminants that are associated with immediate health impacts, like bacteria and nitrates, must be sampled often, such as every month, quarter, or year. Contaminants associated with health effects that could develop from very long-term exposures, like arsenic, are tested less frequently, such as every 3 or 4 years.

Oregon Public Water Systems

In 2002, there were 2,740 public water systems in Oregon subject to regulation under the federal Safe Drinking Water Act. Of these, 895 are community water systems, which means the systems serve at least 15 connections used by year-round residents. These systems perform the most frequent water sampling for the greatest number of contaminants, because the people served have the most ongoing exposure to the drinking water. **Community water systems** in Oregon serve a total of just over 2.8 million people and range in size from 15-home subdivisions and mobile home parks up to and including the City of Portland. **Nontransient noncommunity water systems** serve nonresidential populations consisting of the same people every day, such as a school or workplace with its own independent water supply system. There are 347 of these in Oregon. **Transient noncommunity water systems** serve transient populations. Examples are campgrounds, parks, or restaurants with their own independent water supply systems, and there are 1,498 of these in Oregon.

Oregon public water systems get their water either from wells or springs (called groundwater) or from rivers, lakes, or streams (called surface water). Of the 2,740 total public water systems in Oregon, 2,426 get their water exclusively from groundwater. 314 water systems get their water in whole or in part from surface water supplies. Generally speaking, surface water requires much more treatment and processing to ensure safety for drinking than does groundwater.

There are many small water systems in Oregon. About 87% of the public water systems in Oregon serve 500 or fewer people each.

An additional 952 very small systems are subject only to the Oregon Act, and are too small to fall under federal drinking water regulations. These water systems supply 4-14 connections or 10-24 people each. These water systems serve nearly 16,000 people in Oregon. By comparison, about 400,000 Oregonians get their drinking water from individual home wells, which are not subject to public water system standards or rules.

Compliance Results for 2002

There are now drinking water quality standards for 95 different contaminants. Most have established maximum levels and sampling requirements. Others have treatment technique requirements. A complete description of the drinking water standards is given in the fall, 2002 Special Edition of the PIPELINE newsletter, available from the Department or our web site. Drinking water contaminants can be grouped into the following general categories:

- Microbial Contaminants - such as viruses, bacteria, and parasites which can come from sewage treatment plants, septic systems, agricultural and livestock operations, and wildlife.
- Disinfectants and Disinfection By-Products - chemical disinfectants used in water treatment to kill harmful microbes, and the chemical by-products formed from the reaction of disinfection treatment chemicals with natural substances in the water.
- Inorganic Chemicals - such as salts or metals, which can be naturally occurring or can result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Includes lead and copper leached into the water from household plumbing and fixtures.
- Organic Chemicals - Pesticides and herbicides, which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses. Also includes synthetic and volatile chemicals, which are used in industrial processes and petroleum production and can come from gas stations, urban storm water runoff, and septic systems.
- Radiologic Contaminants - Naturally occurring or resulting from oil and gas production or mining operations.

Compliance statistics cited here DO NOT include the very small public water systems not subject to EPA standards, or individual home wells.

1,192 public water systems achieved full compliance with all standards and sampling requirements during 2002, as shown in the table below:

Population Size Range	Total Number of Water Systems	Number of Water Systems With No Violations in 2002
500 or Less	2,377	1,005
501 – 3,300	257	126
3,301 – 10,000	51	29
10,001 – 100,000	51	28
More than 100,000	4	4
Total	2,740	1,192

The attached tables present summaries of the violations of maximum levels, treatment requirements, and sampling and reporting requirements for categories of contaminants. Table 1 (page 10) shows the number of public water systems that experienced significant violations of requirements during 2002, and the total numbers of violations that occurred. Tables 2 and 3 (pages 12 and 13) show this information, organized by size ranges of populations served. Note that totals presented on Table 2 have been adjusted to avoid double-counting water systems that violate multiple requirements.

1,548 of the public water systems generated 3,487 violations of maximum levels and sampling requirements. This means that some water systems violated requirements on multiple occasions or violated requirements for multiple contaminants. 10% of the violations are for maximum levels, action levels, or treatment requirements, and 90% of violations overall are for failure to sample and report results. Violation of maximum levels, action levels, or treatment requirements mean that there were actual or possible exposures of people to drinking water contaminants. Violation of sampling requirements means that a water system did not sample for contaminants or did not report the test results for certain contaminants on time. A significant sampling violation means that no water sample results were reported for a particular reporting period. Since most Oregon water systems are small, most violations occurred at small water systems. Lists of water suppliers that violated maximum levels, action levels, or treatment requirements during 2002 are available from the Department, and can be viewed on our drinking water web page.

The groups of contaminants are discussed individually below.

Microbials (Coliform Bacteria). All 2,740 public water systems must sample routinely for coliform bacteria. Coliform bacteria in drinking water are not usually harmful in themselves, but they signal the possible presence of harmful microorganisms. Small systems are required to sample at least once per month or quarter, while very large water systems must collect up to a hundred or more samples per month. The Department received 58,000 individual coliform bacteria test results in 2002.

154 water systems found and confirmed coliform bacteria in their water and took corrective action. 23 of these water systems found fecal coliform in the drinking water and people were advised to boil their drinking water until the cause of the contamination could be found and corrected. The Department expends considerable effort working with systems to prevent and correct these types of water problems because they represent a significant and immediate potential risk to health.

Most of the microbial violations were for failure to monitor and report results. 984 water systems failed to submit coliform samples for at least one month or quarter during the year. These systems had 1,703 routine monitoring violations, so some systems failed to submit sample results more than once during the year. 112 water systems failed to report the results of repeat samples required following positive routine samples. 102 of these systems are very small, serving 500 or less people.

Microbials (Surface Water Treatment). Standards require that most water systems that draw water from lakes, rivers, and streams continually treat the water by filtration and disinfection to remove or kill microorganisms like bacteria, viruses, and protozoans that can cause waterborne disease outbreaks. The last recognized waterborne disease outbreak in a community water system in Oregon occurred in the City of Talent in 1992 (cryptosporidiosis). Surface water treatment standards are established to assure that the proper level of treatment is practiced at all times. In Oregon, seven water systems remain that do not have

Table 1 - Oregon Violation Summary - 2002

	Number of Violations	Number of Water Systems in Violation
Microbials – Coliform:		
Fecal Coliform/E. coli present	24	23
Total Coliform maximum level	201	154
Significant sampling violations	1,703	984
Microbials – Surface water treatment:		
Filtration treatment violations	54	27
Significant sampling violations	192	82
Unfiltered – Required to filter	15	15
Lead and Copper:		
Failed to conduct initial sampling	43	38
Failed to conduct follow-up & Routine sampling	25	25
Failed to install treatment	61	60
Failed to conduct public education	24	24
Chemicals:		
Arsenic maximum level	0	0
Nitrate maximum level	2	2
Nitrate sampling	934	800
Inorganic chemical sampling (99-01)*	N.A.	N.A.
Organic chemical sampling (99-01)*	N.A.	N.A.
Radiological sampling (00-03)**	N.A.	N.A.
Trihalomethane sampling	14	11
Consumer Confidence Reports:		
Failed to submit report in calendar year 2001	195	195
Total	3,487	1,548***
<p>* Sampling is required once during each 3-year period. Test results for the current 3-year period are due by the end of 2004. Violations for the prior compliance period were reported in the 2001 Annual Compliance Report.</p> <p>** Sampling is required during each 4-year period, tests are due by the end of 2003.</p> <p>*** Number adjusted to avoid double-counting water systems with violations of multiple contaminant and monitoring standards.</p>		

filtration treatment and must install it. This is down from 165 systems in 1992. These remaining unfiltered systems are on administrative orders from the Department to install treatment, and work is continuing on those systems. In 2000, one system was identified using an unfiltered surface water source, and in 2001 an additional seven systems were determined to have groundwater sources under the influence of surface water. These water suppliers now have administrative orders to install treatment. Of the systems with filtration treatment, 27 failed to meet treatment level requirements on at least one occasion during 2002. The Department worked with those systems to help them improve their operation, their facilities, or both. 82 water systems failed to report treatment performance data on at least one occasion.

Disinfectants and Disinfection By-products. In 2002, 11 water systems serving more than 10,000 people each failed to report total trihalomethanes as required on at least one occasion.

Inorganic Chemicals. Nitrate maximum levels were violated by 2 water systems in Oregon during 2002. Due to the high degree of hazard to children, these systems were modified or are under order to correct the problem. 800 water systems failed to report nitrate results in 2002. At the end of 2002, 60 systems that had exceeded the action levels for lead and/or copper at plumbing taps had not yet installed corrosion control treatment. 38 systems had not yet completed initial lead/copper monitoring and 25 systems did not complete follow up sampling once corrosion control treatment had been installed.

Water systems in Oregon rarely violate maximum levels for inorganic contaminants from source waters, but these contaminants are routinely detected in drinking water systems at levels more than one-half the maximum level. The most-detected inorganics (and number of water systems with detections over one-half the maximum level from January 1, 1989 to December 31, 2002) are nitrate (405), arsenic (92), nitrate/nitrite (33), cadmium (30), and mercury (34). Fact sheets for many of these contaminants are available either from the Department, the drinking water web page, or through web page links with other agencies or organizations.

Organic Chemicals. The third round of testing for 53 organic chemicals was completed during 1999-2001. 1,242 water systems must conduct this testing every three years. The current 3-year monitoring period ends December 2004.

Again, Oregon water systems rarely violate maximum levels for organic chemicals. The contaminants detected in past monitoring data (and number of water systems with detections from January 1, 1989 to December 31, 2002), include tetrachloroethylene (66), toluene (67), 1,1,1 trichloroethane (35), total xylenes (42), methylene chloride (Dichloromethane) (34), and trichloroethylene (27). Pesticides have been detected much less often - 2,4-D (7), atrazine (6), and ethylene dibromide (4). Again, the vast majority of detections are at levels well below maximum allowable levels. In practice, many water suppliers that confirm the presence of even low levels of organic chemicals either abandon, reconstruct, or replace contaminated wells or install treatment to eliminate these contaminants from the water supply.

Radiological Contaminants. No violations of standards occurred during the report period. Naturally occurring radiological contaminants are detected in Oregon water systems, but at very low natural background levels. Routine monitoring is on a 4-year cycle.

Consumer Notification. All community water systems are required to provide customers with an annual water quality report, which includes information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations. 195 community water systems failed to provide documentation that this report had been made to their customers for the calendar year 2001.

Water System Improvements

Sixteen public water systems completed substantial improvements to meet drinking water standards during 2002 (See Table 4 page 14).

Table 2 - Number of Public Water Systems in Violation by Population Category - 2002

	Population Groups					Totals
	Under 501	501 – 3300	3301 – 10,000	10,001 – 100k	Over 100,000	
Chemicals						
Nitrate MCL	2	-	-	-	-	2
Arsenic MCL	-	-	-	-	-	-
Nitrate Monitoring	723	65	8	4	-	800
Inorganics Monitoring	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Organics Monitoring	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
TTHM Monitoring	-	-	-	11	-	11
Coliform*						
Acute MCL	21	2	-	-	-	23
Total MCL	140	10	3	1	-	154
No Routines	819	48	3	2	-	872
No Repeats	102	7	1	2	-	112
Surface Water Treatment						
Required to Filter	7	4	2	2	-	15
Monitoring/Reporting	51	21	5	5	-	82
Treatment Failure	16	5	4	2	-	27
Lead/Copper						
Corrosion Control	44	15	1	-	-	60
Initial Tap Sampling	38	-	-	-	-	38
Follow-up Sampling	19	4	1	1	-	25
Public Education	23	1	-	-	-	24
Consumer Confidence Reports						
No Reports for 2001	172	16	5	2	-	195
Systems with Violations**						
Population Served	1,372	131	22	23	-	1,548
Population Served	158,129	168,641	130,555	523,460	-	980,785
Systems without Violations						
Population Served	1,005	126	29	28	4	1,192
Population Served	124,178	168,793	151,393	782,932	945,000	2,172,305
All Public Water Systems						
Population Served	2,377	257	51	51	4	2,740
Population Served	282,316	337,434	281,948	1,306,392	945,000	3,153,090

* Minor monitoring and reporting violations were excluded.
 ** Number adjusted to avoid double-counting water systems with violations of multiple contaminant and monitoring standards.

Table 3 - Number of Violations by Population Category - 2002

	Population Groups					Totals
	Under 501	501 – 3300	3301 – 10,000	10,001 – 100k	Over 100,000	
Chemicals						
Nitrate MCL	2	-	-	-	-	2
Arsenic MCL	-	-	-	-	-	-
Nitrate Monitoring	830	82	17	5	-	934
Inorganics Monitoring	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Organics Monitoring	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
TTHM Monitoring	-	-	-	14	-	14
Coliform*						
Acute MCL	22	2	-	-	-	24
Total MCL	179	16	5	1	-	201
No Routines	1,492	69	3	2	-	1,566
No Repeats	126	8	1	2	-	137
Surface Water Treatment						
Required to Filter	7	4	2	2	-	15
Monitoring/Reporting	145	31	7	9	-	192
Treatment Failure	27	11	14	2	-	54
Lead/Copper						
Corrosion Control	45	15	1	-	-	61
Initial Tap Sampling	43	-	-	-	-	43
Follow-up Sampling	19	4	1	1	-	25
Public Education	23	1	-	-	-	24
Consumer Confidence Reports						
No Reports for 2001	172	16	5	2	-	195
Total Number of Violations	3,132	259	56	40	-	3,487
Systems with Violations**						
Population Served	1,372	131	22	23	-	1,548
Population Served	158,129	168,641	130,555	523,460	-	980,785
Systems without Violations						
Population Served	1,005	126	29	28	4	1,192
Population Served	124,178	168,793	151,393	782,932	945,000	2,172,305
All Public Water Systems						
Population Served	2,377	257	51	51	4	2,740
Population Served	282,316	337,434	281,948	1,306,392	945,000	3,153,090

* Minor monitoring and reporting violations were excluded.

** Number adjusted to avoid double-counting water systems with violations of multiple contaminant and monitoring standards.

Table 4 - Water Systems Completing Construction/Installation Projects in 2002

Water System Name	PWS #	Population Served	County	Improvement
Carlton, City of	4100171	1,570	Yamhill	Improve Filtration/Disinfection
Cedar Water Association	4101245	24	Lane	Filtration
Centennial Admin. Offices	4193762	100	Marion	Connect to City of Keizer
Estacada, City of	4100279	1,910	Clackamas	Improve Disinfection
Glendale, City of	4100323	840	Douglas	Improve Filtration/Disinfection – EPOC
Juno Non-Profit WC	4100889	150	Tillamook	Connect to Kilches Regional WD
Neskowin Reg. WD	4100970	300	Tillamook	Corrosion Control – Soda Ash
Pacific City	4100609	1,200	Tillamook	Blended Sources
Rosedale Elementary School	4193768	200	Marion	Corrosion Control– Soda Ash
Sumpter, City of	4100845	155	Baker	Filtration – Slow Sand
Warrenton, City of	4100932	8,000	Clatsop	Membrane Filtration
Yamhill, City of	4100968	875	Yamhill	Improve Filtration/Disinfection
Boulder Creek Water System	4100722	180	Lincoln	Construct New Wells
Richland, City of	4100703	175	Baker	Filtration
Springfield Utility Board	4100837	51,674	Lane	Filtration
Westfir, City of	4100939	330	Lane	Improve Disinfection

Enforcement Activities

During 2002, the Department issued 10 formal enforcement actions for high-priority violations of standards, primarily for coliform and nitrate maximum level violations, surface water treatment violations, and repeated failures to sample and report sample results. 277 previously initiated actions were resolved and 27 compliance schedules were extended.

Conclusions

Oregon water suppliers and the Department of Human Services drinking water program must continue to focus efforts on responding to coliform bacteria contamination, getting filtration treatment installed at unfiltered supplies that must filter, improving filtration treatment facilities and their operation, and installing treatment to control lead and copper at the tap. Improved monitoring for coliform bacteria, surface water treatment, and nitrate is essential; otherwise the safety of public drinking water in

Oregon cannot be reliably assured. The Department needs to better inform smaller water systems of regulatory requirements, particularly in the area of sampling, and conduct more enforcement where needed to affect change.

More Information

Listings of water systems that violated maximum levels or treatment requirements in 2002 (and fact sheets on specific contaminants) are available on request or from the Oregon Drinking Water web page (<http://www.dhs.state.or.us/publichealth/dwp/>):

Attachments:

Table 1 - Oregon Violation Summary - 2002

Table 2 - Number of Public Water Systems in Violation by Population Category - 2002

Table 3 - Number of Violations by Population Category - 2002

Table 4 - Water Systems Completing Construction/Installation Projects in 2002



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