



Office of Inspector General

Audit Report

WATER

Colorado Water Quality Standards, Monitoring, and Reporting Program

Report No. E1HWF8-07-0004-9100093

March 10, 1999

Inspector General Division
Conducting the Audit:

Central Audit Division
Kansas City, Kansas

Region Covered:

Region 8

Program Office Involved:

Office of Ecosystems Protection
and Remediation

March 10, 1999

MEMORANDUM

SUBJECT: Colorado's Water Quality Standards, Monitoring, and Reporting
Audit Report E1HWF8-07-0004-9100093

FROM: Bennie S. Salem
Divisional Inspector General

TO: William P. Yellowtail
Regional Administrator
Region 8

Attached is our report entitled *Colorado's Water Quality Standards, Monitoring, and Reporting*. We discussed our findings with your staff and issued a draft report. We summarized your comments in the final report and included your complete response in Appendix I.

ACTION REQUIRED

In accordance with Environmental Protection Agency (EPA) Order 2750, you, as the action official, are required to provide this office a written response to the audit report within 90 days of the final audit report date. For corrective actions planned but not completed by the response date, reference to specific milestone dates will assist in deciding whether to close this report.

We appreciate the cooperation your staff provided throughout the audit. We especially appreciate the program staff's assistance and cooperation during the audit. The staff exhibited a genuine interest in working with us to improve the water quality program and helped add value to this audit.

This audit report contains findings that the Office of Inspector General (OIG) has identified and corrective actions OIG recommends. This audit report represents the opinion of OIG, and the findings in this audit report do not necessarily represent the final EPA position. Final determinations on matters in this audit report will be made by EPA managers in accordance with established EPA audit resolution procedures.

We have no objections to the release of this report to the public. If you have any questions, please call Connie Walton, Audit Manager, at (913) 551-7007. Please refer to report number E1HWF8-07-0004-9100093 on any correspondence.

Attachment

EXECUTIVE SUMMARY

INTRODUCTION

Water is one of our vital resources and must be protected. One of the Environmental Protection Agency's (EPA) 10 strategic goals is for clean and safe water. This goal includes ensuring our surface waters, such as lakes, rivers, wetlands, and oceans sustain human health, support and maintain aquatic life, and provide for both recreational and economic activities. EPA and states developed water quality programs to protect surface waters by identifying how the water is to be used, setting standards to meet the use, and then monitoring and reporting on how well the water quality supports the use. EPA and states use their water quality information as a basis for, and to measure performance of, their programs to control and clean up water pollution. This audit is one in a series of state water quality audits conducted by the Office of Inspector General (OIG) to develop a national picture of the performance of state water quality programs.

OBJECTIVES

Our overall objective was to determine whether Colorado's water quality program effectively protects its surface water to sustain human health and aquatic life, and provides for both recreational and economic activities. Our specific objectives were to answer the following questions:

- P Has Colorado implemented procedures to develop water quality standards that will protect the State's water quality?
- P Has Colorado implemented procedures to test and assess the quality of all appropriate waters in the State?
- P Are State reports on water quality complete, accurate, and useful for program management?

- P Has Region 8 implemented effective procedures to approve Colorado water quality standards and evaluate the State's water quality standards setting, testing, assessing, and reporting?

RESULTS IN BRIEF

Overall, Colorado developed a water quality program that generally protects its surface water to sustain human health and aquatic life, and provides for recreational and economic activities. Colorado implemented procedures to develop comprehensive water quality standards to protect State water quality. However, in implementing any program as complex as the Clean Water Act, improvements can be made in adopting and supporting decisions for water quality standards. Colorado's monitoring program employed appropriate monitoring methods and procedures to evaluate the waters of the State; although, like other states, Colorado has faced difficult challenges in maintaining a comprehensive water quality monitoring program. Colorado water quality reports varied in completeness and accuracy.

Region 8 priorities in the oversight of the Colorado water quality program reflected the Office of Water priorities. Region 8 oversight efforts focused on the development of standards while placing little emphasis on Colorado's monitoring activities. Region 8 implemented effective procedures to approve and evaluate Colorado's water quality standards setting; however, it had not developed procedures to oversee and evaluate Colorado's water quality testing, assessing, and water quality assessment reporting. Colorado, in turn, historically has placed more attention on the development of its standards program than on monitoring, assessing, and reporting activities.

RECOMMENDATIONS

We recommend the Regional Administrator:

- P** Work with Colorado to improve its support for water quality standards decisions and disapprove future water quality standards submissions which lack adequate analysis and support.
- P** Assist Colorado in increasing the comprehensiveness of its state water quality monitoring program.
- P** Persuade Colorado to follow national guidance in preparing the water quality assessment report to include complete, accurate information.
- P** Develop procedures to oversee and evaluate Colorado's water quality testing, assessing, and water quality assessment reporting.

**AGENCY AND STATE
COMMENTS AND
OIG EVALUATION**

Region 8 and Colorado generally agreed with the recommendations. Region 8 agreed that coordinated work with the State is needed for continued program improvements. Region 8 documented several planned technical and program support activities and commitments to work with and support Colorado programs. Colorado welcomed assistance in its ongoing efforts to continually enhance water quality testing, assessing, and water quality assessment reporting.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	i
CHAPTERS	
1 INTRODUCTION	1
PURPOSE	1
BACKGROUND	2
SCOPE AND METHODOLOGY	5
PRIOR AUDIT COVERAGE	5
2 ALTHOUGH COLORADO’S STANDARDS PROGRAM IS STRONG, ADDITIONAL STANDARDS AND MORE SUPPORT FOR DECISIONS ARE NEEDED	6
COLORADO DEVELOPED AND ADOPTED CRITERIA WHERE EPA HAD NOT	7
COLORADO DID NOT ADOPT THE NATIONAL SWIMMABLE USE CLASSIFICATION FOR ALL STATE WATERS	8
COLORADO SHOULD ADOPT CLEAN WATER ACT CRITERIA FOR ALL WATERS CLASSIFIED TO PROVIDE DRINKING WATER	9
COLORADO COULD BETTER SUPPORT CRITERIA LIMITS FOR POLLUTANTS	10
CONCLUSION	11
RECOMMENDATIONS	12
AGENCY AND STATE COMMENTS AND OIG EVALUATION	12
3 PROGRESS IN COLORADO’S MONITORING PROGRAM IS STILL POSSIBLE .	14
STATES MUST ESTABLISH APPROPRIATE TESTING	14

COLORADO’S MONITORING PROGRAM IS EVOLVING 14

COLORADO COULD UTILIZE MORE ADVANCED MONITORING
TECHNIQUES 15

FORMAL PROCESS TO OBTAIN ORGANIC MONITORING DATA
WOULD IMPROVE WATER QUALITY ASSESSMENTS 15

CONCLUSION 16

RECOMMENDATIONS 16

AGENCY AND STATE COMMENTS AND OIG EVALUATION 16

4 COLORADO’S EMPHASIS ON WATER QUALITY REPORTS WAS
INCONSISTENT 17

STATES MUST REPORT ON QUALITY OF THEIR WATERS 17

COLORADO’S IMPAIRED WATERBODY LIST APPEARED TO BE
COMPLETE AND ACCURATE 18

COLORADO’S WATER QUALITY ASSESSMENT REPORT WAS
NOT COMPLETE OR ACCURATE 18

ASSESSMENT DATABASE COULD IMPROVE STATE PROCESSES 19

CONCLUSION 19

RECOMMENDATIONS 20

AGENCY AND STATE COMMENTS AND OIG EVALUATION 20

5 REGION 8 OVERSIGHT MIRRORED OFFICE OF WATER DIRECTION 21

WATER MANAGEMENT AGREEMENT LISTS PRIORITIES AND
MEASURES 21

REGION 8 ACTIVELY PARTICIPATED IN COLORADO’S
STANDARDS PROGRAM 22

REGION 8 HAD LIMITED INVOLVEMENT IN COLORADO’S
MONITORING PROGRAM 22

CONCLUSION 22

RECOMMENDATIONS 23

AGENCY AND STATE COMMENTS AND OIG EVALUATION 23

EXHIBITS

1 SCOPE AND METHODOLOGY 24

APPENDICES

I AGENCY RESPONSE 26

II STATE RESPONSE 38

III ABBREVIATIONS 49

IV DISTRIBUTION 50

CHAPTER 1

INTRODUCTION

PURPOSE

Water is one of our vital resources and must be protected. One of the Environmental Protection Agency's (EPA) 10 strategic goals is for clean and safe water. This goal includes ensuring our surface waters, such as lakes, rivers, wetlands, and oceans sustain human health, support and maintain aquatic life, and provide for both recreational and economic activities. EPA and states developed water quality programs to protect surface waters by identifying how the water is to be used, setting standards to meet the use, and then monitoring and reporting on how well the water quality supports the use. EPA and states use their water quality information as a basis for, and to measure performance of, their programs to control and clean up water pollution.

This audit is one in a series of state water quality audits conducted by the Office of Inspector General (OIG) to develop a national picture of the performance of state water quality programs. OIG selected a variety of states where audits could identify best practices and needed improvements.

Our overall objective was to determine whether Colorado's water quality program effectively protects its surface water to sustain human health and aquatic life, and provides for both recreational and economic activities. Our specific objectives were to answer the following questions:

- P** Has Colorado implemented procedures to develop water quality standards that will protect the State's water quality?

- P** Has Colorado implemented procedures to test and assess the quality of all appropriate waters in the State?

- P Are State reports on water quality complete, accurate, and useful for program management?

- P Has Region 8 implemented effective procedures to approve Colorado water quality standards and evaluate the State's water quality standards setting, testing, assessing, and reporting?

BACKGROUND

The Clean Water Act is the primary legislation addressing water quality programs. The Clean Water Act's objective is to restore and maintain the quality of the nation's surface waters. The Clean Water Act requires states to adopt water quality standards. These standards are an important basis for state actions to control and remedy water pollution. Water quality standards have three parts: (1) water use classifications, (2) water quality criteria, and (3) an antidegradation policy.

States classify waters according to how they can be used, such as for drinking water supply, fishing, and swimming. States can assign multiple use classifications to waters. The Clean Water Act goal is that all waters of the United States be fishable and swimmable, where attainable. The fishable use provides for the protection and propagation of fish, shellfish, and wildlife. The swimmable use provides for recreation in and on the water. States are required to adopt the fishable and swimmable use classifications for all waters, unless the water cannot meet these uses. If the waters cannot meet these uses, 40 Code of Federal Regulations (CFR) 131.10, *Designation of uses*, requires states to conduct special studies showing the uses are not attainable.

Once states assign water use classifications, the Clean Water Act requires states to adopt water quality criteria to protect the uses. Water quality criteria identify the amount of a specific pollutant that may be present in the water and still protect the use. For example, the water quality criteria

for a fishable use could identify how much mercury can be present in the water and still protect the fish and other aquatic life. For protection of aquatic life, EPA recommends two types of criteria - acute and chronic. Acute criteria are designed to protect aquatic life from short-term exposures to pollutants, while chronic criteria are designed to protect aquatic life from exposure to pollutants over long periods of time.

EPA develops and publishes criteria that set limits for pollutants based on the effect the pollutants have on the water use classifications. The Clean Water Act requires EPA to develop criteria for 126 priority toxic pollutants; i.e., the most persistent, prevalent, and toxic of pollutants. To date, EPA has only developed criteria for 99 of the priority toxic pollutants. States may use EPA criteria or develop their own scientifically defensible criteria.

40 CFR 131.12, *Antidegradation policy*, requires states to have an antidegradation policy to conserve, maintain, and protect existing uses of waterbodies and maintain water quality. The antidegradation policy also should protect waters of exceptionally high quality or value.

States are required to review their water quality standards once every 3 years and obtain EPA approval for the standards. If EPA disapproves a state's water quality standards, it is required to promulgate new standards for the state. The state's water quality standards remain in effect unless EPA promulgates new standards for the state.

40 CFR 130.4, *Water quality monitoring*, requires states to develop a monitoring program to assess whether state waters meet water quality standards. State water quality monitoring programs generate important information necessary to guide management decisions and track environmental progress. Monitoring programs identify waters to be tested, frequency of testing, and types of testing. State monitoring programs must meet EPA's general quality assurance requirements.

The Clean Water Act requires each state to submit to EPA a biennial water quality assessment report summarizing its water quality assessments. EPA summarizes the state reports in a national report to Congress. EPA uses the state water quality assessments to measure performance in achieving its goal of clean and safe water.

If a waterbody does not meet its water quality standards, the state classifies the waterbody as impaired and determines the cause of impairment. Water pollution comes from either point or nonpoint sources. Point source discharges are controlled through the use of permits. Examples of point source dischargers are municipal sewage treatment plants and industrial facilities. These types of facilities discharge through identifiable conveyances, such as pipes or sewers into surface waters. Nonpoint sources of pollution are less readily identifiable, such as from agricultural runoff.

Once the state identifies impaired waterbodies, the state is required to develop total maximum daily loads if existing controls are not sufficient to correct the impairment. Total maximum daily loads specify the amount of pollution allowed to enter a waterbody from both point and nonpoint sources. The Clean Water Act requires states to submit to EPA a biennial list of its impaired waterbodies still requiring total maximum daily loads. EPA reviews and approves the impaired waterbody list.

The Colorado Water Quality Control Commission and the Colorado Department of Public Health and Environment are responsible for protecting and maintaining Colorado's water quality. The Water Quality Control Commission sets pollution control policy in Colorado. The Water Quality Control Division within the Department of Public Health and Environment advises the Commission on water quality standards, monitors water quality, and reports on the status of water quality. In fiscal 1998, EPA provided approximately \$700,000 to the Department of Public Health and Environment for its surface water program.

**SCOPE AND
METHODOLOGY**

We performed our audit in accordance with the *Government Auditing Standards* (1994 revision) issued by the Comptroller General of the United States as they apply to program audits. Our review included tests of the program records and other auditing procedures we considered necessary. We conducted our fieldwork from March through August 1998. We performed our fieldwork at Region 8 and the Colorado Department of Public Health and Environment, both in Denver, Colorado.

See Exhibit 1 for methodology details.

**PRIOR AUDIT
COVERAGE**

Although neither the OIG nor the U.S. General Accounting Office has issued any recent reports directly related to Colorado's water quality standards, monitoring, and reporting program, the OIG completed a similar audit in the State of Missouri, *Missouri's Water Quality Standards and Monitoring*, dated March 31, 1998. In this report, the OIG recommended to the EPA Regional Administrator that Missouri should adopt the swimmable use classification for all waters or conduct the required studies showing the use could not be achieved. The OIG also recommended Missouri adopt EPA or other scientifically defensible criteria, develop a monitoring strategy to ensure comprehensive monitoring of all State waters, and implement procedures and controls to ensure its water quality reports are complete and accurate.

CHAPTER 2

ALTHOUGH COLORADO'S STANDARDS PROGRAM IS STRONG, ADDITIONAL STANDARDS AND MORE SUPPORT FOR DECISIONS ARE NEEDED

Colorado implemented procedures to develop water quality standards that were comprehensive and protected State water quality. However, in implementing any program as complex as the Clean Water Act, improvements can be made in adopting standards and supporting decisions for those standards. Colorado water quality regulations define the conditions for adopting standards, but do not define the specific documentation required to support those decisions. Colorado needs to ensure that its decisions are supported with sufficient scientific analysis. In the absence of this analysis, policy-making bodies in Colorado make decisions based on incomplete information. Without adequately justifying decisions to adopt water quality standards, the public and aquatic life could be exposed to unsafe levels of pollution and the public could face increased health risks.

Colorado developed water quality criteria for pollutants in the absence of EPA criteria to make certain its citizens were protected against dangerous pollutants found in State waters. However, Colorado standards could be improved by addressing the following issues:

- P** Colorado did not adopt the national swimmable use classification for all of its waters, nor provide support that the use could not be met.

- P** Colorado could increase protection of waterbodies used for drinking water supply by adopting all Clean Water Act human health criteria.

- P** Colorado adopted criteria for several pollutants based on the amount of pollution

in the water without supporting that the waters' use was still protected.

**COLORADO
DEVELOPED AND
ADOPTED CRITERIA
WHERE EPA
HAD NOT**

Colorado has a well-developed water quality standards program. Colorado adopted water quality criteria for more than 140 pollutants and has been proactive in developing water quality criteria for toxic pollutants where EPA had not. For example, Colorado developed scientifically defensible criteria for silver and the organic pollutant diisopropylmethylphosphonate (DIMP). Colorado felt that these pollutants could threaten both human health and aquatic life, and therefore developed criteria to protect its waters from these pollutants.

The Clean Water Act charged EPA with developing water quality criteria for priority pollutants to protect human health and aquatic life. Federal regulations place the responsibility on states to adopt water quality criteria to protect water use classifications where EPA has not developed criteria.

Colorado developed chronic aquatic life criteria for silver because silver is dangerous to aquatic life. Although EPA recommends both acute and chronic criteria for aquatic life, it only developed acute aquatic life criteria for silver. Colorado officials believed chronic criteria was needed to protect aquatic life and developed its own scientifically defensible chronic criteria. Colorado resisted attempts by a strong industry lobby group to overturn the decision to adopt the chronic silver criteria.

Colorado also developed water quality criteria for DIMP to protect waters used for drinking water supply. Colorado found DIMP leaching into drinking water supply waters near the Colorado Rocky Mountain Arsenal. Colorado officials believed that this pollutant was harmful to human health. In the absence of EPA-published criteria to limit DIMP, Colorado developed and adopted its own scientifically defensible criteria for this organic pollutant.

As a result, Colorado now protects its drinking water supplies from the potential effects of DIMP.

**COLORADO DID NOT
ADOPT THE NATIONAL
SWIMMABLE USE
CLASSIFICATION FOR
ALL STATE WATERS**

Colorado did not adopt the national swimmable use classification for all State waters. The Clean Water Act requires states to adopt the swimmable use classification for every waterbody, where attainable. Colorado did not follow its own policy in adopting the swimmable use classification, nor did the State provide acceptable special studies supporting that the use was not attainable. Without the swimmable use classification, Colorado allows bacteria to be present in waters used for recreational activities at higher levels than it and EPA consider safe for human contact.

Colorado did not follow its own policy in adopting the swimmable use classification. Colorado's policy is to adopt the swimmable use classification for waters used for recreational activities that involve the possibility of ingesting small quantities of water; for example, kayaking and rafting. We identified several waters where Colorado had evidence of other recreational activities such as non-motorized travel and occasional wading but did not adopt the swimmable use classification. We believe kayaking and rafting are forms of non-motorized travel, and small children could ingest small quantities of water when wading. Colorado did not adopt the swimmable use classification for 257 of its 603 waterbodies (43 percent). We reviewed 45 of these 257 waterbodies and found that 16 were used for these other types of recreational activities. While current monitoring of the 16 waterbodies did not show evidence of unsafe levels of bacteria, proper use classifications ensure safe bacteria limits are in place to protect human health.

Colorado did not provide acceptable special studies supporting that the swimmable use was not attainable. Federal regulations acknowledge that the swimmable use may not always be attainable and provide an exception where states conduct special studies supporting their decision. However, federal regulations are silent as to the

minimum requirements of the special studies. Colorado officials disagreed with Region 8 over the contents of the special studies. Colorado officials believed a simple description of the water segment met the requirements of the study and claimed they met the requirements. Region 8 officials, however, believed that the special studies should include more rigorous analysis of the water condition. Region 8 repeatedly requested the State to conduct the studies and provided examples.

**COLORADO SHOULD
ADOPT CLEAN WATER
ACT CRITERIA FOR ALL
WATERS CLASSIFIED
TO PROVIDE DRINKING
WATER**

Ambiguous EPA national guidance resulted in inconsistent adoption of criteria for Colorado waterbodies classified to provide drinking water. Colorado adopted drinking water supply criteria for all pollutants specified in the Safe Drinking Water Act. However, EPA developed criteria for other pollutants for the protection of human health under the Clean Water Act, but did not require states to adopt these criteria for waterbodies used for drinking water. As a result of Colorado following national guidance, 42 waterbodies in Colorado classified for drinking water supply had fewer criteria for pollutants than other State waterbodies classified to provide drinking water to the Colorado public.

The Clean Water Act requires states to adopt water quality criteria for priority pollutants if the presence of the pollutant could interfere with the uses of the waterbody. The Safe Drinking Water Act established maximum pollutant levels, or criteria, that control toxic chemicals coming out of the tap. According to EPA's *Water Quality Standards Handbook*, when setting water quality criteria for public water supplies, states have the option of applying the Safe Drinking Water Act criteria, the Clean Water Act criteria, or more stringent controls to protect against the effects of contaminants by ingestion from drinking water. Unfortunately, EPA did not develop criteria for all of the same pollutants under the Clean Water Act and Safe Drinking Water Act. Therefore, although Colorado adopted criteria for drinking water supplies for all pollutants

with Safe Drinking Water Act criteria, it did not adopt EPA-recommended criteria for other pollutants identified by the Clean Water Act.

**COLORADO COULD
BETTER SUPPORT
CRITERIA LIMITS FOR
POLLUTANTS**

Colorado adopted water quality criteria for some pollutants in certain waters that were less restrictive than the criteria applied to most other waters in the State. For these pollutants, Colorado did not provide support showing the criteria were still protective of the uses for the waters. Colorado names this form of criteria ambient-based criteria, which refers to the amount of the pollutant already present in the water. Ambient-based criteria are less restrictive than EPA-recommended criteria; therefore, Colorado allows more pollutants in waters where ambient-based criteria are adopted. Colorado could not support its claim that allowing more pollution in some of its waters was still protective of the waters' use.

Colorado has not always provided adequate support for its ambient-based criteria. We reviewed 14 of the 109 waters with ambient-based criteria and found Colorado did not have adequate support that the less restrictive criteria still protected the waters' use. In the waters reviewed, Colorado generally relied on monitoring results as sufficient support for adoption of ambient-based criteria.

Colorado regulations allow for adopting ambient-based criteria where natural or irreversible man-induced water quality levels are higher than Colorado's generally accepted criteria. The adoption of ambient-based criteria is an alternative to downgrading or removing a use associated with a particular waterbody. Because of its geography, Colorado has naturally high concentrations of metals in many parts of the State. Colorado officials also believe that man-induced practices, such as past mining activities, have irreversibly disturbed some waters. Region 8 concurs that

ambient-based criteria may be appropriate in these types of waters but should be properly supported.

Region 8 questioned Colorado's lack of support for specific ambient-based criteria for several years. Regional staff commented on draft and proposed ambient-based criteria, and urged Colorado to document a technically-defensible rationale for ambient-based criteria. In August 1998, Region 8 disapproved Colorado's ambient-based criteria for certain portions of the Animas River because Colorado did not provide support that the criteria was protective of the waters' existing use.

Although all of Colorado's water quality standards decisions are made in a public forum, the written justification needed to adopt standards is only that necessary to convince a majority of the Water Quality Control Commissioners. When making recommendations to the Commission, the Water Quality Control Division does not always provide adequate supporting documentation for those recommendations. In order to ensure that State water is protective of the waters' uses, the Water Quality Control Division should provide sufficient support showing that its recommendations will continue to maintain and protect Colorado's water quality.

CONCLUSION

Colorado has a well-developed water quality standards program. Colorado has adopted water quality criteria for more than 140 pollutants, and has developed criteria on its own when it felt that a pollutant could interfere with the uses of its water and pose a threat to both human and aquatic life. Like any complex environmental program, however, improvements are possible. Ensuring waters remain safe for swimming is important because people will use whatever waters are available for recreation. Maximum protection for waters used as drinking water sources is a must to help ensure the water we use in our homes is free from dangerous pollutants. When Colorado adopts ambient-based criteria without adequate support, it may send a message to the regulated community that this type of criteria may be acceptable for any waters where elevated concentrations of pollutants can't be easily explained.

RECOMMENDATIONS

We recommend the Regional Administrator:

- 2-1. Work with Colorado to adopt the national swimmable use classification and corresponding criteria limits where attainable, or conduct the required special studies with consideration of basinwide special studies. Disapprove Colorado water quality standard submissions which do not comply with these options.
- 2-2. Work with Office of Water to remove the ambiguity in national guidance for adopting drinking water supply criteria, and recommend Colorado adopt the Clean Water Act human health based criteria for all State waters classified for drinking water supplies.
- 2-3. Continue to encourage Colorado to develop written justification supporting the appropriateness of adopting ambient-based criteria and disapprove water quality standards submissions that include inadequate analysis.

**AGENCY AND STATE
COMMENTS AND OIG
EVALUATION**

Colorado provided comments to clarify portions of the report, and we have incorporated these comments and modified the report as appropriate.

Region 8 agreed with recommendation 2-1 and stated additional work is needed at the Regional and State level to bring Colorado into compliance with federal requirements for the protection of the swimmable use. Colorado did not agree to adopt the national swimmable use classification and corresponding criteria limits for all waters, where attainable. Colorado did not provide the required special studies supporting that the swimmable use was not attainable.

However, Colorado stated more documentation was desirable to support decisions regarding adoption of recreational use classifications. Thus, Region 8 will need to disapprove these standards.

Region 8 agreed with recommendation 2-2, that there is ambiguity in national guidance for adopting drinking water supply criteria and will continue to discuss this issue with Office of Water. However, Region 8 believes Colorado adopted sufficient criteria to protect its drinking water supplies, though not the most protective of the several acceptable approaches established by EPA, and did not agree to recommend a change. Colorado adopted all Safe Drinking Water Act criteria; however, it did not agree to also adopt Clean Water Act criteria designed to protect human health for all state waters classified for drinking water supply.

Region 8 agreed with recommendation 2-3 that additional work was needed at the Regional and State level to improve the process by which ambient-based standards are developed and adopted. Colorado agreed more documentation was desirable to support decisions, including preparing analyses at triennial reviews for maintaining ambient standards in light of changed conditions since the initial standards adoption.

CHAPTER 3

PROGRESS IN COLORADO'S MONITORING PROGRAM IS STILL POSSIBLE

Colorado's current monitoring program employed appropriate monitoring methods and procedures to test and assess the waters of the State. Colorado, like other states, has faced difficult challenges in maintaining a comprehensive water quality monitoring program. In 1997, Colorado reorganized to create a new monitoring unit, and thus demonstrated the State's increased commitment to water quality monitoring. However, Colorado could utilize more advanced monitoring techniques and needs to develop a formal process to obtain organic monitoring data. Without organic monitoring data, Colorado may not be able to identify all impaired waters.

STATES MUST ESTABLISH APPROPRIATE TESTING

40 CFR 130.4, *Water quality monitoring*, requires states to establish appropriate testing techniques to monitor water quality. This monitoring information is to be used to support activities to abate and control pollution, develop water quality standards, and report water quality information to the public. The regulations further require that water monitoring programs include the collection and analysis of physical, chemical, and biological data, and quality assurance and control programs to assure scientifically valid data.

COLORADO'S MONITORING PROGRAM IS EVOLVING

Colorado, like other states, has faced difficult challenges in maintaining a comprehensive water quality monitoring program. In 1995, Colorado exhausted all means of supporting instream water quality monitoring. However, in 1995, Colorado directed additional resources toward watershed scale monitoring. In 1997, Colorado reorganized to create a monitoring unit and significantly reallocated staff

resources targeted to monitoring. As a result, Colorado's current monitoring program more comprehensively identifies waters to be tested and ensures frequent testing of the waters.

**COLORADO COULD
UTILIZE MORE
ADVANCED
MONITORING
TECHNIQUES**

The overall usefulness of Colorado's monitoring in its various watersheds would improve with a more well-rounded monitoring design, including biological indicators. Colorado's monitoring program primarily conducted chemical-specific water quality testing in the last 2 years. Chemical-specific testing alone does not provide the necessary information to determine the biological condition of the water. Skewed emphasis on chemical testing could result in the State not identifying impaired waters. Colorado's monitoring has included more advanced monitoring techniques such as ambient toxicity testing, fish population estimates, macro invertebrate surveys, and habitat assessments. However, the extent of these more advanced monitoring techniques was limited. Additional monitoring data would provide Colorado with a better basis for determining the effectiveness of its water management program and the answer to the question: What is the condition of state waters?

**FORMAL PROCESS TO
OBTAIN ORGANIC
MONITORING DATA
WOULD IMPROVE
WATER QUALITY
ASSESSMENTS**

Colorado had no systematic process to obtain organic pollutant monitoring data for use in water quality assessments and reporting. Organic pollutants, such as pesticides and herbicides, can pose a threat to human health and aquatic life. Colorado Water Quality Control Division's monitoring program did not include testing State waters for organic pollutants. Although other Colorado divisions and federal agencies tested the waters for organic pollutants, the Water Quality Control Division did not have a structured process for obtaining and using this testing data. Without these testing results, Colorado cannot identify waters impaired by organic pollutants.

CONCLUSION

Although Colorado's monitoring program met statutory requirements, the State is interested in increasing the extent of more advanced monitoring techniques. Colorado officials stated funding constraints limited their ability to expand their monitoring program. Also, Colorado could provide for a more comprehensive evaluation of water impairments by obtaining organic pollutant monitoring data or monitoring the waters themselves.

RECOMMENDATIONS

We recommend the Regional Administrator:

- 3-1. Provide technical assistance to help Colorado formulate a long range plan to expand its monitoring program to include advanced testing techniques.
- 3-2. Request that Colorado develop and implement a process to obtain and use other sources of organic pollutant monitoring or monitor for organic pollutants themselves.

**AGENCY AND STATE
COMMENTS AND OIG
EVALUATION**

Region 8 agreed with both recommendations. Colorado welcomed both technical assistance from Region 8 toward improving its monitoring program, and ideas on better means to incorporate organic chemical monitoring data into water quality assessments.

CHAPTER 4

COLORADO'S EMPHASIS ON WATER QUALITY REPORTS WAS INCONSISTENT

Colorado water quality reports varied in completeness and accuracy. EPA and public pressures brought on in part by recent total maximum daily load lawsuits prompted Colorado to accurately prepare the impaired and threatened waterbodies list. However, Colorado had not felt similar pressure from EPA and the public to focus on the quantity and quality of data included in the water quality assessment report, the primary mechanism to report to the public on the quality of its waters. Also, Colorado did not use a database to store water quality assessments to increase the efficiency of its water quality reporting. Colorado's lack of emphasis on the preparation of the water quality assessment report may result in Congress and the public using inaccurate or incomplete data for decision making.

STATES MUST REPORT ON QUALITY OF THEIR WATERS

Clean Water Act section 303(d) requires states to list impaired waterbodies. The impaired waterbody list is used to schedule waterbodies for the development of total maximum daily loads. 40 CFR 130.7, *Total maximum daily loads (TMDL) and individual water quality-based effluent limitations*, requires states to identify all impaired waterbodies where existing pollution control requirements are not stringent enough to achieve the water quality standards.

Clean Water Act section 305(b) requires states to submit a report describing the quality of all waters within the state every 2 years. 40 CFR 130.8, *Water quality report*, provides that the water quality assessment reports serve as the primary assessment of state water quality and provide the basis for water quality management planning. EPA, states, and tribes together developed guidance for the preparation of this report. The goal of the guidance is to

improve the accuracy, consistency, and usefulness of water quality data reported by the states, and then summarized in the national report on water quality for Congress and the public.

**COLORADO'S
IMPAIRED
WATERBODY LIST
APPEARED TO BE
COMPLETE AND
ACCURATE**

Colorado appeared to develop a complete and accurate impaired and threatened waterbody list. Colorado placed a high priority on the preparation of this list and implemented effective procedures to develop the list. Colorado's emphasis on preparation of the list stemmed in part from recent lawsuits that focused increased public attention on the accuracy of the lists. Further, Colorado used the list as a tool to develop monitoring plans, direct program efforts, and prioritize the development of total maximum daily loads.

**COLORADO'S WATER
QUALITY ASSESSMENT
REPORT WAS NOT
COMPLETE OR
ACCURATE**

Although Colorado recognized the importance of the water quality assessment report as a public information vehicle, the report was not complete or accurate, and therefore not comparable to other states. Colorado's 1996 water quality assessment report did not include tables of the status of water quality by use classification. Further, Colorado inappropriately made presumed assessments of water quality for organic pollutants. As a result, Colorado's 1996 assessment report cannot be accurately compiled with other state reports to present a national picture of water quality.

Colorado did not follow specific recommendations in the national guidance document. Colorado did not prepare tables of all use classifications in the report as recommended. These tables would have shown the number of river miles and lake acres for each use classification in Colorado, and which waters were fully, partially, or not supporting their use. The tables also would have shown which waters' uses were threatened or not attainable. Colorado's water quality assessment report cannot be

compiled with other state data to present an analysis of the status of water quality nationwide.

Colorado made presumed assessments by classifying waterbodies as fully supporting in the absence of organic pollutant monitoring data. The national guidance clearly cautioned states against making presumed assessments and categorizing waters as fully supporting in the absence of monitoring data. Colorado classified all waters as fully supporting without organic pollutant monitoring data.

**ASSESSMENT
DATABASE COULD
IMPROVE STATE
PROCESSES**

Colorado could improve its reporting process and more efficiently and effectively report water quality data to the public by using a database to store water quality assessments. Colorado did not meet the 1998 water quality assessment report submittal deadline required by the Clean Water Act because Colorado did not have an efficient process for preparing the report. Colorado could increase the likelihood of timely submittal of required reports and more efficiently compile water quality assessment data by having a database of assessments. Colorado could assess water quality as monitoring data became available and later review the assessments without having to recompile the data. Also, Colorado could reduce duplication of effort by not reassessing water quality data when preparing each of the required reports. A database could also facilitate the tracking and analysis of trends in water quality and biological monitoring, which could provide a basis for evaluating the appropriateness of numeric water quality criteria.

CONCLUSION

Although a high emphasis was placed on the preparation of the impaired and threatened waterbody list, Colorado could improve the usefulness of the water quality assessment report by consistently following national guidance. Consistent reporting of water quality among states enables the aggregation of data for comparisons and analysis on a

national scale. Also, Colorado needs to implement a more efficient automated process for maintaining water quality assessment data which would assist in developing trend data to comprehensively assess water quality changes. As a result, Congress and the public would make decisions based on more accurate and complete reporting data.

RECOMMENDATIONS

We recommend the Regional Administrator:

- 4-1. Persuade Colorado to follow the national guidance in preparing the water quality assessment report and include complete, accurate information.
- 4-2. Work with Colorado to develop a database to maintain water quality assessment data.

**AGENCY AND STATE
COMMENTS AND OIG
EVALUATION**

Region 8 agreed with both recommendations. Colorado shared concerns over inconsistent reporting of water quality among states and committed to make ongoing progress towards a more complete, accurate, and comprehensive water quality assessment report. Colorado also agreed a database to maintain water quality assessments would make them more accessible and easier to report.

CHAPTER 5

**REGION 8 OVERSIGHT MIRRORED
OFFICE OF WATER DIRECTION**

Region 8 implemented effective procedures to approve and evaluate Colorado's water quality standards setting, except it did not consistently disapprove standards when State decisions were not sufficiently supported. Region 8 did not have procedures to oversee and evaluate Colorado's water quality testing and assessing, and water quality assessment reporting. Region 8 oversight efforts focused on the development of standards while placing little emphasis on Colorado's monitoring activities. Region 8 actions mirrored the Office of Water priorities in the Region's current water management agreement. Colorado, in turn, placed more attention on the development of its standards program than on monitoring, assessing, and reporting activities.

**WATER MANAGEMENT
AGREEMENT LISTS
PRIORITIES AND
MEASURES**

The fiscal 1998-1999 water management agreement between Office of Water and Region 8 listed the priority activities for the Region, and contained the measures the Region uses to report on water program accomplishments to the Office of Water. Water quality standards development was listed as one of the top regional priorities. The agreement detailed regional actions planned for assisting states in developing and adopting water quality standards and included a measure for improving state water quality standards. The agreement also stated the Region would continue working with states to develop effective monitoring programs, and that emphasis on reporting responsibilities would be a regional priority. However, no regional actions were detailed, and the agreement did not include measures to support actions to improve state monitoring and reporting programs.

**REGION 8 ACTIVELY
PARTICIPATED IN
COLORADO'S
STANDARDS
PROGRAM**

Region 8 had effective procedures to approve and evaluate Colorado's water quality standards and placed a high priority on the oversight of State water quality standards development. Region 8 participated in Colorado's public review process by testifying at Water Quality Control Commission hearings, developed multiple guidance documents, and interpreted complex EPA Office of Water policy and put it in tangible terms for the State. Regional approval of Colorado's water quality standards was often delayed, however, due to consultations with U.S. Fish and Wildlife Service on the Endangered Species Act. In addition, Region 8 did not consistently disapprove Colorado's water quality standards where Colorado did not adequately support ambient-based criteria or did not provide special studies to support that the swimmable use was not attainable. Overall, Region 8 was very involved in Colorado's standards development process and development of water quality standards to protect the State's waters.

**REGION 8 HAD LIMITED
INVOLVEMENT IN
COLORADO'S
MONITORING
PROGRAM**

Region 8 did not have procedures to oversee and evaluate Colorado's water quality testing and assessing, and water quality assessment reporting. Region 8 had not recently conducted a program review of Colorado's monitoring activities nor evaluated Colorado's monitoring plans. The negotiated water management agreement between Office of Water and Region 8 did not contain measures for monitoring program activities. Consequently, Region 8 did not consider oversight of Colorado's monitoring activities a regional program priority.

CONCLUSION

Although Region 8 was actively involved in the development of standards to protect the integrity of Colorado waters, Region 8 was not involved in Colorado's testing of its waters. As a result, Region 8 needs to develop effective procedures to oversee and evaluate Colorado's

water quality testing and assessing, and water quality assessment reporting.

RECOMMENDATIONS

We recommend the Regional Administrator:

- 5-1. Clarify Region 8's role and commitment for providing technical and program support to Colorado's monitoring and assessment programs.
- 5-2. Identify weaknesses and areas of improvements for Colorado's monitoring and assessment programs and assist in the implementation of corrective actions.

**AGENCY AND STATE
COMMENTS AND OIG
EVALUATION**

Region 8 and Colorado agreed with both recommendations. Colorado welcomed both contributions from Region 8 technical staff and the opportunity to work with them in ongoing efforts to enhance the monitoring and assessment programs.

EXHIBIT 1

SCOPE AND METHODOLOGY

We reviewed Colorado’s internal controls over water quality standards setting, monitoring, and reporting. We analyzed internal controls to assure compliance with federal statutory and regulatory criteria and with Colorado policies and procedures. We determined whether Region 8’s Federal Managers’ Financial Integrity Act reports disclosed any material weaknesses related to the audit. We reviewed the management agreement measures in Region 8’s agreement with Office of Water and the core performance measures in Region 8’s agreement with Colorado, to identify whether they contained the Office of Water Government Performance Results Act goals for water quality. Our audit disclosed areas needing improvement and areas of commendation for both Colorado and Region 8, which are discussed in Chapters 2 through 5.

To determine Colorado’s processes for establishing water quality standards, we interviewed Colorado’s Water Quality Control Division staff and flowcharted their processes for developing and adopting water quality standards. We reviewed Colorado’s water quality standards as adopted in its *Regulation No. 31. The Basic Standards and Methodologies For Surface Water*, and reviewed policy and guidance papers to determine if established water quality standards were in compliance with the Clean Water Act and applicable federal regulations.

To review Colorado’s monitoring program, we interviewed staff of the Water Quality Control Division and flowcharted their process for monitoring and assessing water quality data. We reviewed Colorado’s monitoring plans to identify the location and extent of water quality monitoring. We also flowcharted Colorado’s processes for preparing and reporting on the water quality assessment report and the impaired waterbody list. We reviewed Colorado reports and assessed whether Colorado reports for reporting water quality were consistent with federal regulations and EPA guidance.

We judgmentally selected 57 waterbodies to test and evaluate the processes for setting use classifications, establishing water criteria, monitoring and assessing waterbodies, recording monitoring data in EPA’s computerized data system, and reporting on water quality. We chose the 57 waterbodies for the following reasons: (1) waterbodies with water quality criteria for bacteria adopted at levels higher than recommended to support the national swimmable use classification, (2) waterbodies with ambient-based criteria, (3) waterbodies where temporary deviations were issued and/or expired, (4) waterbodies chosen to verify accuracy and completeness of the 1996 water quality assessment report and the 1998 impaired waterbodies list, (5) waterbodies chosen to verify accuracy and State implementation of either the 1996 or 1997 Colorado monitoring plan, or (6) waterbodies without an aquatic life use classification.

We reviewed National Pollutant Discharge Elimination System permits for major facilities in

Colorado. We reviewed the permits to determine if they included permitted discharges of pollutants for which Colorado did not have water quality standards.

To determine if Region 8 implemented effective procedures to approve water quality standards and evaluate Colorado's water quality standards setting, testing, assessing, and reporting, we interviewed Region officials to determine how they ensured compliance with the Clean Water Act and applicable federal regulations and guidance. We identified their processes for reviewing Colorado's water quality standards, water quality inventory report, and the impaired waterbodies list. We reviewed correspondence between Region 8 and Colorado.

APPENDIX I

AGENCY RESPONSE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

Ref: 8TMS-G

FEB - 2 1999

MEMORANDUM

SUBJECT: Comments on Colorado's Water Quality Standards, Monitoring, and Reporting Draft Audit Report No. E1HWF8-07-0004-XXXX

FROM: William P. Yellowtail *Wm Yellowtail*
Regional Administrator

TO: Bennie S. Salem
Divisional Inspector General

The attached comments were prepared on the draft audit report as requested in your memorandum dated December 29, 1998. The review comments are divided into three broad areas;

- (1) a limited set of editorial suggestions regarding language and descriptions in the draft report language;
- (2) a suggested Regional comment on each recommendation; and
- (3) background material to support the Regional comment.

The background material is included for consideration by the Auditors, and will be the basis for preparing the corrective action plan in response to the final audit report. This will allow me, as Regional Administrator, to comply with the EPA Order 2750 written response requirement which includes a corrective action plan and milestone plan to implement the corrective actions.

We would like to thank you for the opportunity to provide comments on the draft report. If you have any questions, please call Barbara Rodriguez, Regional Audit Coordinator, at (303) 312-6360.

Attachment

cc: Max Dodson, 8EPR
Pat Hull, 8TMS
Jim Luey, 8EPR-EP

Carol Campbell, 8EPR-EP
Wayne Anthofer, 8TMS-G
Barbara Rodriguez, 8TMS-G



ATTACHMENT

Editorial Suggestions (suggested additions in bold)

16. Page 2; second complete paragraph: "... Acute criteria **is are** designed while chronic criteria **is are** designed". Also suggest adding a sentence e.g " **To supplement numeric criteria, States also adopt narrative criteria (often in the form of 'free from' statements) that describe the desired water quality goals (and ideally implementation procedures for these narrative provisions).**"
- P Page 2; fourth complete paragraph: "States are required to **hold public hearings for the purpose of** reviewing their water quality standards **at least** once every 3 years ...".
- P Page 5; last paragraph: "The Clean Water Act charged EPA with developing water quality criteria **guidance** for priority pollutants place the responsibility on states to adopt water quality criteria (**numeric and narrative**) to protect water use classifications. ~~where EPA has not developed criteria.~~
- P Page 11; recommendation 3-1: "... its monitoring program to include advanced testing"
- P Page 13; first paragraph, second sentence: "... prompted Colorado to accurately prepare the impaired **and threatened** waterbodies list ..."
- P Page 13; first paragraph under BACKGROUND, last sentence: "... control requirements are not stringent enough to ~~achieve~~ **attain or maintain** the water quality ...".
- P Page 13; last paragraph: "Colorado appeared to develop a complete and accurate impaired **and threatened** waterbody list...".
- P Page 15; first paragraph: "Although a high emphasis was placed on the preparation of the impaired **and threatened** waterbody list ...".

Regional Responses to Recommendations

Recommendation 2-1.

Work with Colorado to adopt the national swimmable use classification and corresponding criteria limits where attainable, or conduct the required special studies with consideration of basinwide special studies. Disapprove Colorado water quality

standards submissions which do not comply with these options.

EPA Region 8 Response:

The Region agrees that additional work is needed, at both the Regional and State level, to bring Colorado into compliance with federal requirements addressing water quality standards for the protection of recreation uses.

Background to Regional Response:

To date, the Region has addressed this problem by: (1) working with the State before and during each triennial review to assist the State to adopt standards that meet federal requirements, and (2) exercising its authority to disapprove revisions that do not satisfy federal requirements. These efforts are described in more detail below.

Assistance with Triennial Reviews

Colorado's triennial review process for reviewing and revising segment-specific designated uses and numeric standards begins with an informational hearing. The purpose of these hearings is to take public comments on whether the water quality standards should be continued in their current form or changed in some respect. The practice of EPA Region 8 is to submit written comments at Colorado's informational hearings, identifying issues of concern. Our comments address whether there are segments with water quality standards that do not support the uses specified in the Clean Water Act (CWA) § 101(a)(2) (the fishable/swimmable goal), and provide notice of the federal requirement to complete, and make available for public comment, use attainability analyses for those segments. The Region also notifies the State that any proposals to remove a designated use specified in CWA § 101(a)(2) or adopt a modified use that requires less stringent criteria also requires completion of a use attainability analysis.

With respect to water quality standards for recreation, our comments identify the availability of guidance documents issued by the Region in 1992 and 1994 as a supplement to the EPA's national guidance. The 1992 Regional guidance identifies available options and makes recommendations to assist States and Tribes to comply with federal requirements. Our 1994 guidance provides a recommended worksheet for completing use attainability analyses for recreation uses.

Disapproval of Submitted Revisions

The Region's preference is to work with Colorado in a proactive manner, throughout each triennial review, to assist the State to adopt water quality standards that meet federal requirements. However, there have been two occasions when the Region disapproved water quality standards adopted by Colorado that were not protective of recreation uses and were not supported by a use attainability analysis. In a letter dated September 13, 1991, the Region

disapproved the water quality standards for more than two hundred segments in four of the State's seven basins because the standards were not protective recreation uses, and use attainability analyses had not been completed. In a letter dated July 16, 1992, the Region disapproved the water quality standards for more than eighty additional segments located in the South Platte, Laramie, Republican, and Smoky Hill River Basins, again because the standards were not protective of recreation uses and use attainability analyses had not been completed. In the years following these two disapproval actions, the State has upgraded the recreation standards for many of the disapproved segments and elsewhere. However, there is a need to complete use attainability analyses for the segments that still do not include recreation uses and standards consistent with the CWA § 101(a)(2) goal. It is our understanding that the Division has drafted a recreation use attainability analysis worksheet that it plans to use to complete the required analyses.

Recommendation 2-2.

[Work with Office of Water to remove the ambiguity in national guidance for adopting drinking water supply criteria and] Recommend Colorado consistently adopt Clean Water Act criteria designed to protect human health for all State waters classified for drinking water supply.

EPA Region 8 Response:

The Region does not agree with this recommendation as presented in the draft report. First, the issue of ambiguity in national guidance is not an appropriate issue to be raised in a State-specific report (and thus it is recommended the language be deleted). Further, EPA Region 8 has recommended that States and Tribes adopt numeric standards for drinking water segments based on either CWA human health criteria or Safe Drinking Water Act (SDWA) standards, whichever are more stringent. The Region believes that Colorado's numeric standards for drinking water segments meet or exceed minimum federal requirements. The background explains Colorado's approach in more detail and presents the basis for concluding that it is consistent with federal requirements.

Background to Regional Response

Ambiguity in National Guidance

The Region has (and continues to) discuss this issue with our Headquarters office. This is a recognized National issue, and as such does not seem appropriate to raise in a State-specific review effort. Part of the ambiguity is due to statutory construction and different mandates outlined in the CWA as compared to the SDWA. This issue is being considered on a National level.

Evaluation of Colorado's Approach

EPA Region 8 has recommended that States and Tribes adopt numeric standards for drinking water segments based on either CWA human health criteria or SDWA standards, whichever are more stringent. The Region would not recommend exclusive reliance on CWA human health criteria because of the importance of ensuring that source waters for public water supplies achieve a level of water quality that is equal to or better than SDWA Maximum Contaminant Levels (MCLs). The Region believes that Colorado's numeric standards for drinking water segments meet or exceed minimum federal requirements. The recommendation addresses the fact that, for particular segments and some pollutants, the State has not selected the most protective of the several acceptable approaches that EPA has established for States and Tribes. Colorado's approach and the basis for concluding that it is consistent with federal requirements are explained and discussed in more detail below.

Concern has been raised regarding 42 waterbodies where both a drinking water and an aquatic life class 2 designated use have been adopted. For these segments, the State has not concluded, to date, that there is a need to assign numeric standards protective of fish consumption uses, and so the State has assigned human health standards designed to protect only water consumption uses. For other waterbodies in Colorado with both a drinking water and an aquatic life designated use (i.e., where the State has concluded a need to protect fish consumption uses), the State has assigned numeric standards protective of both water and fish consumption. Particularly for pollutants that exhibit a strong tendency to accumulate in fish tissues, numeric standards that assume human exposure only through water consumption will be less stringent than those that assume both water and fish consumption.

States have the option of assigning numeric standards protective of fish consumption uses to all waters with aquatic life designated uses. Colorado has elected not to follow that more stringent approach, but rather to assign such standards to aquatic life class 2 segments only where there is need to provide the extra level of protection (based on the site-specific potential for fish consumption uses). However, all aquatic life class 1 segments are assigned numeric standards protective of fish consumption uses on a statewide basis. The Region believes this approach to protecting fish consumption uses is reasonable and consistent with federal guidance, primarily because of the large number of low-flow waterbodies in Colorado that do not support catchable-size fish populations.

When assigning numeric standards to protect water supply uses, States have the option of using CWA § 304(a) criteria, drinking water values promulgated by the Agency under the SDWA (i.e., Maximum Contaminant Level Goals (MCLGs) or MCLs), or other scientifically defensible criteria. Colorado has elected to assign numeric standards to water supply segments that are derived using the same basic methods that EPA uses to calculate drinking water MCLGs and MCLs. For some pollutants, SDWA values are more stringent than the CWA § 304(a) criteria. For other pollutants, CWA criteria are more stringent than the SDWA values. One of the reasons for the differing levels of stringency is that CWA criteria include explicit consideration of exposure through fish consumption. SDWA standards do not consider fish consumption, although they typically

assume that only a fraction (e.g., 20%) of total exposure is through water consumption. Under EPA's national water quality standards program guidance, the approach used by Colorado to assign numeric standards protective of drinking water uses is acceptable. For some (but not all) pollutants, Colorado's approach results in numeric standards less stringent than those published by the Agency pursuant to CWA § 304(a). EPA Region 8 has issued guidance to all of its States and Tribes recommending, for segments with a drinking water designated use, adoption of either the CWA criterion or the SDWA MCLs, whichever is more stringent (see *Numeric Criteria to Protect Water Supply Uses*, EPA letter to Colleagues signed by Carol Campbell, Director, Ecosystems Protection Program, January 24, 1996).

The Region has worked with Colorado to further develop the State's methodology for identifying aquatic life class 2 segments with the potential to support fish consumption uses. It is our understanding that the State staff intend to: (1) review all aquatic life class 2 segments that have not been assigned fish consumption standards (i.e., not just those with a water supply designated use), (2) propose appropriate revisions to the standards for those segments, and (3) request public comments on its findings as part of each triennial review. The Region understands that State staff will confer with Colorado Division of Wildlife field biologists to identify segments where fishing occurs and segments where fish are stocked by the Division of Wildlife.

Recommendation 2-3.

Continue to encourage Colorado to develop written justification supporting the appropriateness of adopting ambient-based criteria and disapprove water quality standards submissions that include inadequate analysis.

EPA Region 8 Response:

The Region agrees with the recommendation, additional work is needed, at both the Regional and State level, to improve the process by which ambient-based numeric standards are developed and adopted.

Background to Regional Response:

It is particularly important to improve the written justification that is made available for public comment and included in the record. The Region intends to continue its efforts to work with the State on this issue and to carefully review ambient-based numeric standards submitted to EPA for approval/disapproval.

The Region believes that Colorado's provision authorizing ambient-based numeric standards is acceptable under current federal requirements. As explained in EPA Region 8 correspondence with the Colorado Water Quality Control Division dated September 5, 1997:

EPA approved the State's ambient-based criteria provision, despite the lack of explicit authority in 40 CFR 131.11, because of our determination that in situations where "human caused conditions" or "naturally occurring pollutant concentrations" may be a basis for removing the designated use under 40 CFR 131.10(g), it is more protective and therefore also acceptable to maintain the designated use and establish ambient-based criteria. It was also our conclusion that, in either of these two situations, such criteria would protect the aquatic life use that currently exists or is attainable. In the "human caused conditions" situation, admittedly, such waters may not be able to support the full range of aquatic species that the natural habitat and water quality would support, but if the existing water quality conditions truly are irreversible, establishing ambient-based standards will ensure that existing conditions do not deteriorate further and provide protection for the aquatic species that constitute the existing and potential aquatic community in the segment.

The Region believes that there is a need to improve the State's methodology for developing and adopting ambient-based numeric standards. Our September 5, 1997 correspondence with the State recommended that the Water Quality Control Division prepare a document that clarifies its policies and procedures for ambient-based criteria. We specifically suggested that such a document would need to cover procedural issues, establish methods and policies addressing "natural" and "irreversible man-induced" sources, identify minimum elements of a rationale supporting ambient-based criteria, and identify situations where other options may be more appropriate than ambient-based standards (e.g., temporary modifications or variances). We intend to continue working with the State to improve its process for establishing ambient-based numeric standards and to carefully review ambient-based numeric standards submitted to EPA for approval/disapproval.

Recommendation 3-1.

Provide technical assistance to help Colorado formulate a long range plan to expand its monitoring program to include advanced testing techniques.

EPA Region 8 Response:

The Region agrees with the recommendation; chemical-specific water quality testing alone does not provide all the necessary information to determine the biological condition of waters. The Region also agrees that additional monitoring data (which include biological monitoring as well as physical habitat indicators, tissue chemistry, sediment chemistry, pathogens, and toxicity testing, where appropriate) would provide Colorado with a better basis for determining the effectiveness of its water management program and answer the question: *What is the condition of State waters?*

Background to Regional Response:

The fact that Colorado's program focuses on chemical-specific water quality testing is not surprising. For the past 20 years, EPA's water quality standards and permitting programs have emphasized a chemical-specific approach to water quality. Colorado's monitoring program, which supports water quality standards and permitting, has reflected this historic approach. In the past

several years, EPA's water quality standards and permitting programs have emphasized more advanced techniques such as biological criteria. And while there is not yet a long range plan in place, Colorado has employed several more advanced testing techniques including biomonitoring, habitat assessments, and toxicity testing. In addition, Colorado, like other interior Western States, has had to operate its ambient monitoring and assessment program under a chronic shortage of resources. Only this year has the Section 106 grant funding formula been revised to better reflect the needs of Western States and their ambient monitoring programs. EPA's monitoring and assessment regulations, guidance, and policies are not specific regarding what constitutes an adequate monitoring and assessment program and do not provide clear priorities for directing limited resources.

There are several activities in the Region that will serve to provide technical assistance to Colorado in long-range planning to expand its monitoring program. First, the Region is developing a 5-year plan for developing Regional and State capabilities in biological monitoring and assessment. Colorado's technical assistance needs will be part of this plan. Limited financial resources are available from EPA Headquarters to meet some of these needs through contracts for technical assistance. This Regional 5-year plan can serve as a basis for Colorado's long-range plan. One example of technical assistance that will be part of this 5-year plan will be technical support to Colorado for a database for biological data that also includes some data analysis capabilities. Such a database is currently being developed under an EPA contract with Headquarters, and will soon be available to State programs. The Region plans to work with Colorado to incorporate their existing data into this database, and to provide training on database use for future information management needs. Clarification of additional needs for technical assistance in the area of biological monitoring and assessment will take place during State visits as well as during a Regional biological monitoring and assessment workshop to be scheduled in the next few months.

A second Regional activity that will provide technical assistance to Colorado for long-range planning is the Region's involvement in EPA's Environmental Monitoring and Assessment Program (EMAP) Western Pilot. The EMAP Western Pilot will be carried out in partnership with EPA's Office of Research and Development, the States, and other monitoring agencies. One objective of this project is the development of needed environmental indicators appropriate for characterizing the ecological condition of water resources. We will be meeting with Colorado and other Western States to discuss their involvement in this project and identify assessment questions. Within Colorado, biological, chemical, and habitat data will be collected and analyzed. A long range strategic plan is currently being prepared by the Region's EMAP Western Pilot Coordinator, which will address the involvement of Colorado's monitoring and assessment program, including the critical element of technology transfer.

The Region will continue to work with Colorado, through the Continuing Planning Process and the Performance Partnership Agreement (PPA), to incorporate activities and measures as appropriate, to support long-range planning for water quality monitoring, assessment, and reporting.

Recommendation 3-2.

Request that Colorado develop and implement a process to obtain and use other sources of organic pollutant monitoring or monitor for organic pollutants themselves.

EPA Region 8 Response:

The Region agrees with the recommendation.

Background to Regional Response:

The Region is concerned that Colorado does not have a process to obtain data for organic pollutants, such as pesticides and herbicides, for use in water quality assessments. The Region will request that Colorado develop and implement a process to obtain and use such data, as part of their own monitoring program or from other state divisions and federal agencies. Given that other state divisions and federal agencies do monitor and test for organic pollutants, the Region believes more progress can be made by developing a structured process for obtaining organic pollutant data from these sources. This agrees with EPA's long-term 305(b) goal of increasing input from monitoring sources outside of the core State program.

The Region notes that Colorado's Water Quality Control Division is currently forming a Colorado Water Quality Monitoring Committee, which is made up of representatives of various entities (i.e., local, state, and federal agencies, academia, industry, and non-profits) that conduct water quality monitoring in Colorado. This Committee should serve as a good forum for improving coordination and data-sharing. The Region has a representative on this committee, and we will request and encourage data sharing and the development of structured processes for filling data gaps in Colorado's monitoring program. In addition, data-sharing should be improved by the use of EPA's modernized STORage and RETrieval (STORET) water quality database by agencies and groups in addition to Colorado's Water Quality Control Division. The modernized STORET is more user-friendly and better captures the types of data and information which allow for data-sharing, and their use and technical support is strongly supported by the Region.

To ensure that there is adequate coverage for monitoring and assessment in Colorado, the Region will ask for monitoring work plans and monitoring strategies. The development of work plans and strategies should serve to identify which parameters will be measured by Colorado's monitoring program and where. They will also allow for pro-active coordination with other monitoring agencies or groups for obtaining additional parameters as well as water quality data from locations not monitored. In addition, the work plan and strategy should include a section on coordination, where Colorado can identify other agencies or groups with data and information that can support Colorado's ambient monitoring and assessment program, and describe the processes that will be used for data sharing.

Recommendations 4-1 and 4-2.

Persuade Colorado to follow the national guidance in preparing the water quality assessment report and include complete, accurate information.

Work with Colorado to develop a database to maintain water quality assessment data.

EPA Region 8 Response:

The Region agrees with both recommendations.

Background to Regional Response:

The Region agrees that Colorado did not follow the recommendations in the national guidance, specifically the preparation of tables of the percent of assessed waters (river miles and lake acres) fully, partially, or not supporting each individual use classification. We note that States are not required but encouraged to follow national guidance. In this particular instance, though, EPA has strongly encouraged and supported the States in presenting their assessment information in the formats described in the national guidance and presented in the appendices of the National Water Quality Inventory Report to Congress for several reasons. First is to ensure consistency in reporting of 305(b) assessment data such that State data can be aggregated into a national summary for use by the Congress, the public, and others. Second, the 305(b) data presented in these tables are also the Core Performance Measures that EPA will use for reporting progress under the Government Performance Results Act. Colorado has committed to reporting this information as part of the PPA.

Colorado's 1996 305(b) report presented assessment data tables such as (1) State summary data on overall use support and (2) miles and lake acres meeting, not meeting, and not attainable for fishable and swimmable criteria. One target audience for Colorado's 305(b) report is the State's Water Quality Control Commission, and this presentation of data met their needs for information. These tables do not translate into the tables requested by EPA, which identify the percent of assessed miles and lake acres fully, partially, or not supporting each individual use classification. One solution to this incompatibility of data is the development and use of a database for water quality assessment data, which can sort and present the data into the specific formats requested by various audiences. An assessment database will enable Colorado to meet the information needs of both the State and EPA, as well as other users of assessment information such as local governments, citizens and watershed organizations.

EPA's old assessment database, the WaterBody System, was not user-friendly and was not adopted by all States nor supported technically by the Region. Colorado did not use the WaterBody system and did not develop or use an alternative assessment database. Instead, Colorado carried out assessments using data downloads from STORET, EPA's water quality database. EPA Headquarters, through a contractor, is currently developing a new Assessment Database, which will address many of the shortcomings of the WaterBody System. Colorado has undertaken the first steps towards using this database by working with EPA's contractor to identify

waterbody segments that will serve as the spatial framework for this database. This work has been completed, and next steps are to incorporate the data from State assessments into the database once a final version is distributed by EPA. The Region plans to provide technical support for this database, and work with Colorado to ensure its use. Colorado should be able to report assessment information in EPA's requested format for the year 2000 305(b) report. Thus, the Region agrees with and is committed to the recommendation to work with Colorado to develop a database to maintain water quality assessment data.

The report indicates that "Colorado made presumed assessments by classifying waterbodies as fully supporting in the absence of organic pollutant monitoring data." The Region agrees with the national guidance that "presumed assessments" (e.g. determining that a waterbody is in full support in the absence of sufficient information to make an assessment) are not appropriate. The Region will work with Colorado to prevent such presumed assessments from being used. However, the Region does support State assessment determinations of "evaluated waters", consistent with the national guidance. Evaluated waters are those waterbodies for which the use support decision is based on information other than current site-specific ambient data, such as data on land use, location of sources, predictive modeling, and questionnaire surveys of fish and game biologists. The Region supports State discretion in making determinations of impairment, particularly in situations where obvious problems occur, in order to more efficiently utilize limited ambient monitoring resources. We also recognize that Colorado cannot directly monitor for all possible types of data in order to conduct use support determinations.

Recommendations 5-1 and 5-2.

Clarify Region 8's role and commitment for providing technical and program support to Colorado's monitoring and assessment programs.

Identify weaknesses and areas of improvements for Colorado's monitoring and assessment programs and assist in the implementation of corrective actions.

EPA Region 8 Response:

The Region agrees with both recommendations.

Background to Regional Response:

The Region has recently expanded the monitoring and assessment program staff in several areas including several new full-time and part-time positions to provide support to the Region's monitoring and assessment program activities, one new student intern position, and part-time support from several program areas including biologists at the Region's laboratory. There are plans to add two temporary full-time positions to provide technical assistance for Regional monitoring projects. In addition, the Region has hired a new full-time water quality database administrator. These recent increases in staff provide added capacity to devote to issues and needs identified with Colorado's monitoring and assessment programs.

The Region has provided technical and program support to Colorado's monitoring and assessment programs in the past, and will continue to do so in the future. Relatively recent technical support efforts included Regional workshops supporting biomonitoring and bioassessment, and Regional participation in Colorado's Sediment Task Force which developed implementation guidance for determining impacts to aquatic life by the deposition of sediment. Past program support included review of monitoring work plans when provided, workshops supporting the 305(b) process, review of 305(b) reports, and contract support for spacial display of waterbody segments.

Present and planned technical and program support activities include support to Colorado for several EPA water quality and assessment databases (including the modernized water quality database STORET, an assessment database, and a database for biological data). We will continue to provide technical support to Colorado on biological monitoring/bioassessment. Our Region's and Colorado's involvement in the EMAP Western Pilot and our completion of the Regional-EMAP project in Colorado headwater streams will allow for technical transfer opportunities regarding monitoring designs and improved environmental indicators. Our Region's and Colorado's involvement with the National Fish Tissue Study as part of the Clean Water Action Plan will reduce the uncertainty associated with current fish tissue monitoring activities, and eventually provide Colorado with comprehensive information on the severity and extent of fish tissue contamination in the state. The Region will continue to support the formation of a Colorado Water Quality Monitoring Committee through active participation, which we view as very important towards improving data-sharing and coordination among the multiple monitoring agencies and groups in Colorado. In addition, the Region provides financial and technical support for monitoring activities in Colorado as part of the nonpoint source program, TMDL program, and several other water quality management programs.

Concerns and areas of improvement for Colorado's monitoring and assessment programs will be identified as part of a state visit/program review, to be conducted in Colorado during FY99. In addition, we will continue to participate in the Continuing Planning Process, the PPA process, and other planning activities.

APPENDIX II

STATE RESPONSE

February 2, 1999

Bennie S. Salem
Divisional Inspector General
U.S. Environmental Protection Agency
Office of the Inspector General
Central Audit Division
726 Minnesota Avenue
Kansas City, KS 66101

Re: Audit Report E1HWF8-07-004-XXXX

Dear Ms. Salem:

Enclosed are Colorado's comments on the draft report of the Colorado's Water Quality Standards, Monitoring, and Reporting Audit. We appreciate your recognition of Colorado's achievements. We are proud of these efforts and are continually striving to improve our program. We would also like to recognize the good working relationship with Region 8 EPA, that has evolved over the years. Their support and technical advice in the areas of monitoring, standards and assessments have been invaluable.

We appreciate the opportunities you have afforded us to review several of the issues that were identified at the preliminary stages of the audit process. This dialogue has resulted in many important clarifications and improvements in the evaluation. However, in review of the report we found the following two facts regarding our program to be inaccurate or potentially misleading to the reader:

1. *On page 6, regarding adoption of "swimmable" uses where evidence that the use is in place for a specific stream segment.* There still appears to be confusion between class 1 and class 2 recreation. Although the term "non-motorized travel" is evidence of recreation, it is not evidence of class 1 recreational use (please see the regulations). Rather, this term has been used to refer to hiking or wading through a stream. Kayaking and tubing are recognized as class 1 uses (see 31.13(1)(a)); however, there is no documented use in the specific segment in question (North Fork of the Gunnison River, segment 3). Examination of OIG's supporting documentation bears out that Colorado has correctly assigned recreational use classifications, according to our regulations. Moreover, we believe that Colorado's EPA-approved definition of which recreational uses should be class 1 (based on the likelihood of ingesting water) continues to be appropriate.

Bennie S. Salem
February 2, 1999
Page 2

2. *On page 7, regarding adoption of Clean Water Act criteria for water supply.* Contrary to the auditors' assertion, Colorado has consistently applied its policy to protect human health and has done so in accordance with Clean Water Act requirements. OIG has not recognized that Colorado's approach is fully acceptable to EPA.

If you or your staff have any comments or questions, please call Sarah Johnson, Unit Manager, Water Quality Control Division at 303-692-3609, or Mary Pearce, Internal Auditor at 303-692-2104.

Sincerely,


Lee Thielen
Associate Director

Enclosure

cc.: J. David Holm, WQCD
Sarah Johnson, WQCD
Mary Pearce, OAS

STATE OF COLORADO

Bill Owens, Governor
Jane F. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

February 9, 1999

Bennie S. Salem
Divisional Inspector General
U.S. Environmental Protection Agency
Office of the Inspector General
Central Audit Division
726 Minnesota Avenue
Kansas City, KS 66101

Re: Audit Report E1HWF8-07-004-XXXX

Dear Ms. Salem:

Colorado would like to offer clarification of our comment regarding issue 2-2 in your draft audit report. I have attached a "redline" version of the affected pages and a copy of the entire revised comments. We have also sent these documents to your staff via electronic mail.

If you or your staff have any comments or questions, please call Sarah Johnson, Unit Manager, Water Quality Control Division at 303-692-3609, or Mary Pearce, Internal Auditor at 303-692-2104.

Sincerely,

Lee Thielen
Associate Director

Enclosure

cc.: J. David Holm, WQCD
Sarah Johnson, WQCD
Mary Pearce, OAS

Colorado Department of Public Health & Environment
Water Quality Control Division's
Comments Regarding
Colorado's Water Quality Standards, Monitoring and Reporting Audit

EXECUTIVE SUMMARY

We recommend the Regional Administrator

- # ***Work with Colorado to improve its support for water quality standards decisions and disapprove future water quality standards submissions which lack adequate analysis and support.***

Colorado Response:

We welcome EPA Region 8's continued involvement in our standards-setting process and appreciate the Region's willingness to work with us on the front-end of the process, rather than just at the approval/disapproval stage. The high level of technical and scientific involvement offered by the Region over the past 20 years has helped make Colorado's programs very successful.

- # ***Assist Colorado in increasing the comprehensiveness of its state water quality monitoring program.***

Colorado Response:

Colorado welcomes EPA Region 8's continuing involvement in the development of annual and long-range monitoring plans. We rely on their participation as we broaden our scope and continue to work with a full range of stakeholders to enhance our water quality monitoring efforts.

- # ***Urge Colorado to follow national guidance in preparing the water quality assessment report.***

Colorado Response:

Colorado is committed to an ongoing process of improving the usefulness of our water quality assessment reports and increasing their consistency with national goals. Colorado is working closely with Region 8 to provide the information necessary to assist EPA in preparing the national water quality assessment report.

- # *Develop procedures to oversee and evaluate Colorado's water quality testing, assessing, and water quality assessment reporting.*

Colorado Response:

Colorado welcomes EPA's assistance in our ongoing efforts to continually enhance our water quality testing, assessing, and water quality assessment reporting. We have invited Region 8 to be a partner in the Colorado's newly formed "Colorado Monitoring Council" which is intended to improve not only the Water Quality Control Division's testing, assessing and reporting procedures, but also that of our many federal, state, local and private partners.

CHAPTER 2

We recommend the Regional Administrator:

- 2-1 Work with Colorado to adopt the national swimmable use classification and corresponding criteria limits where attainable, or conduct the required special studies with consideration of basinwide special studies. Disapprove Colorado water quality standard submissions which do not comply with these options.***

Colorado Response:

Colorado acknowledges that more documentation is desirable to support decisions regarding adoption of recreational use classifications. Colorado has recently implemented a procedure to address this concern at the time of the basin triennial review and subsequent rulemaking hearings. This will include providing the Water Quality Control Commission (and EPA) with completed Recreational Use Attainability Analysis forms that will be a structured assessment of the factors affecting the attainment of the "swimmable" use.

However, we believe that the OIG auditors have mis-characterized Colorado's adherence to regulatory policy by asserting that Colorado has not adopted swimmable use classifications where there is evidence that the use is in place. Colorado has two different recreational use classifications: recreation class 1 and recreation class 2. Recreation class 1 is the classification that meets EPA's criteria as "swimmable". Colorado has explicit regulatory definitions of what activities are considered class 1 and class 2 recreational activities, based on the likelihood of ingestion of small quantities of water. Wading, fishing and camping are not considered evidence of class 1 recreation (i.e. activities in or on the water when the ingestion of small quantities of water is likely to occur). For the "swimmable" use protection to be applied, evidence of "recreation" is not enough; it must be evidence of class 1 recreation. Region 8 EPA has been aware of Colorado's distinction between class 1 and class 2 recreation since its adoption in its current form in 1991. The agency has never questioned or contested this regulatory distinction. OIG has substituted its own concept of what "ought to be" swimmable, instead of relying upon Colorado's established and approved regulatory definition.

Upon examination of the supporting evidence provided by OIG, the 16 instances of purportedly inappropriate classification are were actually correctly classified. Class 1 recreational activities are not documented in those segments. Kayaking and tubing were not documented in the segment in question, and "non-motorized travel" and "occasional wading" are not evidence of class 1 or "swimmable" uses in Colorado.

2-2 *Recommend Colorado consistently adopt Clean Water Act criteria designed to protect human health for all waters classified for drinking water supply.*

Colorado Response:

Colorado believes that OIG has mis-characterized Colorado's implementation of human health protection standards. Colorado has adopted human health standards for all pollutants for which EPA has developed Clean Water Act criteria. EPA has established criteria based upon exposure through two pathways: first, ingesting contaminated fish flesh; and second, ingesting

contaminated fish flesh plus drinking the water in which these fish reside. In addition to these two human health protection approaches, Colorado has established standards a third way. Where there is only a water supply use, we have adopted criteria from the Safe Drinking Water Act. Colorado has not adopted more restrictive EPA criteria that provide an additional level of protection to protect against the combined risks of drinking water and fish ingestion unless there was reason to believe that significant fishing occurs for the waters in question. Colorado has consistently applied this approach. Furthermore, EPA Region 8 has determined that this approach is protective of human health and is consistent with federal requirements.

2-3 Continue to encourage Colorado to develop written justification supporting the appropriateness of adopting ambient-based criteria and disapprove water quality standards submissions that include inadequate analysis.

Colorado Response:

Colorado acknowledges that more documentation is desirable to support decisions regarding adoption of ambient standards, particularly in triennial reviews subsequent to their initial adoption. Colorado has recently implemented procedures to ensure that the triennial review records are more instructive regarding the history of the segments in question. The Division will identify when the existing standards were adopted and recap the basis for the decisions in the Rationale document. An analysis of whether there is a basis for maintaining ambient standards in light of existing conditions will also be provided.

CHAPTER 3

We recommend the Regional Administrator:

3-1 Provide technical assistance to help Colorado formulate a long range plan to expand its monitoring program to include advanced testing techniques.

Colorado Response:

Colorado is committed to improving its monitoring program and sees the refinement of our monitoring program as an ongoing, evolutionary process. We welcome any technical assistance

that EPA Region 8 can provide us towards this end. At the state level, we have already taken a significant step towards improvement by convening a Statewide Monitoring Council in November 1998. Participants on this council include representatives from government (including EPA), academia, the regulated community and citizens groups involved in water quality monitoring in Colorado.

With regard to the OIG's portrayal of Colorado's monitoring program as lacking in advanced techniques, we are uncertain what the OIG means by the term "advanced". Colorado interprets this to mean that the state does not have the most desirable balance, in OIG's opinion, of different types of monitoring activities. Indeed, Colorado's program has placed the greatest emphasis on water chemistry, due to both the strong numeric water quality standards program that has been developed in Colorado, and the recent national emphasis on identifying impaired water bodies and developing total maximum daily loads (TMDLs). This is not to say that the state has completely neglected other types of monitoring. As stated by the OIG, we do conduct biological and physical monitoring including macroinvertebrate surveys, fish population surveys, and habitat surveys. We are currently expanding our capabilities to increase these types of monitoring and assessments within the constraints of multiple competing priorities for time and resources.

Region 8 EPA has provided Colorado with substantial assistance and guidance in biological and habitat monitoring through various means. Regional staff members have conducted bioassessment workshops and individuals have participated on Colorado's advisory committees for developing biological monitoring methods and for developing methods to assess clean sediment impacts to aquatic life. Colorado welcomes the continuation of this type of involvement in the future. We have asked for assistance in the installation and implementation of a STORET-compatible database for biological and physical habitat data, and we will be working with Region 8 in developing a comprehensive long-term monitoring strategy.

3-2 Request that Colorado develop and implement a process to obtain and use other sources of organic pollutant monitoring or monitor for organic pollutants themselves.

Colorado Response:

Colorado's surface water monitoring program presently does not include monitoring of organics such as pesticides and herbicides because (1) it has been our observation that organic chemicals attributable to agricultural activities have rarely been found in harmful concentrations in Colorado surface waters, and (2) due to the very high costs of monitoring these compounds, we have relied on data collected by other programs or other agencies while focusing our available resources on higher monitoring priorities. For example, over the past three years approximately 300 groundwater wells, many located in major agricultural areas of the state, have been tested for nutrients, pesticides and herbicides by the Division's groundwater program. We consider data collected by the U.S. Geological Survey in our assessments. The U.S. Geological Survey has monitored agricultural chemicals in their National Water-Quality Assessment Program investigations in the Rio Grande, South Platte River, and the Upper Colorado River basins. Drinking water systems in Colorado sample their source water for a broad suite of organic chemicals, including pesticides and herbicides.

Colorado welcomes ideas for a better means to incorporate organic chemical monitoring data into our assessments and will explore, with Region 8 EPA, the need and opportunities for organic chemical monitoring by the state in our efforts to develop a long-term monitoring strategy.

CHAPTER 4

We recommend the Regional Administrator:

4-1 Persuade Colorado to follow national guidance in preparing the water quality assessment report and include complete, accurate information.

Colorado Response:

Colorado shares EPA's national concern that currently, because of inconsistent reporting of water

quality among states, EPA has difficulty aggregating this state data to provide comparisons and analysis on a national scale. EPA must grapple with the results of contradictory themes in the Clean Water Act: flexibility and consistency. On the one hand, the CWA directs the States and Tribes to develop standards systems and water quality management programs that fit their individual needs. This leads inevitably to different and unique systems in every state. On the other hand, EPA is directed to ensure a base level of protection for the nation's waters and to report on the condition of the nation's waters to Congress. This is tremendously difficult if there are more than 50 different systems to reconcile.

Colorado acknowledges that we do not currently follow the entire body of national guidance in preparing the water quality assessment report, although we do meet all regulatory reporting requirements. OIG might acknowledge that "guidance" is advisory, not binding. Colorado is committed to making ongoing progress towards a complete, accurate and comprehensive water quality assessment report. Colorado's 1998 305(b) Report is evidence of that commitment and that progress. Within the constraints of available resources, Colorado is also committed to increasing the consistency of its assessment reports with federal guidance.

4-2 *Work with Colorado to develop a database to maintain water quality assessment data.*

Colorado Response:

Although EPA does not require a water quality assessment database, Colorado agrees that a database to maintain water quality assessment information would improve our ability to report the types of information that EPA desires. Colorado maintains extensive documentation of all water quality assessment decisions in the Statements of Basis and Purpose. To have these assessments summarized in a database could make them more accessible and easier to report. We look forward to receiving the newly revised Water Body System database from EPA Headquarters when it becomes available (possibly as early as February 1999). Colorado and Region 8's resources should not be spent duplicating Headquarters activities, especially in view of EPA's

concern about national consistency (see 4-1 above).

CHAPTER 5

We recommend the Regional Administrator:

- 5-1 Clarify Region 8's role and commitment for providing technical and program support to Colorado's monitoring and assessment programs.*

Colorado Response:

Colorado continues to welcome the contributions from Region 8 technical staff to our standards, monitoring and assessment programs. The individuals on EPA's staff have continuously assisted us with issues as varied as technical expert testimony on complex standards issues, to participating on multi-month work groups on developing clean sediment assessment guidance. Their time and assistance has been much appreciated and we look forward to continuing this valuable interaction in the future.

- 5-2 Identify weaknesses and areas of improvement for Colorado's monitoring and assessment programs and assist in the implementation of corrective actions.*

Colorado Response:

Colorado welcomes the opportunity to work with Region 8 staff in our ongoing efforts to continually enhance our monitoring and assessment programs.

APPENDIX III

ABBREVIATIONS

CFR	Code of Federal Regulations
DIMP	Diisopropylmethylphosphonate
EPA	Environmental Protection Agency
OIG	Office of Inspector General

APPENDIX IV

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