

APPENDIX C

RESPONSIVENESS SUMMARIES

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Responses were prepared for all written comments received. Examples of these are included in this Appendix. In addition, the comments received at the four public meetings held in each major watershed were recorded and responses indicated. These are listed in this appendix as well.

The input received from the members of the three citizen advisory groups was recorded in the summaries of the meetings. Action items were indicated and normally handled at or before the following meeting.

1. Design Team

The SWAP Design Team members were provided copies of program plan drafts throughout the year as the State SWAP program was being developed. Their comments and recommendations were incorporated regularly. Copies of the marked up versions have been kept and the notes from the meetings have been maintained for reference.

2. WQCD Staff

The WQCD staff was notified of the location of the SWAP program plan drafts on the web page and on the internal computer drive to which all staff have access. They were invited to provide feedback on the draft SWAP documents. All input was reviewed and either incorporated or commented on. Select staff who work directly on drinking water issues were provided copies of the drafts and asked to review and comment. WQCD management staff was furnished copies of the summaries of the monthly Design Team meetings, and of all draft plans. Periodic meetings were held to apprise them of progress.

3. Public Meetings

Copies of the draft plans were distributed before and at each of the four public meetings. Formal announcement was made and included in the draft that comments received by December 11, 1998 would be addressed in the submittal to the U.S. Environmental Protection Agency.

4. SWAP Presentations

Staff took advantage of numerous opportunities to address different groups on SWAP. A listing of the presentations appears as Appendix B. Copies of the draft SWAP program plan were available at most of the meetings, and attendees were encouraged to comment.

5. Web Page

The SWAP program plan drafts were posted on the Division's web page to provide easy access. People were invited to comment on any or all parts of the document. Comments received were responded to.

6. Individuals

Comments were reviewed and if response was requested or a return address provided, a response was either mailed or sent via E-mail.

COMMENTS AND RESPONSES

1. How will you assess point and non-point sources of pollution within the SWAAs?

R: Point and non-point sources of contamination will be identified in the inventory, and ranked in the susceptibility analysis. The first step in identifying point sources will be to collect information from the regulated agencies on activities they permit. This data will be augmented with information collected at the local level. The locations of both sets will be displayed on maps of the SWAAs. The non-point sources will focus primarily on agriculture, mining, urban and construction runoff, and timbering. SWAAs in which there appears to be significant non-point source loading from any of the sources listed will be targeted on the SWAA maps, and ranked accordingly. Resolution of the problems will be addressed with the protection plans for the PWS. [Chapter 4:4.2] Comment of JC Love

SUMMARIES OF PUBLIC MEETINGS

One meeting was held in each of the four major river basins of Colorado. An effort was made to schedule the meetings in a city that was easily reached or centrally located in each basin. Meetings were held in Montrose for the Lower Colorado River Basin, Glenwood Springs for the Upper Colorado River Basin, Denver for the South Platte River Basin, and Pueblo West for the Rio Grande/Arkansas River Basins. Meetings were approximately two hours long and were scheduled from 7-9 p.m. in the evening to encourage attendance. Meetings were held in public, handicap accessible locations with adequate parking. Each presentation involved a short presentation of the basics of the October 1998 draft, followed by a question/answer and comment period in which a dialog about SWAP and the current draft was encouraged. The Denver meeting was a series of 3 presentations given at 1:30, 3:30, and 5:30 p.m.

Meetings were advertised by submitting press releases to the major daily papers. A majority of Upper and Lower Colorado River Basin public water providers were contacted via telephone and FAXed meeting information and the SWAP fact sheet. South Platte River Basin and Rio

Grande/Arkansas River Basins public water providers were contacted via a mass mailing, including meeting location information and the SWAP fact sheet. Federal land management agencies, USDA Natural Resource Conservation Service, League of Women Voters, Clean Water Action, and Colorado Utility Council members and were invited and encouraged to attend each of the 4 meetings. Retired Senior Volunteer Program members were invited to the Montrose and Glenwood Springs meetings. Denver Water and Power Authority was invited to the Denver area meeting. A total of 91 people attended the four meetings, 17 at Montrose, 28 at Glenwood Springs, 38 at Denver, and 8 at Pueblo.

Montrose, CO (10/26/98)

Twenty-one people were in attendance. City of Grand Junction and Town of Crawford, Public Water Suppliers, USDA/NRCS, Shavano Soil Conservation District, several private citizens, and CDPHE employees Dan Beley, Mike Havens, Kathleen Reilly, and Kim Parker were in attendance.

(The comments/questions are in **bold** face and the responses in *italicized* print).

Need to include description of how mountain springs fit into surface water/ground water framework.

Agree. Refer to delineation chapter.

Discussion of how privately owned systems differ from public systems, community and non-community systems.

Disagree. The distinction for SWAP is unnecessary as SWAP addresses all public water systems community and non-community whether publicly or privately owned.

Would SWAP take primacy away?

No. Primacy is not connected to SWAP.

What will the state staffing levels be to handle the workload?

The four (4) watershed coordinators will be working with the PWSs to inform them about SWAP and how to get involved. Technical support will be available from the Division's assessment and compliance units. Interagency agreements are being developed for data collection and

integration on the contaminant inventory. The Division may contract with outside interests to accomplish some of the individual tasks for SWAP.

Will grouping of PWSs be encouraged?

Yes, where feasible and practicable. For example, PWSs located in the same SWPA will be encouraged to work together on the assessment and protection elements of SWAP.

Worst part of waiver system was the public notification procedure. Town water has better things to do.

Public notification and involvement of citizens are key elements of SWAP. Waivers will continue to be used as an incentive for locals to participate in the protection phase of SWAP. The state has developed a guide to assist locals with public participation and notice.

Senior citizens can play a strong role in public education and involvement, perhaps post results in small communities, rather than develop a report.

Agree. Voluntary involvement of senior groups such as RSVP (Retired Senior Volunteer Program) has been very beneficial to the wellhead and source water protection programs in Colorado. The public participation chapter addresses the involvement of a variety of groups in the development and implementation of SWAP, seniors are one of the groups identified as an important resource.

The option to post the results of the source water assessment is afforded small, transient non-community systems. Refer to the contaminant inventory chapter,

One citizen voiced concern about water that tastes bad, on the Ute Water system. She inquired about digging up sewer treatment plant overflow pipes at the 5th St. Bridge. Could the one incident have influenced the other?

This issue was resolved between the citizen and the water provider immediately after the meeting.

Integrity of PWS wells, intakes must be determined during susceptibility analysis. RLF and other funding sources may be available if a problem is found. Is there anything similar for private for profit systems?

No, privately owned systems cannot qualify for government grants. They are eligible for certain loan programs however.

Who oversees water-bottling companies? Would SWAP affect the bottling of water?

The Department's Consumer Protection Division has regulatory responsibility for commercially bottled water. SWAP will not directly affect the bottling of water.

Greg Trainor, a member of the SWAP Design Team, was invited to address the audience on his perceptions of the SWAP implementation. He thought that large water providers will take the lead for liability reasons and flesh out what the State can provide them. He predicted that the State would need to help the smaller PWS systems, but probably not the large ones.

Will the National Park Service be included in SWAP?

Yes, both the NPS and the U.S. Forest Service will be included in the State's SWAP efforts. Both agencies own and manage lands that will be included in source water assessment and protection areas for local water supplies. A memorandum of understanding was recently signed describing the involvement of these and other federal agencies in the SWAP effort. The NPS and the USFS will also be involved as transient, non-community water providers because both provide water to the public.

RSVP may be better than State or contractor to help get the job done.

The State encourages the involvement of citizen volunteers in the development and implementation of the SWAP. (See public participation chapter).

How does WHPP dovetail in with SWAP? Aren't there already assessments done for many of these systems?

The wellhead protection program (WHPP) will be assumed into SWAP. SWAP will include both ground and surface water protection of drinking water supplies. Yes, approximately 20 percent of the ground water systems have been delineated. These delineations will be verified and used in the SWAP.

Will SWAP become regulatory in Colorado?

The assessment phase is a mandate under the SDWA amendments of 1996. The protection phase will likely remain voluntary, as it has under wellhead protection.

How will the set-asides be used? How will match work? Big systems need it less than the smaller ones, but will have an easier time coming up with the match.

The set aside funds will be used to complete the assessment phase of SWAP. The assessment phase includes public participation, delineation, contaminant inventory and susceptibility

analysis. The match will not be required (this determination was made weeks after the public meeting).

A list of PSOCs would be necessary to help PWSs in inventory step.

Agree. The list of PSOCs is included in the plan.

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Glenwood Springs, CO (10/27/98)

Thirty-one people were in attendance. Towns of Silt, Meeker, and Steamboat, Garfield and Eagle Counties, Northwest Colorado Regional Council of Governments, Public Water Suppliers, a few private citizens, reporters from two local papers, and CDPHE employees Bill McKee, Dwaine Watson, Kathleen Reilly, and Kim Parker were in attendance.

Is there money available in addition to the 319 funds for smaller systems to use for developments?

Yes. There are a variety of grants and loans available for small systems to fund needed improvements or protections that emerge in the course of the source water assessment.

Will this program be voluntary for public water suppliers?

Yes. The assessment phase is mandated by the federal SDWA, but the protection phase, the decisions on what actions to take to ensure the safety of the water source will be voluntary.

How far back will the State go to identify PSOCs? Further than the 1960's?

As far back as necessary with the state and federal data bases to develop a reasonable assessment of the potential sources of contamination. The locals will be encouraged to identify sources that could pose a threat to the water source. This may mean going back 20 years or more for PSOCs that could threaten a ground water source.

Will there be substantial cooperation from the federal land management agencies, such as BLM, USFS, and NPS? Being source water areas will impact their recreation, timber harvesting, and grazing activities!

An interagency agreement between these agencies and the USEPA to cooperate on SWAP was signed. Under the agreement, the signatories will direct technical assistance to developing

drinking water source assessment and protection programs, and will assign priority to drinking water areas identified as needing protection.

Will systems that have been assessed using the Wellhead procedures need to be redone or just revisited?

Revisited.

How will SWAP updates be handled?

Since this will be an iterative process, which means that it will begin with the information currently on hand, and build as knowledge and experience grow, protection plans will need to be looked at every couple of years to ensure that they remain current. The PWS will review the protection plan every two years and notify the State of any changes that were made or are needed.

Do we have access to any other state's plans?

Yes, those that have already been submitted to the EPA, are made available on the EPA and GWPC (Ground Water Protection Council) web page, and in hard copy through the regional EPA office. In addition, the State keeps abreast of regional developments with monthly conference calls with EPA and the other Region VIII states.

What is our web page address?

The current address is <http://www.cdphe.state.co.us/wq/sw/swaphom.html>. We are working on shortening it. It appears on the SWAP document.

Will SWAP address how water quantity issues can affect water quality?

Not immediately. It will not be a focus in the initial SWAP document. The connection may emerge on a site by site basis.

What is the goal of SWAP?

The goals of state SWAPs as defined in the statute are ... for the protection and benefit of public water systems and for the support of monitoring flexibility... The State's goal, as adopted by the Design Team, is found in the introduction.

Will the PWSs be responsible for replacing the water source in event of emergency, ensuring a backup supply or other contingency plans?

Ideally, yes. However, unlike WHPP, SWAP does not contain a requirement to develop a contingency plan that would address the issues of replacing the water source in the event of a catastrophic incident or a drought. The need to develop a contingency plan will likely emerge in

the process of developing source water protection plans at the local level. There is no requirement to develop contingency plans as part of the protection plan, but it is desirable and will be encouraged.

Will collaboration of PWSs be mandatory during the assessment phase?

No, but where it appears feasible and desirable, PWSs located within the same SWPA will be encouraged to partner to protect the source water area.

Why are you spending all this time, money, and effort on a new program that doesn't have any new teeth? We need something that will require polluters to stop polluting.

The development of SWAP is not costly, and the potential benefits are impressive. SWAP can be instrumental in finding contaminant sources that are a threat to the water source that may not currently be permitted. It will also highlight the need to monitor unregulated sources that pose a threat to the source water, and will help find sources of contamination that should be permitted. The contaminant inventory will also identify the regulated activities within the SWPA and examine permit compliance.

A point was made that CDOT (Colorado Department of Transportation) is a serious offender, and needs to clean up the junk they leave behind. This will be part of the education process that is a critical component of SWAP.

Telephone contact was made with CDOT to inform them of the concerns expressed. CDOT will be targeted to participate in SWAP as roads are a potential source of contamination where they dissect or traverse a SWAA, and are used to transport hazardous materials. BMPs are often very effective in reducing the risk of transportation-related sources of contamination.

Bill McKee, Watershed Coordinator for the Upper Colorado Basin, reiterated that while SWAP offers no new regulations, it does not preclude the development of local level regulations during the protection phase.

Is there an opportunity for PWSs to beat the timeline and start early? Growth issues need answers NOW, not in five years! Land use and zoning issues need to be in place before the growth occurs.

Yes. PWSs are welcome to start early in putting their SWAP program together. The results of the SWAP assessment should be a very useful in long and short range planning to protect the water source.

Request was made to clearly outline the land use planning issues in the SWAP draft to provide guidance to communities when writing protection plans.

Land uses are among the items assessed in the contaminant inventory. Uses that could pose a problem for the water source are identified in the list of potential contaminant sources. The

decision on what actions to take regarding land use is the responsibility of the municipal and/or county governments; the State does not have land use authority.

When does the money for assessment become available?

The set aside funds will be available once the SWAP plan is submitted and the work plan for expenditure of the funds is approved by the regional EPA.

Source water protection areas need to be considered when land use decisions are made. Guidance documents need to be developed for and given to regulators, land use decision-makers, and need to make sure that interagency and intergovernmental MOUs are in place.

The GIS maps of the source water areas will be provided to county and municipal governments. Water providers will be required to take formal action to adopt or endorse the boundaries of the SWPAs, and to cooperate with other PWSs located within the same SWAA to protect the shared water source. Technical assistance on the vulnerability of SWAAs will also be available upon request. Guidance on actions to take or to avoid within the sensitive areas will be available as well upon request.

Will the GIS locations of intakes and wells be made public?

This is an issue that has come up among the Design Team members and in the public meetings. The overriding concern expressed is the vulnerability to terrorist action or vandalism if the locations of the intakes and wells are made public. The issue is under consideration. (A decision was made not to publish the locations on the Internet).

With regard to vulnerability/susceptibility analysis, what was expected? Are PWSs interested in doing assessments?

The approach for the susceptibility analysis will be iterative. Determining the vulnerability of the water source to contamination will involve assessing and ranking the potential sources of contamination identified in the contaminant inventory. The process will begin with the most serious threats. A decision matrix is being developed that will account for the most serious concerns, and ranks them based on a few factors. The State will attempt to ensure that the factors are consistently applied so that the rankings that emerge are uniform across the state

A number of surface water PWSs has expressed an interest in undertaking the SWAP assessments.

Is the State tracking zones of nitrate?

Yes. Nitrate concentrations are being tracked as part of the ground water sampling that the WQCD undertakes to identify areas that exceed the maximum contaminant levels for specific pesticides and fertilizers. The WQCD generates annual reports on the results of the sampling,

where exceedances are noted, the CSU Extension Service works with local land and well owners to employ best management practices to reduce the levels.

How will SWAP relate to BMPs and NPS pollution sources?

Non-point sources of pollution will emerge in the contaminant inventory. The severity of the source(s) will be ranked through the susceptibility analysis. Those sources that receive high and moderate susceptibility rankings will be brought to the attention of the public, and will be targeted in the local source water protection efforts.

How will PSOCs be handled at the local level?

We suggest that PWSs cultivate a relationship with owner/operator of the source of contaminants, and encourage the development and adherence to best management practices (BMPs). Land use decisions that would remove or reduce the likelihood of contamination will need to be addressed at the local or county level.

Will spill emergency waivers be available with SWAP?

No, but SWAP can be used to reinforce or review emergency response procedures for PWSs.

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Denver, CO (11/17/98)

Forty-one people were in attendance. Denver Area Municipalities, Denver Regional Council of Governments, Public Water Suppliers, USDA Forest Service and, USDI Bureau of Land Management, USDI Geological Survey, and CDPHE employees Richard Parachini, Kathleen Reilly, and Kim Parker were in attendance.

1:30 Meeting

How long will EPA approval take?

Up to 9 months.

Where do the SWAP funds come from?

Congress has made funds available through the 1996 amendments to the federal Safe Drinking Water Act for improvements to public water treatment facilities. The SDWA allows each state to set aside 10% of the allotment for SWAP assessment activities.

Does assessment include delineation?

Yes.

How will the assessment results be reported?

A final decision on how to report the results of the assessment has not yet been made. Methods under consideration include using the annual consumer confidence reports (CCRs) that every community water system must issue to consumers starting in October, 1999. Other methods described in the SWAP Plan include posting the results in a central location in the community, or at the office of the PWS. They may also be mailed to consumers separate from the CCR mailing. Small businesses may find it convenient to post it on-site at the business.

The public may be confused between the mandatory assessment and voluntary protection phases of SWAP.

This is commonly the case with a new program that has both voluntary and mandatory components. The distinction is made a number of times in the SWAP Plan. It is also emphasized in the Fact Sheet developed on SWAP, and is repeated regularly in the presentations and public meetings conducted on SWAP.

What does threat to water supply mean?

A threat to a water supply is any activity or land use that produces, stores, transports, or disposes of contaminants the nature and quantity of which could pollute a drinking water source. Examples

include roads that run through or adjacent to a water source over which hazardous materials are transported, or a gas station with underground storage tanks.

What will be done about abandoned mines?

Abandoned mines will be included in the contaminant inventory of the SWA. Based on what is known about the water quality impacts from the mine, an effort will be made to assess the vulnerability or susceptibility of the water source to contamination from the mine. The abandoned mine will be ranked in accordance with the susceptibility analysis procedures outlined in the state SWAP, and assigned a high, moderate or low ranking. A decision on what to do with the assessment and ranking will occur when the protection plan for the SWPA is formulated.

How will susceptibility analysis be made objective?

The Design Team is working with the State on developing an approach that will aim at objectivity. Making certain that the susceptibility analysis can be applied relatively uniformly across the state is key to the success of this element. Producers, landowners, dischargers, etc. must be confident that they will be treated consistently and fairly in the ranking process. We are looking at a non-numerical matrix that will account for the critical factors in determining susceptibility, and will be relatively easy for local groups to use.

How do ditches affect or change source water areas?

Ditches used to convey drinking water will be identified in the source water assessment. Where they are part of the delivery system they will be evaluated to determine their safety and integrity. The potential for contaminants to reach the intake or well through the ditch will be examined, and will be factored into the susceptibility analysis. Ditches located within the SWAA that have other uses will be identified in relation to the potential to adversely affect the source water.

How will the \$1.6 million be distributed? Are these funds only for the assessment phase?

A final decision on the distribution of the \$1.6 million in set aside funds has not yet been made. The WQCD will likely look for outside contractors to assist with the assessment elements. These funds can only be used for the assessment phase. It is anticipated that the USEPA will make additional sources of funding available for the protection phase.

Will only point sources be considered during the assessment? NPS pollution can contribute pathogens. Are treatment plants PSOCs?

Both point and non-point sources of contamination will be considered. Treatment plants will be included in the regulated databases as PSOCs.

How will susceptibility analysis deal with determining risk when there are no data? Where there are no data, and a determination to collect data is made, where will those monies come from?

As a starting point, susceptibility analysis will examine the potential threat and risk posed by an activity or land using available data. A series of factors will be taken into account to determine the threat and risk to the source water. Where data are unavailable, default rankings will be used. A vulnerability ranking of high, moderate or low will be assigned depending on the threat and risk rankings received. Decision matrices will be developed to ensure that the rankings for the same or similar activities are uniform across the state. The collection of data to support or complete susceptibility analyses will be addressed as the program evolves. Support for these activities may come from the state revolving loan fund, or from other sources.

Will susceptibility analysis and assessments err on the side of production or protection?

Protection of water quality is the priority.

What is the difference between community and non-community public water systems?

This question was answered, the definitions are also included in the SWAP glossary.

When will the determination be made whether a source is ground water, surface water, or combined systems?

This determination has already been made for all PWSs regulated under the SDWA.

What are the incentives for systems to develop protection plans?

There will be the opportunity to qualify for waivers from particular types of sampling and testing, and possibly direct financial assistance later in the process. A secondary incentive will be the fact that the results of the assessment must be made public. If the State undertakes the assessment, it will be very conservative. The PWS may want to have a role in the process.

It seems like protection plans for PWSs are voluntary and yet not voluntary.

Protection plans are voluntary from the State's perspective, but the customers may demand that protection plans be developed once they are made aware of the findings of the assessment. Financial incentives for some PWSs may be substantial enough to be a strong incentive also.

How well do you think large and small PWSs will cooperate?

The assessments are mandatory for all PWSs, large and small, community and non-community. It is anticipated that the large systems will undertake the assessment themselves. The small systems, which generally have more problems, and fewer resources to address them, will need assistance.

The state is prepared to provide the assistance to the small systems to complete the assessments within the mandated time frames.

Where small and large systems are located in the same SWPA, partnering to develop SWAPs and SWPPs will be encouraged wherever feasible.

Do we need to include the SWA above the point of diversion in transbasin diversions?

Yes, source water areas must include the entire watershed upstream of the diversion point.

How will low levels of contaminants such as nutrients be dealt with that may not show up as PSOCs in the upper parts of a SWA, but does downstream?

Nutrients may not be a problem above an impoundment, but if the impoundment becomes eutrophic, it is of great concern to downstream users. All significant sources of nutrients, both point and non-point sources will be identified as PSOCs, if there is an eutrophication problem, the sources of nutrients should definitely be flagged as PSOCs.

Is SWAP part of the Consumer Confidence Reports?

No, SWAP is covered in a separate section of the SDWA. However, the assessment results may be included in the annual CCR issued by the water provider.

Will the State be able to provide the PWSs with a list of PSOCs and associated activities?

Yes.

Who will pay for the assessment? The PWS or the State?

Funding to cover the assessment is available in the \$1.6 million set aside from the state revolving loan fund. The State will use these funds for the assessments, and hopes to leverage them with in-kind or cash contributions from the local water providers.

How much could the NPS media campaign help increase awareness about SWAP?

The NPS media campaign could be very helpful in bringing focus to SWAP. We will look into this.

Would it be possible to combine SWAP's needs for money with legislature #1288?

Support for SWAP will be ongoing beyond the assessment phase for which the \$1.6 million is available. It is likely that the USEPA will provide some additional funding for SWAP as it moves from the assessment to the protection phase. Ongoing, long-term funding will need to come from the State or the local water providers.

Is this assessment a one-shot-deal?

No, assessments and protection plans will need to be revisited and updated on a scheduled basis.

3:30 Meeting

How will WHPP fit in with SWAP? How many well systems have been done?

The WHPP principles described in the State’s Wellhead Protection plan will be used to assess the source water protection areas for ground water sources of drinking water. About 10% of the public ground water systems have undergone one or more of the WHPP steps.

Does the State have complete location information on the wells and intakes?

No. This is one of the most important tasks that are currently underway. Location information on approximately 40% of the public ground water wells has been collected, but much of it will need to be verified. The State has targeted 2000 to complete this task for both surface intakes and ground water wells.

Will all landmass West of Denver be in SWA?

Yes.

It would be nice if someone could lay out all the programs for which federal land management agencies are responsible for complying with, and prioritize them such that if we met the needs of the most stringent program, we would be assured of meeting the requirements for all the others.

Agreed. Unfortunately, the regulations governing the programs do not fit together neatly, so it is often difficult to determine this.

How will the assessments be organized?

The WQCD has lead responsibility for seeing that the assessments for all PWSs in the state are completed within the mandated time frames. The Division will look to contract with organizations familiar with the process and willing to undertake the various elements of SWAP. Where there is little or no interest expressed on the part of the PWS, the State will arrange to have the assessments completed. To expedite the process, the State will be looking at using a “nesting approach” assembling large tracts of land within the source water assessment areas that are considered at low risk for contamination and with low risk to the water source. Examples of these are the headwater areas and wilderness areas.

Where PWS intakes and wells are located in the same SWAA, the State will encourage partnering among them to complete the assessments.

It seems to make sense to encourage cooperation between PWSs, the larger ones taking the lead, and the smaller ones providing more detail, using a tiered approach. The locals will have the best idea about where historic and uncatalogued sources of contamination will be.

The State supports partnering among the PWSs to complete the assessments.

You should check the 2nd National Watershed Assessment by the Water Resources Council, it has a detailed treatment of each hydrologic unit. Also check the 1968 River Basin Studies by the USDA NRCS Water Resources Council.

We are assembling as much information as possible in an effort to ensure that the assessments are complete. Thank you, we will examine these.

Will the assessment be mandatory?

Yes. The protection phase however is voluntary. There will be incentives for PWSs to become involved in the protection phase.

5:30 Meeting

Are the funds and the effort that will be required to carry out the assessment proportional to the number of PWSs?

That is difficult to say. The state has \$1.6 million to complete the assessments for all 2200+ PWSs. We intend to complete them with this amount of money and any additional funds that the USEPA may make available. Some of the SWAP tasks will be less costly than others, we will have a better idea of the costs associated with the individual tasks once the assessment is well underway.

For protection plans that have already been written, like WHPP, will the SWA need to be expanded?

Probably not. Most of the WHPAs were developed by the State using the semi-analytical computer model developed for WHPP. The information on which they are based is very credible, and should not have to be re-examined for SWAP. If any questions are raised about the adequacy of a WHPA boundary, the state may re-examine the assumptions used. However, given the tight timelines within which the assessments must be completed, the State will need to keep re-evaluations to a minimum.

Should we wait a couple of years until the procedure is smoothed out and funds and assistance are available?

No, start as soon as you can.

Can the State mandate land use decisions in transbasin diversion situations?

No, we can only encourage cooperation in both assessment and protection plan phases.

Can the COGs mandate land use decisions in transbasin diversion situations?

Probably not, but they can aid in organizing efforts and encouraging cooperation between PWSs.

DRCOG estimates that the assessment will cost approximately one dollar per person at the minimum. (Response provided by DRCOG).

How will SWAP fit into WHPP?

SWAP will be the umbrella program, and WHPP will eventually be assumed into it. The requirement to develop a contingency plan that described what a PWS would do in the event that the water source was lost or temporarily disrupted is not included in the SWAP requirements as it was in WHPP. The State will encourage the PWSs to address this as part of the protection plan.

What are the deadlines for SWAP assessment and protection plans?

The deadline for completing the assessments for all PWSs is 2001 with a possible extension to 2003. There is no firm date for completing the protection plans, however the WQCD will encourage the PWSs to move on them as soon as possible after the assessments are complete, and will look to provide incentives.

What are the major obstacles to completing SWAP?

Getting the word out across the state, coordination of assessment efforts, staffing, assembling and integrating the regulated data bases on PSOCs into a "database clearinghouse", and developing a susceptibility analysis which is objective but that can still be modified locally to fit the concerns and needs of the community.

Denver Meeting Attendees:

Richard Hamilton
Action for Public Trust
303-861-0424

Joe Pershin
City of Englewood
303-783-6826

Amy Johnson
UCD Grad. Student, Public Affairs
303-733-6154

Joe Kleffner
Town of Erie
303-926-2700

Mary Fabisiak
City of Northglen
303-450-8832

Gary Theander
City of Lakewood
303-987-7900

Randy Griffin
City of Aurora
303-690-4977

Steve Lohman
Denver Water
303-628-5994

Glen Gross
Evergreen Metro Dist.
303-674-2121

Kevin Linder
City of Louisville
303-665-3199

Pat Fitzgerald
Platte Canyon W&S
303-979-2333

Rachel Davies
Metro Wastewater
303-286-3000

Jim Sullivan
City of Arvada
303-431-3035

James McCarthy
City of Arvada
303-431-3042

Lisa McVicker
Central CO Water Conservancy District
303-891-1188

Jay Thompson
US BLM
303-239-3724

Dan Law
CO Water and Power Authority.
303-830-1550 x 14

Ben Alexander
City of Ft. Collins
970-221-6317

Ron Jepson
CSU Extension, Adams Co.
303-637-8117

Charlene Seedle
S. Adams Co. W&SD
303-286-0447

Rocky Wiley
Denver Water
303-628-6520

Chris Wallis
Boulder County
303-441-1149

Kevin McBride
City of Ft. Collins
970-221-6023

Monty Edwardson
Consolidated Mutual Water
303-238-0451

Chris Jones
CMWCO
303-238-0451

Cindy Brady
City of Aurora
303-739-7303

Calvin Youngberg
City of Longmont
303-651-8399

Jennifer Flynn
US Geological Survey
303-236-4882 x 300

Jeanette Hillary
League of Women Voters, CO
303-494-7718

Barbara Biggs
Metro Wastewater
303-286-3464

Corky Ohlander
USDA Forest Service
303-275-5097

Michelle Wind
Brown and Caldwell
303-743-5434

Gary VanDerSlice
EnecoTech
303-861-2200

Bill Morgan
Pinery Water & Wastewater
303-841-2797

Keith Hancock
Big Thompson Watershed Forum
970-667-9789

Rob Buirgy
Big Thompson Watershed Forum
970-669-5395

Craig Buth
Private Citizen
303-237-0977

Russ Clayshulte
Denver Regional Council of Governments
303- 480-6766

Pueblo, CO (11/18/98)

Ten people were in attendance. City of Lamar, League of Women Voters, reporters from two local papers, and CDPHE employees Kathleen Reilly, and Kim Parker were in attendance.

Which draft is this, and which draft will be submitted?

This is the second draft, it will be revised at least once more prior to submittal.

Will SWAP give us a way to stop development and the installation of septic tanks, etc. in fractured flow systems such as we have in Teller County?

SWAP will define the area around a well or intake that should be managed to avoid contamination of the drinking water. It will also identify the PSOCs within this area and rank them by risk to the well or intake. Any decisions to control or limit activities or land uses within the SWPA will need to be made by the local or county officials. SWAP can assist them with these decisions.

Would you come and present SWAP to the Teller County Board of Health to help reinforce the idea of preventative water quality protection?

Absolutely, let us know when it would be convenient.

Will SWAP be the vehicle to address zoning concerns?

Local officials can use the results of the SWAP assessments in deciding if zoning restrictions are needed to protect the water supply. There is no mandate to force these decisions within the SDWA.

It has been my observation that developers don't care about this sort of thing, and I envision increased litigation with the advent of SWAP.

It is difficult to predict what the reactions will be. The philosophy behind SWAP is that an informed citizenry will take the necessary actions to see that the drinking water supply is adequately protected. Once people are aware of the types of activities that can pose a threat to the water supply, it is assumed that they will respond with requests to their elected and appointed officials to install the necessary protections. Developers have a stake in safe drinking water supplies as well. If they are made aware of the potential impacts that proposed development can have on existing public and private water wells, perhaps undue threats can be avoided. There is the possibility of increased litigation where land use restrictions are adopted to protect a public water supply. It is hoped however that once people become more informed about legitimate threats to water supplies, that many of these problems can be resolved short of litigation.

Who will be the contact person to obtain or send GPS information?

Initially it will be the SWAP Coordinator who will be able to route the request to the appropriate staff person.

If we post all this information to the web, will that affect the security of the water systems?

The SWAP Design Team has discussed the issue of security and recommendations were made that the location information for the intakes/wells not be posted for wide distribution.

SWAP will be a good awareness tool, because many people don't realize that you can't see a lot of pollutants that might be in the water.

We agree, and hope to use this as one means of gaining people's attention for the need to protect our water sources.

Pueblo meeting attendees:

Rob McArthur
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23945 Lucky Ln.
Calhan, CO 80808
719-331-6102

Chuck Bradburn
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Barbara Stevens
League of Women Voters
334 W. Venturi Dr.
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Jean Williams
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Charlotte Burrows
Daily Record
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719-275-7565

Mary Speaks
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719-547-4492

Dannie McMillan
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Lamar, CO 81052
719-336-2002

Gayle Perez
Pueblo Chieftain
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Pueblo, CO 81003
719-544-3520

The Colorado Department of Public Health and Environment (CDPHE) would like to thank the concerned citizens that attended the public meetings held in each of the four major river basins. Your attendance at these meetings reaffirms the importance of public participation in the SWAP process. The questions posed were very insightful and important in the development of the SWAP program plan.

We would also like to thank the citizens that took time to submit written questions to the CDPHE about the SWAP program plan. Likewise, the questions and concerns that you presented were very helpful in the development of the program plan. The letters that we received and our responses to them are presented below.

Ralph E. Clark III
519 East Georgia Ave.
Gunnison, Colorado 81230
tel. 970-641-2907

November 7, 1998

Colorado Source Water Assessment and Protection Program
Colorado Department of Public Health and Environment; WQCD-OA-B2
4300 Cherry Creek Drive South
Denver, Colorado 80245-1530

Re: Comments on Colorado Source Water Assessment And
Protection - SWAP; October 1998 DRAFT

Thank you for the opportunity to comment on the SWAP draft. My comments are made from my personal perspective. They are made after reading the draft and consideration of it and other information. Pages references are to the draft unless otherwise noted.

General Comments:

- SWAP promotes much needed coordination of planning for land and water resources.
- The preventative approach (p. 1) and broad elements of strategy for SWAP should fit into efforts across Colorado that are trying to manage growth. Retaining the quality of water supplies for public systems is essential for maintaining the viability of communities and their associated economies.
- Lessons from past efforts at protecting sources of well water should be assembled into a case study report. For example, efforts by the City of Gunnison several years ago were strongly resisted by major land owners within what would be the source water protection area.
- Community based planning is an appealing strategy (Goals - p. 3). Too often, however, those active within a community are already very busy. Coping with rapid community change usually associated with growth overwhelms the capacity of communities to do community based decision making. Meanwhile, there is a tendency for the really tough issues, and responsibilities for dealing with them, to be passed downward to the community level. To the community goes the burdens of saying "no" to a project and incurring the political, social, and legal expenses of opposition to regulation. Among these are "slap suits," "takings suits," and demands upon volunteer time.
- Water is used and reused, sequentially and often concurrently, as it flows downward through a basin. Traditionally the public water supply is drawn from upstream of a community and discharge of used water is downstream. This externalizes costs for the community. Much greater concern tends to be evidenced about the quality of water received to a community's supply of water than about the quality of water discharged for use by others downstream. Those communities downstream of course are concerned

about what they receive. I understand that a simple strategy to internalize water quality costs and to promote greater community interest in the quality of water both received and discharged has been implemented in Denmark. This strategy is to require that a community's discharge be upstream of the community's intake. Such a strategy should be applicable in Colorado.

Specific Comments:

- p. 2 The watershed approach should complement and build on data assembled by the U.S. Geological Survey National Water Quality Assessment (NAWQA) projects.
- p. 3 Communities in Colorado, as elsewhere, tend to ignore consequences of their discharges upon water users downstream.
- p. 3 In addition to assessment, the goals should include a reference to monitoring.
- p. 3 Goals should go beyond informing and hoping the public becomes responsive. They should include enhancing the public's ability to force appropriate governmental responses.
- p. 4 Testing of well water quality is increasingly required in real estate transactions. A copy of results from each such test should be deposited with the department for inclusion in the SWAP data base. Likewise, copies of hazardous materials evaluations made for real estate transactions and lending purposes should be provided for inclusion in the data base.
- p. 4 The SWAP database, if organized by the U.S.G.S. system of hydrologic unit classification should also provide cross-referencing or location references to "Lat-Long" coordinates, township and range, and other mapping systems.
- p. 5 In rural areas a potential problem for source water protection may come from expanding home occupations. For example, large areas supplying groundwater can be adversely affected by disposal through septic systems of small amounts of solvents used for cleaning computer components and other electrical equipment.
- p. 6 Linkage and integration of SWAP with other programs and initiative is excellent.
- p. 7 Inclusion of additional members in the SWAP design team, whenever they express an interest and do their "homework," is an excellent provision. It should be emphasized at all levels of the program.
- p. 9 Specific offices in the Department of Transportation should be identified as potential stakeholders. In mountainous regions of Colorado, sanding and salting can introduce chemicals into water supply sources. The identification of permitted routes for bulk transport of hazardous materials should reflect consideration of potential consequences of accidents. Especially in the mountainous regions of Colorado, roads are often located very close to edges of streams and wetlands.
- p. 9 The Colorado Riparian Association should be included in the list of potential stakeholders.
- p. 11 Informing the public of outcomes from source water assessments is excellent. Accompanying this distribution of information should be guidance for its interpretation.
- p. 13 In many mountain valleys water is moving rapidly between surface and ground water systems. Much of this is natural but much appears to be the result of irrigation practices. The definition given for "ground water under the direct influence of surface water"

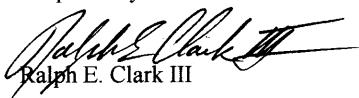
- should reflect this.
- p. 13 Understanding the timing and directions of groundwater movement is critical. Time of travel is much discussed but little understood. In mountain valleys, some irrigators assert that the return of water they apply to soils alluvial benches returns to the streams within a matter of days or perhaps a week. Some subdividers and land developers in the same situation assert that any returns to streams from septic leach fields can take hundreds of years. Reality is somewhere in between but needs definition. Seasonal change of ten or more feet in the level of household wells down gradient from flood irrigated field have been noticed in such situations.
 - p. 13 The procedure for placing threatening contaminants on the list should be set out, perhaps with a provision for locally determined additions.
 - p. 14 Susceptibility analysis should include consideration for vulnerability of water supplies to highway accidents involving transport of hazardous materials. This vulnerability can reach far beyond the 2.5 mile radius or "calculated fixed radius." The U.S.G.S. and others can determine travel time and dispersion relationships for responding to spills of hazardous materials. On the Ohio River, for example, public water intakes are shut at times to allow a plume of contamination to pass by as it flows downstream. In Colorado, a major problem to be addressed is that, especially during the summer, contamination from a spill can be carried downstream and diverted along with irrigation water and then contaminate and re-contaminate groundwater supplies over an extensive area.
 - p. 14 It appears that the Upper Colorado River Basin can be the delineated as a SWAP for public water supplies in California, Nevada, and Arizona.
 - p. 14 I would support delineation of a SWAP for the entire watershed above the trans-basin diversion structure. This concept appears applicable to what I have proposed as an alternative to any more transmountain diversions from headwater streams. The alternative is the Colorado Aqueduct Return Project (CARP). CARP would return water from the Colorado - Utah state line for reuse on both the eastern and western slopes of Colorado. This is water Colorado remains entitled to consume under the Colorado River Compact. It is returned after first flowing downward through its basin of origin doing all that it does instream and out of stream. A major consideration in CARP's design is creation of an incentive to maintain water quality from the headwaters to the lower reaches of Colorado's rivers.
 - p. 14 There appears to be a fourth type of aquifer in Colorado. This is an alluvial deposit in headwater basins which is a relic of glaciation. Water trapped in these deposits is arguably non-tributary. The Bureau of Reclamation sponsored research known as the High Mountain Aquifer Project on development of such aquifers in the 1980's with exploratory drilling in the Upper Taylor River Basin and I believe other locations such as North Park.
 - p. 14 Delineation methods must be able to withstand the challenge that the results or decisions are not based on sufficient "scientific" evidence or that the evidence is not sufficient to convince elected decision makers. The "arbitrary" radius appears particularly vulnerable.
 - p. 15 Delineation should be revised, redetermined, or affirmed periodically, perhaps at the time of the tri-annual review of water quality classifications for a basin.
 - p. 15 Analytical modeling such as WHPA 2.2 produces results but the assumptions and calculations of the model remain subject to considerable uncertainty - especially

- assumptions such as uniform porosity and transmissivity within alluvial aquifers over the area of potential supply.
- p. 18 Those interested in following the effort hosted by Arizona for the Colorado River Basin should be entered on a sign-up list - I wish to be placed on this list.
 - p. 18 Concern for security can offer an excuse for closing access to watersheds, for not disseminating information, and for not participating in the program. This information about source water supplies and locations of intakes is readily available. This vulnerability cannot be reduced. Good monitoring of raw water supplies is the best security. Also, needed is a good response planning - not just sidestepping this tough issue by obscuring it under cover of security considerations.
 - p. 19 Again, the proliferation of home occupations poses difficulties in maintaining a current inventory of hazardous materials and contaminant sources within the SWAP. Even acquisition of chemistry sets by children could raise concerns.
 - p. 19 The list of additional identified contaminants of concern would appear to raise issues related to winter feeding of cattle on frozen wetlands and in riparian areas and also with the presence of beaver dam complexes. These are matters that should be addressed but efforts to do so will be politically difficult.
 - p. 20 Significant potential contaminant sources could and should include medical waste dumps from the period of early settlement. If these and other historic sites such as outhouse groups are in locations with seasonally high water tables, they could present problems.
 - p. 20 If citizen involvement is desired in the identification and ranking of potential contaminant sources, then as a practical matter security should not be a consideration in the SWAP program.
 - p. 21 Local historians can help identify sites such as assay offices, slaughter houses, medical clinics, smelters, and suppliers of chemicals to mining operations.
 - p. 21 If participation in the source water protection program is voluntary, few communities may be interested in joining the effort.
 - p. 21 A backup program conducted by the state to test for contaminants is also needed for those receiving exemptions as an incentive to participate.
 - p. 22 Integration of this program with other programs is needed. A good starting point is with TMDL allocation. SWAP, TMDL allocation, and other programs require integration of water quality and water quantity - and this is best done by watershed planning.
 - p. 22 The waiver of testing for potential contaminants can be a useful incentive but the waivers should reflect the need to test after such events as floods, instream or adjacent to stream aggregate extraction, construction of pipelines crossing stream, spills of hazardous materials, etc..
 - p. 23 Combinations of ways to notify the public should be used. The guidance being prepared should provide for checking on the success of notification. Notification is also an excellent opportunity to create public interest and do public education.
 - p. 24 A critical part of creating public interest is providing the public with full access to information in the data base and distributing initial data and updates to the libraries across the state. The creation of an accessible WEB site may be less expensive. This is an excellent idea but there should be the capability for a user to easily download or print out data.
 - p. 25 Field information is needed. There should be provision to confirm collected information.

- Sometimes providers of information are spiteful and at other times there is a need to provide for anonymous contributions.
- p. 25 Given the information to be placed there, monthly updating of the “master location table” may not be frequent enough. Some means is needed to enable more frequent updating as in response to events such as flooding.
 - p. 27 The susceptibility analysis should be re-examined and re-determined every three years at the time of the tri-annual water quality classification and standards.
 - p. 27 Many communities and counties do not have land use regulations that can be assumed as determining what will happen where in the future. Some counties, such as Gunnison, do not have zoning but base land use decisions on analysis of potential impacts. Other places with zoning make frequent exceptions to it. The SWAP should incorporate into the data base some form of updating the land use inventory for each periodic analysis of susceptibility.
 - p. 27 In doing assessment of potential sources of contamination and susceptibility analysis, the community medical incident records and reports should be examined.
 - p. 28 Risk analysis is difficult. Individual and social perception of acceptable risk is even more difficult to project and changes over time. The SWAP program should also be prepared to address issues of social injustice arising from determinations of where and upon whom the burdens of risk are placed.
 - p. 28 In the tiered or phased approach to susceptibility analysis, the SWAP program should prepare to address cumulative effects of low level and combined concentrations of contaminants as opposed to a focus on something like LD-50 concentrations or similar figures for contaminants in isolation.
 - p. 28 Abandoned or improperly plugged wells appear to be of lesser concern for potential groundwater contamination than flood irrigation. Contaminated stream water used for irrigation may recharge very large areas of groundwater aquifers.
 - p. 31 Application of Best Management Practices is usually voluntary as well as being subject to definition of what is “practicable.” The SWAP program should address how to make application of BMP’s required where non-point sources of pollution are major contributors or carriers of the total amount of contaminants.
 - p. 35 Representatives of contaminant sources are likely to be stakeholders in the SWAP program. Having them participate in the ranking of contaminants for the susceptibility analysis may set up potential conflicts of interest.

Thank you for the opportunity to comment. Please contact me with questions. I would appreciate being placed on the mailing list of the SWAP program.

Respectfully:


Ralph E. Clark III

Colorado Department of Public Health and Environment, Drinking Water Section

4300 CHERRY CREEK DRIVE SOUTH

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January 20, 1999

Mr. Ralph E. Clark III
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RE: Response to comments provided on SWAP

Dear Mr. Clark:

I want to thank you for the input that you provided on the draft SWAP plan. Your comments were very insightful and provided much useful information for the SWAP document. In preparing a response, I've tried to address your comments and recommendations in the order that you presented them, and to let you know how they have been handled.

General Comments:

I am pleased with your support of the concepts underlying SWAP, using a preventive, community-based approach to protecting a public water supply. In response to your comment on the efforts of the City of Gunnison, we recognize that there have been a lot of efforts by municipal water providers to protect their supplies and expect to take advantage of the information that has been collected as the SWAP process unfolds.

Typically, we do not receive this information. We hope that as SWAP picks up momentum at the local level, that this information will be provided to support the delineation and/or contaminant inventory, and that we will be able to undertake some case studies.

Regarding community-based planning and decision making, I agree with you, that a disproportionate burden can sometimes be shifted to citizens. Hopefully, this should not be the case with SWAP. The philosophy here is that informed citizens will be able to influence decisions regarding the legitimate threats to the drinking water source and what should be done about them. The expectation is that SWAP will work to educate people about these issues, and that they can then work with local officials to affect the necessary changes. We recognize that the educational process will take time, and are willing to assist the local water provider with it.

In response to your concern about the impacts of discharges to the drinking water source, we will be including all dischargers regulated under the NPDES program in the assessments, and will be evaluating the potential impacts of their discharges to the water source. In addition, we will be looking at the impaired streams, those on the 303(d) list, determining which are drinking water sources, and what the contributing factors are to the impairments. With this information, we can make recommendations regarding appropriate actions to take, and will need to work with the local water providers and citizens on data collection and evaluation. Again, this will take time and our approach will be to start with the simple and move to the more complex as the knowledge and comfort levels increase.

Specific Comments:

USGS involvement: We agree, and have involved a representative from the USGS on the SWAP Design Team, and on the Technical Advisory Team. We are also exploring having the USGS work with us under contract on the data collection and analysis efforts.

Monitoring to determine the impacts an identified contaminant source might be having on the Source Water Protection Area (SWPA) will be included in the protection phase of SWAP in most instances. The down side of this is that this is the voluntary portion of the program. Again, it is anticipated that the citizen concern, developed through the SWAP process, will provide the necessary impetus to move the local officials to take the necessary actions.

The public participation strategy includes educating people about the threats and what can be done about them. I agree that this is a relatively awesome educational task, one that will take time, but one with significant potential to realize comprehensive drinking water protection.

On well water quality data collected by in real estate transactions...I assure you that we covet the ground water quality information that is collected by the private sector on real estate transactions. This information is the property of the well owner, typically the bank or the property owner, and rarely finds its way into our data banks. Your point is well taken however, and one response that occurs to me is to contact the banks and realtor associations and request that they share this information with us whenever possible. Recognize that we cannot require them to do this, but it's worth making the overtures as part of SWAP.

Your point about the potential impacts of home businesses on ground water is well taken. Historically, we have addressed this concern through public education. We deliver lectures and participate in a variety of educational forums on a regular basis and have found that people often aren't aware of the impacts certain practices can have on a water source. This approach is simple, but relatively effective. We augment it with brochures and other types of information, and provide phone numbers of state or local agency people to contact with questions or to report incidents. Another avenue that we will be pursuing is to join forces with the state Pollution Prevention Program (P2) and develop some cooperative approaches to reducing the generation of wastes as well as proper disposal.

I agree that we need to involve the Department of Transportation in a more active way. I will pursue this and try to involve them in the Technical Advisory Team. Your recommendation made me aware that we also need to alert the county and city public works departments about SWAP. I will follow up on this as well. By the way, we will pick up highways over which hazardous materials are transported in the contaminant inventory. We will also be working with CDOT on the placement and construction of roads to minimize the threats to water sources. You will be pleased to know that we have noticed an increase in citizen involvement in public meetings on transportation decisions in recent years. Often the concern is property values and noise, but we can use the increased awareness to introduce the potential impacts to drinking water sources as well.

We will include the Colorado Riparian Association on the list of stakeholders, sorry for the oversight.

I agree that we need to educate the public about what they will be receiving in the Consumer Confidence Reports on the source and quality of their drinking water. We are working on that here, and hope to have guidance available to the public water providers prior to October when all must comply.

The definition of ground water under the influence of surface water was taken from the regulations. The concern from a drinking water regulatory perspective is the constituents that may show up in the water because of the surface water connection that wouldn't be there without it. Knowledge of the source of the surface water is helpful however as it alerts us to look for certain constituents.

I agree with your observations about time of travel for ground water and the disagreements that can arise. Admittedly, we do not have a perfect method of dealing with this factor, what we do is use the information provided on the well permits to develop the source water protection areas using the WHPA computer model. We then have what emerges reviewed by a staff hydrogeologist, and forward the product to the public water supplier for review and concurrence. We use a five-year TOT, which we believe is adequately protective in most areas of Colorado. The water supplier can expand the area should they want more protection, but need to confer with the state if they want to reduce the size. The aim is to take a conservative approach that will result in a source water protection area that is adequately protective of the drinking water supply. I also agree that we should re-evaluate the areas on a scheduled basis to confirm that they still apply. I will insert this into the SWAP document.

Regarding the list of potential contaminant sources... we have used an iterative approach here, starting with the most serious pollutant sources, and moving to those of lesser concern. This approach was influenced by the belief that we would not attract the desired citizen involvement if we did not account for the need to educate people first and build their knowledge base. In subsequent drafts we have described the development of the list of potential contaminant sources and how they will be introduced to the citizens.

On the opportunities for interstate cooperation on SWAP, the Upper Colorado is in fact part of the SWAP for the down basin states. Arizona is leading the effort on coordinating activities among the affected states, exchanging data, etc., perhaps we can use this opportunity to bring up the efforts of CARP. We plan to issue a newsletter on SWAP and will keep you apprised of the interstate efforts through this vehicle. The initial meeting on the Colorado River Basin states is scheduled for March. We (Colorado) have taken the lead on similar efforts on the Platte, Arkansas and Rio Grande and will be hosting meetings in each basin with counterparts from affected states in these basins.

I appreciate your comments on the fourth type of aquifer. In our efforts to simplify the process, we would include these formations in the alluvial category and treat them as unconfined for SWAP purposes. We would be looking at the impacts on them from surface activities and land uses.

We dropped the arbitrary radius option and defaulted to a 2.5-mile radius.

On the shortcomings of the WHPA model...We recognize that it is imperfect, but is a good point of departure. We will be working on improving our capability to better characterize the aquifer settings as the program evolves.

On the issue of security and how it could affect the approaches to SWAP... the greatest concern was over Internet publication of the locations of the intakes and wells. EPA has agreed that this piece of information will not be distributed over the Internet. Copies of the state SWAPs will be available however.

On soliciting information on various impacts to the source water protection areas...the examples that you provided would be great opportunities for organizations like the Riparian Association to provide information on impacts that might escape inclusion otherwise. It would be a great help to ensuring that the inventories are complete.

On the inclusion of medical waste dumps and other historical land uses and use of local historians on identifying sources....I agree that the dumps could pose problems. We hope to address these through city and county file and records searches, and through interviews with long-term residents. Some of this information may emerge in the historic landfill data bases maintained by CDPHE's Hazardous Materials & Waste Management Division.

The issue of security is solely around publicizing the locations of the intakes and wells. There does not appear to be any concern about public input on the contaminant sources. Our greater concern is that people will not be as candid as might be desired regarding questionable practices on private lands adjacent to public water supplies for example.

On voluntary participation in SWAP... The assessment phase of SWAP is mandatory for all public water supplies in the state. This is the delineation, contaminant inventory, susceptibility analysis and public participation. The protection phase, taking the results of the assessment and translating them into specific actions that the public water supply will undertake to protect the water supply, is voluntary. There will be financial incentives as well as public pressure for the water supply to participate.

Waivers from testing for VOCs and SOCs will not be awarded until or unless the state is confident that the system is not at risk. To qualify, the PWS (public water system) must demonstrate to the State's satisfaction that they have determined that the VOC or SOC is either not used in the area, or if used, that the system is not vulnerable to contamination from it.

Integration with other programs is very desirable, and has been addressed in subsequent drafts.

Waivers are available only under specific circumstances, and are periodically re-evaluated to determine if they should be continued. The catastrophic situation that you describe would be evaluated and the PWS might have to re-institute sampling and testing for a period of time until the danger was past. I feel confident that there are provisions to this effect in the issuance of the waiver.

On public notification procedures... I agree that there should be a variety of options to notify the public, these have been addressed in recent drafts. I can't commit to other than random checks on the effectiveness of the methods as we do not have the personnel to follow up as thoroughly as might be desired. The public notice requirement does provide an excellent opportunity to educate people about the water source, and we will encourage the PWSs to take advantage of it.

Having information available electronically... We have done this, information on SWAP is available and can be downloaded from the SWAP web site.

Information will be field collected by the Division's field staff, and field information will also be collected from citizens. Where information is questionable, but may constitute a serious threat to the water source, it will be verified before use.

On frequent updating of the data... A Technical Advisory Team has been appointed to work on the procedural aspects of collecting, integrating and updating the data.

On re-examining and re-determining the susceptibility analysis every three years... This is an interesting concept. We are recommending that the PWSs re-visit the assessment every two to three years, verify that it is still accurate, and make any necessary changes. It is our expectation that the process will be ongoing, and

that the sources will be re-evaluated every few years to ensure that the PWS has not overlooked anything that might threaten the water source. It is also expected that the ability of the PWS and the state to identify sources and develop databases for them will improve over time as will the need to update the data sets.

On examining land uses as a component of SWAP... I agree that land uses change and that we need to have the PWS periodically re-examine the delineation and source inventories to ensure that new threats have not emerged as a result of land use decisions. Ideally, we would like to see a map of source water protection areas hanging in every County Planning and Commission office., and consulted when questionable land uses are proposed. We will work with the PWS to notify the county of the source water protection areas and the need to exercise caution in deciding what types of land uses to approve within them.

On the complexities of risk analysis... I agree that this can become a very complicated and subjective process. We have tried to develop an approach that would simplify it while at the same time provide a means of adequately determining the risks that certain activities pose to the water source. We are also trying to establish consistency with the risk analysis . This is addressed in subsequent drafts.

The intent in using the tiered approach was to do what you have suggested, to start simply and move to the more complex issues.

Abandoned and improperly sealed wells are included on the contaminant inventory list. The impacts of irrigation return flows usually show up in the tests run on finished or treated water. The presence or influence of irrigation return flows is a sign to watch for specific contaminants. The control of these through the use of Best Management Practices is one desired outcome of SWAP.

We do not have the authority to make BMPs mandatory, but can provide financial incentives to gain the cooperation of area farmers and ranchers.

It is anticipated that the matrices developed for the susceptibility analysis will remove some of the subjective element and provide a more uniform approach to susceptibility analysis

I hope this answers the points you've raised, once again thank you for taking the time to comment. If you have any questions about the responses, please don't hesitate to contact me at 303/692-3573. I hope that you will remain involved in SWAP. The sustained involvement of concerned citizens like you is critical to the success of the program.

Sincerely,

Kathleen Reilly, SWAP Coordinator

Water Quality Control Division



Town of Monument

166 Second St., • P.O. Box 325 • Monument, CO 80132 • (719) 481-2954 • (719) 488-1604

November 17, 1998

Kathleen Reilly
4300 Cheery Creek Drive S.
Denver, CO 80246-1530

Dear Ms. Reilly,

I have received the notification of the meetings for Source Water Assessment and Protection Plan one day prior to the meetings, so I am unable to attend with this short notice.

As you know, we in Monument, have a Wellhead Protection Plan in place. I feel source water protection is of the **utmost** importance to protect our sources, I feel this program should be expanded from a local community program to a total watershed program. There are in most cases, several communities involved in watersheds hence more difficult to receive cooperation to establish a watershed wide program.

I would like to see movement in education to develop watershed wide protection. It makes little difference what community may allow contamination is an underground aquifer, for example, it could affect all surrounding communities using this aquifer in time.

A protection program and education are very important tools, with current growth patterns, to protect designated Wellhead Protection areas from high risk uses, but it will require all purveyors in the watershed to cooperate in the protection of our valuable sources.

The cost of protection in time and monies to develop a plan will still be cheaper than the cost to clean up contamination let alone the time the source is lost for clean up.

Thank you for the chance for input.


Jerry Standard
Town of Monument
Director of Public Works

Equal Opportunity Employer

Colorado Department of Public Health and Environment, Drinking Water Section

4300 CHERRY CREEK DRIVE SOUTH

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January 31, 1999

Jerry Standard, Director of Public Works

Town of Monument

P.O. Box 325

Monument, Colorado 80132

RE: Comments on the state Source Water Assessment and Protection Plan

Dear Jerry:

It was good to hear from you, I was sorry that you weren't able to make the meeting in Pueblo, as I would have enjoyed seeing you again. I also want to thank you for the endorsement of the watershed approach for source water protection. We believe that it is the best way to proceed and will be using it in the delineations for the surface and ground water systems. We will also be encouraging partnering among the public water systems that are located in the same source water protection area, and are looking into providing incentives for this. If we're successful, it should bring about some much needed cooperation among public water systems and watershed groups.

SWAP should be an excellent vehicle for the watershed-wide protection that you recommended in your letter. The public education element of SWAP will hopefully build a better understanding of the need to work together to protect the resource, and of the ramifications should we fail to. I sincerely hope that we will be able to catch people's attention with SWAP, and that it will be an effective means of mobilizing citizens to become actively involved in learning how to protect a water supply.

I wholeheartedly agree with your comment that the investment in SWAP will be less expensive than the cost to clean up contamination. I'd like to think that over time we will be able to document some of the cost savings realized through pollution prevention. Thank you for your support, I believe you will see your thoughts and philosophy reflected in the SWAP. I hope that things are going well, and that you will stay involved.

Sincerely,

Kathleen Reilly, SWAP Coordinator

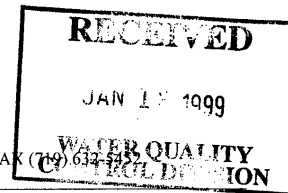
WATER QUALITY CONTROL DIVISION



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January 12, 1999

Kathleen Reilly
Colorado Department of Public Health and Environment
WQCD-0A-B2
4300 Cherry Creek Drive
South Denver, CO 80246-1530

Re: Comments on Colorado Source Water Assessment and Protection (SWAP)

Dear Ms Reilly:

Thank you for the opportunity to continue to submit comments on the October 1998 draft of the Source Water and Protection Program. These comments are submitted on behalf of the Colorado Springs Water Resources Department.

Page 1, Section 1.0, Introduction, should include language from the House Commerce Committee Report which states: "The Committee recognizes that source water protection can be cost effective strategy for insuring safe drinking water supplies...To address source water protection, the bill creates a new program in which states with primacy will conduct an assessment, coordinated with existing information and programs, to determine the vulnerability of sources of drinking water within state boundaries...designed to protect source water from threats identified during the assessment." (House Report 104-632, part 1). Furthermore, the Senate Committee Report provides that, "the only options typically available to community water systems finding contaminants in their water supply have been treatment or the development of new water supplies...To remedy this problem, the bill adds a new section to the Safe Drinking Water Act that provides a means other than treatment for community water systems to address problems or emerging problems of contamination," that is, petition programs and source water protection efforts.

At page 1, the time deadlines required should be listed for identification and ranking, susceptibility assessment and implementation. Under the Safe Drinking Water Act primacy states must submit source water assessment programs to EPA for approval within eighteen months after the agency publishes final guidance. That guidance is issued. The clock is running. What is the schedule?

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At page 6, Section 1.8, integration with other programs, a new paragraph could be added. That paragraph would amplify how Colorado has “developed ways to integrate” other programs. This point needs to be amplified. EPA has authorized “differentiating assessments” to enable completing the assessments for all public water supplies within the allowed timeframe. Full explanation on how previous assessment efforts will be utilized so as to reduce the effort public water suppliers may otherwise have to anticipate should be explained. Other assessments that perhaps have been performed in Colorado but not listed in page 6 paragraph 1.8 should be included if they have been performed. From EPA guidance I gather that these include sanitary surveys and state management plans for pesticides.

At page 11, Section 2.4, public outreach, the paragraph concerning public workshops should also include among targeted groups: Section 208 planning organizations, public water suppliers, municipal and county planning departments, publicly owned treatment works, solid waste handling facilities, storm water permittees, soil conservation service/NRCS representatives and other organizations representative of the stake holders and participants in the assessment process.

At page 12, prior to the paragraph concerning “making assessment results available to the public” a paragraph should be inserted which provides for making preliminary assessment results available to stakeholders. Clearly, reliance upon volunteers to collect data for preliminary assessment results ought to be subject to a quality assurance and quality control program which includes opportunity for comment by public water suppliers as well as potential sources of contamination.

At page 14, Section 3.0, delineation of source water areas, the second sentence should read as follows:

“For surface water systems this will include the entire watershed area upstream of the EACH PWS’s intake structure up to the boundary of the state borders or THE WATERSHED.

The point needs to be clear that for surface water systems, the delineated watershed is that area upstream of each public water suppliers intake structure up to the boundary of the watershed. This will be the case unless individual public water suppliers are aggregated as provided in Section 3.2. Accordingly, 3.0 ought to reference this aggregation opportunity in Section 3.2.

At page 17, top of the page, paragraph 5-assessment maps-provides that delineated source water protection areas will illustrate the location of the drinking water source, the source water protection and recharge areas, and the location of PSOCs with high and moderate risk rankings. It is not clear how PSOCs will be ranked as to high or moderate risk, nor is it foreseeable that such PSOCs can be properly included within any map unless such maps are large enough in scale as to include all potential PSOCs. It is not clear that all PSOCs can properly be assessed in a eighteen month to two year period and properly ranked. If all underground storage tanks must be identified the map will be huge. If all dry cleaning establishments must be identified, the map will be gargantuan.

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At page 18, Section 4.0, contaminant source inventory , should have a new paragraph added. That paragraph should address whether potential sources of contamination that are complying with federal, state and local statutes may nonetheless be found to be significant and therefore need to be inventoried. EPA has stated in comments that a source's compliance with governmental laws does not necessarily mean that a PWS is not susceptible to that source. Verification of that statement has not been provided. In the case of POTWs with NPDES permits, it is anticipated that the permit is drafted to protect downstream PWSs. The burden should be upon the state and the assessment process to justify listing of POTWs as potential sources of contamination to public water supplies. Currently, the NPDES permit constitutes an authorization to discharge at a level sufficient to protect the public health safety and welfare. The "permit as a shield defense" is provided by Section 402(k) of the Clean Water Act. To presume the NPDES permit is not protective of downstream PWS is to impeach the current system. No foundation for such impeachment is provided. Listing of POTWs as PSOCs ought not to be inconsistent with any 303d list. If it is inconsistent, it should be expected that such new assessment will constitute new data justifying revision of the 303d list in subsequent iterations of the 303d process. The consequences of the 303d listing then attached. Accordingly, susceptibility determinations ought not be based upon any lesser standard of data than all other 303d listing processes. It may be appropriate for this Section 4.0 contaminant source inventory to state that all sources that may pose a threat are listed but the listing does not constitute a real threat and must be evaluated through a susceptibility analysis as required by Chapter Six. There should be a clear linkage between 4.0 and 6.0.

At page 19, Section 4.2, significant contaminant sources, does not include table 4.2 listing potential significant contaminant sources. It is assumed that this table includes publicly owned treatment works (POTWs). The scope of this table 4.2 listing should be defined in Section 4.2 so as to fully appreciate the workload necessary to inventory these sources and to rank them as moderate or high risk. It is not clear whether this ranking is before or after the assessment process required under 6.0. If ranking occurs before the susceptibility assessment Section 4.2 must define criteria for ranking as high or moderate risk. The consequences of such ranking may be immediate upon PSOCs and needs be fully justified.

At page 19, Section 4.3, inventory, requires not only identifying potential sources of contamination (PSOCs) within its source water protection area, but also ranking by risk. What data and risk assessment methods are to be used for such risk rankings? It is arbitrary for every public water supplier downstream of any POTW to rank as a high risk all of the POTWs upstream. How are such risks to be evaluated? How can such inventory be completed within a two to six-month timeframe? Still, the relationship between Section 4.3 and Section 6.0 is not clear. Is the inventory and ranking a rough estimate for prioritization purposes, which is to be followed by a more detailed analysis under Chapter 6, the susceptibility analysis? If so, this sequencing ought to be made clearer in Section 1.6, source water assessment-key steps, at page 5. This includes the timeframes for each step.

At page 20, the paragraph above Section 4.4 provides that the inventory will be completed within an approximately two to six-month time period. This is unrealistic. Water

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providers will be unable to conduct such contaminant inventories of all upstream municipalities. The state will not be able to fulfill that responsibility in a two to six-month time period.

At page 20, Section 4.4, incentives for local participation, could include a reference to the “petition program” authorized by Safe Drinking Water Act Section 300j-14. Under this program, partnerships of public water supply systems and others, including municipal and local governments, may be created to reduce the presence of pathogenic organisms for which a national primary drinking water regulation has been established or promulgated or proposed. Such petition may receive financial assistance to identify other resources to implement the partnership recommendations on origins of such contamination.

At page 21, concerning integration with other watershed efforts, each of the subjects addressed on page 21 should have a statutory citation or regulatory citation. For example, reference to use waivers and vulnerability waivers ought to be cited to the regulatory requirements.

At page 23, Section 5, data collection and analysis, provides that the SWAP will adhere to quality assurance and quality control protocols (QA/QC) currently in place within the WQCD. That QA/QC protocol should be attached as an appendix. That QA/QC protocol ought to be identical to and not less restrictive than the protocol utilized for Section 303d listing processes. Both PWSs and PSOCs must have an opportunity to review and correct information prior to its issuance in any final document for public disclosure.

At page 23, Section 5.1, electronic data acquisition and reporting, provides that electronic data concerning underground storage tanks, wastewater discharges etc. will be made available. No reference is made to hydrologic regimes of the streams. Such information will be necessary for proper environmental fate and effect analysis.

At page 24, Section 5.2, field data collection, should provide for seasonal chemical data collection relative to each location of a PWS. This is necessary for any risk assessment meeting any QA/QC protocol. A fate and effect analysis is necessary for proper susceptibility assessment. EPA in its response to comments on its draft guidance on the State Water Assessment Programs has stated that it is publishing a technical document to assist in accomplishing efficient and effective susceptibility determinations. This document will include analysis of hydrogeology and or hydrology of the source waters; contaminant fate and transport in source waters; and the effectiveness of the existing prevention and mitigation measures. Such guidance is necessary to support appropriate field data collection efforts. Reference to such guidance should be utilized. Colorado’s schedule for identification, ranking, and susceptibility analysis should be tied to EPA’s technical support document.

At page 25, Section 6.0, susceptibility analysis, it should be clarified that the susceptibility analysis follows the initial identification of PSOCs. The timeframe within which a susceptibility analysis is to be prepared is not defined. Reference to guidance documents to be made available by EPA for the conduct of such susceptibility analysis should also be made.

At page 25, Section 6.1, susceptibility analysis procedures, provides that the analysis will be undertaken by either the PWS or the state. Specific reference to such analysis being

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conducted by an integrated partnership or other watershed entities ought to be made clear. See Clean Water Act Section 300j-14. It may be appropriate to outline a sequence in which a preliminary susceptibility analysis is performed by the PWS, made available for public comment, partnership arrangements under 300j become available, and more in depth susceptibility analysis is completed. State funding of such partnership based in-depth susceptibility analysis may encourage match funding by stake holders.

At page 25, Section 6.2, assessment of potential sources of contamination (PSOCs), describes the ranking process to occur under chapter 5 inventory process. Should not these paragraphs be inserted under chapter 5? Furthermore, the second paragraph provides that risk ranking will be influenced by a number of factors. Such factors ought to be listed. The examples may be helpful but additional factors ought to be listed. Are there parameters of concern which ought to be deemed as high priority pollutants of concern? It is noted at page 26, under Section 6.3, the last paragraph, further ranking criteria is listed. Is there a consistent set of factors for ranking that can be used both in the initial inventory process as well as the subsequent susceptibility determinations?

At page 26, Section 6.4, use of the susceptibility analysis, provides that these analyses will be used to identify "appropriate management approaches to protect the water supply." It would be appropriate to list potential management approaches. The ultimate question in each watershed will be whether treatment at the source or treatment at the point of use is most protective of the human health environment and is most cost effective. This focused question needs to be maintained through both the inventory as well as the susceptibility analysis process.

In conclusion, thank you for the opportunity to submit these comments. The potential source water assessment and protection process is certainly a thought provoking issue.

Respectfully submitted,



Tad S. Foster

TSF/pf

cc: Patricia McGlothlin
Vicki Card
Bill Van Derveer

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January 28, 1999

Tad S. Foster, Attorney at Law
P.O. Box 1836
Colorado Springs, Colorado 80901

RE: Response to comments on Colorado Source Water Assessment & Protection Plan

Dear Mr. Foster:

I have received and had an opportunity to review your comments on the October draft of the state Source Water Assessment and Protection (SWAP) Plan. I wanted to let you know how we had handled the comments as I truly appreciate getting the input. I've organized this response according to the comments in your letter. There have been two revisions to the document since October, in which many of the recommendations have been addressed.

Page 1. Section 1.0, Introduction I have paraphrased the language from the House Commerce Committee as you've suggested to clarify the preventive approach to drinking water protection embodied in the source water approach.

Page 1. We are including a timetable in the document as you've suggested. It will indicate the due dates for the various components of the SWAP. For example, the state strategy is due to the EPA by 2/8/99. We plan to have it there by Friday, the 5th. The assessments for all public water systems (PWSs) are to be completed by 2001 with an opportunity for an 18-month extension to 2003. We will request the extension; I anticipate that it will be granted. The assessment includes the four elements outlined in the Safe Drinking Water Act: public participation, delineation, contaminant inventory and susceptibility analysis. The timetable will indicate the schedule for completing them.

Given the short time frame, we are already working on elements that we know are essential, and have a pilot project that will provide information on the collection and integration of the various data sets that will be needed. The schedule is to have the assessments for all 2,200+ public water systems completed by May, 2003.

Page 6, integration with other programs. This is an important point, and has been expanded upon in subsequent versions. We will use the wellhead protection assessments and those completed for the vulnerability waivers for the SWAP assessments. In addition, we will be assembling

information that has been collected from a variety of sources to reduce the workload. We have begun identifying studies and the like that might be useful to SWAP, and will be evaluating ways to structure the process so that it does not increase the workloads of the public water systems. Given the magnitude of the task at hand, and the short time frame within which it must be completed, we are seriously examining the possibility of contracting to have some or possibly all of the elements done.

Page 11. Section 2.4 public outreach I agree that we need to expand the number of agencies targeted, and have added those you've recommended to the paragraph.

Page 12 making assessment results available to the public, Per your suggestion, I have added a paragraph that indicates that the PWSs will receive an advance copy of the contaminant inventory for comment prior to its release to the public.

Page 14. Section 3.0, delineation of source water areas, Your suggestion regarding the boundaries for surface water systems has been added.

Page 17. Assessment maps. Regarding the indication of various PSOCs on the assessment maps... In subsequent revisions, we have addressed the need for SWAP to use an iterative approach, which means that we will start with the PSOCs considered the most serious threats to the water source. These will be ranked using the non-mathematical model we have developed for the susceptibility analysis. These two approaches will limit the number of PSOCs that will need to be evaluated in the initial assessment. By limiting the PSOCs to those of greatest concern such as Superfund sites, hazardous materials disposal sites, underground storage tanks, etc., in close proximity to the intake or well, we should be able to complete the inventories by the 2003 deadline.

Page 18. Section 4.0, contaminant source inventory, In subsequent revisions to the SWAP, we have indicated that as the first step in the contaminant inventory process, the state will assemble information contained on federal and state regulatory databases. This information will include many of the permitted activities you have described. Once they are identified, a determination will need to be made regarding permit compliance as it will influence the susceptibility analysis rating. The iterative approach we are proposing to use with SWAP, starts with the most serious PSOCs for which data are available statewide. NPDES permit holders will be identified as PSOCs, as they do contribute to the pollutant load in a stream. The severity of the threat posed to the drinking water system however, will be evaluated in the susceptibility analysis when factors like non-compliance records will be considered in deciding the rating assigned.

As the SWAP matures, and our ability to assemble and evaluate pertinent data improves, the assessments will account for many of the items that you have identified. I believe that the strategy of starting with what we know, and building our knowledge base is a good one that will serve us well. The alternative, as I see it, is to try to factor in everything from the outset. We risk opening

ourselves to serious criticism and loss of faith by the citizens and stakeholders should we fail, and I'm fairly certain we would fail.

We will examine the 303(d) listed streams to identify those that are not only classified for drinking water use, but that actually serve as sources of drinking water. We will be looking at the reasons for the impairments and whether or not there is a connection to drinking water safety. Conceivably, there may be impairments to a stream that do not constitute serious drinking water concerns. I also assume that where drinking water concerns emerge on 303(d) listed streams, that on occasion, the only reasonable remedy will be treatment. With the recent revisions, I believe you will see a very clear link between Chapters 4, Contaminant Inventory, and 5 Susceptibility Analysis.

Page 19, Section 4.2 and 4.3, significant contaminant sources, your concerns have been addressed in the current revisions. The contaminant inventory starts with the integration of the state and federal regulated databases. Next, information is gathered on PSOCs at the county and local levels. The most significant sources are those that fall into classes A and B in the susceptibility analysis, these are those with the most serious consequences to human health, i.e. microorganisms, nitrates, etc. There is a table and a list of the contaminants in each of the three classes in the SWAP document. The low, moderate and high ratings are assigned based on a series of matrices that were developed to determine the threat, risk and vulnerability to the source water. The susceptibility determination emerges from the vulnerability ratings of the individual PSOCs. A narrative description of the susceptibility is then developed.

Page 20, Section 4.4, incentives for local participation, we have added a section describing the petition partnership program. We are still working on the design of the program, and how it will be integrated with other water quality efforts so that drinking water considerations are evaluated along with other concerns.

Page 21, need for statutory and regulatory citations, these citations will be used in the backup guidance documents; we did not see a significant need to include them here.

Page 23, Section 5, data collection and analysis, the QA/QC procedures will be appended to the SWAP document. We have made a commitment to the PWSs, where the state does the assessment, to provide them an opportunity to review and comment prior to release to the public.

Page 23, Section 5.1 electronic data acquisition and reporting, Please understand that SWAP will be an iterative process. The first iteration will likely be limited to the acquisition and integration of data on the most serious PSOCs in the SWAA. This will be the first time that we will have an opportunity to gather and combine the different data sets. The task is an enormous one, and we are expecting that the process will encounter problems with data incompatibilities, formatting problems, etc. It is our goal to move in the direction you have described, but we will not be able to perform at this level initially.

Page 24, Section 5.2, field data collection, the response prepared for the suggestion above applies here as well. We will not have as much information as might be desired when we undertake the first iteration of the SWAP assessment. We are limiting the first iteration to those PSOCs for which we have data statewide, and which we know are serious concerns to human health. We will build upon this information over time, and have made this commitment to the EPA.

The susceptibility guidance to which you refer was not issued on time, and the states had to move forward with their susceptibility analysis designs without it in order to meet the February, 1999 submittal deadline. When the guidance was released, it was ground water biased, and so had to be significantly revised for use in a state like Colorado. We have taken pains to develop what we believe is a very effective means of performing the susceptibility analyses. It is simple, so that it can be readily used by local PWSs and by citizen volunteers working with them. This is an important feature as the bulk of Colorado's PWSs serve fewer than 500 people; and the majority of the ground water systems fall into the transient, non-community category which include restaurants, resorts, RV parks and campgrounds. We expect that most of these systems will rely on the state to do their assessments..

I have enclosed a copy of the combination matrix that we are proposing to use for the susceptibility analyses and invite your comments. I field tested it recently with a class of water treatment plant operators, and was pleased with the outcome. I should mention that given the disparity in approaches that the states have developed for this component, the Region VIII EPA office is pleased with it.

Admittedly, the use of the combination matrix for the first round of susceptibility analyses will have conservative results. We don't view this as a problem however, and will be working to refine it as our data gathering and analyses capabilities improve.

Page 25, Section 6.0, susceptibility analysis, we have made clear in recent revisions that the susceptibility analysis follows the contaminant inventory. Our approach to susceptibility analysis is patterned on the EPA guidance, but could not include all of the items that EPA recommended as many were not consistently available for all areas of the state.

Page 25, Section 6.1, susceptibility analysis procedures, we are encouraging partnering among the PWSs and interested stakeholders throughout the SWAP plan, and will provide incentives for it to occur. Please recognize that we face some interesting challenges around the partnering issue. By electing to organize the SWAP program by watersheds and hydrologic units, we are transcending geo-political boundaries, and are looking at new partnering configurations. We are also advocating partnerships to protect common source water areas, another untested initiative. As you can imagine, we are breaking new ground here, and at this point in time have not had the luxury of defining all that we might do to work on developing partnerships. Our attention to this feature of SWAP will expand as the program evolves. We recognize that the opportunity for systems to partner on the assessment and the protection phases of SWAP will be very beneficial to the

Tad S. Foster Page 5

water providers and to the state.

Page 25, Section 6.2, assessment of potential sources of contamination (PSOCs), the points you have made here have been addressed in the recent revisions to the document. The integration has been addressed and lists of the factors used in the ratings are included.

Page 26, Section 6.4, use of the susceptibility analysis, we are somewhat hesitant to list management approaches as they may vary significantly for surface and ground water sources. In addition, our primary focus has to be on the completion of the assessments. You've made an interesting observation regarding treatment or management at the source vs. treatment prior to delivery. We have given considerable thought to this issue, particularly as it affects systems that divert water from other basins. It has become apparent that there will be situations that may have to rely on treatment rather than the preventive approach advocated in SWAP. We will need to reconcile these without undermining the goals of SWAP.

I hope these responses adequately address your comments. If not, or if you have any in addition, please feel free to contact me. The success of the program relies heavily on getting constructive feedback, our workload on the project really begins with the submittal, so there will be opportunities for input beyond submittal. Again, thank you for the time and thought that you've put in to the comments, they were very helpful.

Sincerely,

Kathleen Reilly, SWAP Coordinator
WATER QUALITY CONTROL DIVISION

Enclosure