

Approved: 1-26-98
Date

MINUTES OF THE HOUSE COMMITTEE ON ENVIRONMENT.

The meeting was called to order by Vice-Chairperson Joann Freeborn at 3:30 p.m. on January 14, 1998 in Room 526-S of the Capitol.

All members were present except: Rep. Steve Lloyd - excused

Committee staff present: Raney Gilliland, Legislative Research Department
Hank Avila, Legislative Research Department
Mary Ann Graham, Committee Secretary

Conferees appearing before the committee: Dr. James R. Triplett, Biology Department, Pittsburg State University

Others attending: See attached list

The meeting was called to order at 3:30 p.m. by Rep. Joann Freeborn, Vice Chair of the committee. She is Acting Chair in the absence of Chairman Steve Lloyd, due to illness. Chairperson Freeborn and Rep. Laura McClure, Ranking Minority Leader, will be meeting each week to set the weekly agenda. She encouraged anyone with issues they would like to discuss to feel free to contact either Rep. McClure or herself by phone or in person. Tomorrow, January 15, the committee will be hearing bill requests. Also, bill requests will be heard on Tuesday and Thursday of next week.

Chairperson Freeborn welcomed everyone to the committee and asked Raney Gilliland, Legislative Research Department, to introduce the agencies and staff. He introduced Karl Mueldener, Director, Bureau of Water, KDHE; Derenda Mitchell, Legislative Counsel; Steve Adams, Department of Wildlife and Parks; and Dr. James Triplett, Department of Biology, Pittsburg State University.

Dr. James Triplett, Chairman of the Kansas Special Commission on Water Quality Standards, gave a briefing on the Preliminary Report of that Commission to the committee. (See Attachment 1) This is a fulfillment of the requirement of **HB2368**. Dr. Triplett discussed the Summary of Preliminary Recommendations and answered questions by committee members.

Karl Mueldener, KDHE, also answered questions on water quality standards and was asked to provide additional information to the committee. Rep. Laura McClure asked him to provide for the committee any letters from the Environmental Protection Agency to KDHE concerning the change from 1ppb to 3ppb in surface water standards for atrazine contained in **HB2368** and return correspondence from KDHE to EPA. Rep. Tom Sloan asked for data on the Kansas and Republican rivers in regard to the amount of suspended solids that may be coming into those rivers from across the state line.

Chairperson Freeborn thanked Dr. Triplett for his presentation, Karl Mueldener for his participation and committee members and guest for their attention.

The meeting adjourned at 4:50 p.m.

The next meeting is scheduled for January 15, 1998.

HOUSE ENVIRONMENT COMMITTEE COMMITTEE GUEST LIST

DATE: 1-14-98

NAME	REPRESENTING
George Barbee	Barbee & Assoc's
Steve Adams	KDWP
Karl Muehlener	KDHE
Michaela Jacobs	Rep. Carl Holmes
Don Thelmann	Kansas Audubon Council
Lanise Ann Brown	Kans. Gov. Consult.
James R. Triplett	Surface Water Quality Control
Marty Vanier	Kansas Ag Alliance
Michelle Miller	Johnson County
Chris McKee	League of Kansas Municipalities
Derenda J. Mitchell	Kansas Dept. of Agriculture
Mike Beam	Ks. Livestock Assn.
Rebecca Rupp	Governor's office
Bill Henry	Ks Society of Professionals/Engineers
Steve Montgomery	CAS Construction

Surface Water Quality Commission

Marynell Hollenbeck, V. Chair, Kansas City
Dr. John Doull, Kansas City
Jon Ferguson, Kensington
Clifton E. Meloan, Manhattan
P. Martin Nohe, Leawood
Arthur F. Pope, Wichita

State of Kansas



James R. Triplett
Chair, Pittsburg

PRELIMINARY REPORT OF THE KANSAS SPECIAL COMMISSION ON WATER QUALITY STANDARDS

Transmitted on January 1, 1998

to

Governor Bill Graves
Kansas House of Representatives
Kansas State Senate

*House Environment
1-14-98
Attachment 1*

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Summary of Preliminary Recommendations

1. *Process for Establishing Designated Uses.* The Commission recommends a provision be added to Kansas statute outlining policy considerations that must be addressed by the Kansas Department of Health and Environment when establishing designated uses.
2. *Review Current Use Designations.* The Commission recommends a provision be added to Kansas statute requiring the Kansas Department of Health and Environment to review current use designations in a systematic manner. The evaluation should be based on recommended statutory policy considerations and input from the local community, recognizing the Federal Clean Water Act.
3. *Components of Use Attainability Analysis.* The Commission recommends the Kansas Department of Health and Environment develop a scientifically based, objective process to conduct use attainability analysis. The Commission also recommends Health and Environment consider employing use attainability analyses from independent entities so long as each entity has followed the process for use attainability analysis developed by the agency.
4. *Ammonia Criteria.* The Commission recommends winter ammonia limits be addressed including an evaluation of the aquatic community after seasonal nitrification.
5. *Atrazine Criteria.* As an interim measure, the Commission recommends the atrazine criteria for chronic aquatic life remain at 3 ppb until more research on the range from 1 ppb to 20 ppb is reviewed or conducted.
6. *Chlorides Criteria.* The Commission recommends the Kansas Department of Health and Environment address the impact of natural mineral intrusion on Kansas stream quality and subsequent permits.
7. *Fecal Coliform Criteria.* The Commission recommends a reexamination of the EPA criterion to determine if it is an adequate indicator of public health risks.
8. *Seasonal Criteria.* The Commission recommends that the Kansas Department of Health and Environment seriously consider seasonal variations where appropriate.
9. *General Pollutant Criteria.* The Commission recommends that if water quality criteria are to be established and are more stringent than EPA requirements, they must be justified with a risk assessment analysis, and where appropriate, a cost/benefit analysis.
10. *Stream Impairment Determination.* The Commission recommends the Kansas Department of Health and Environment add a provision to its regulations to clarify that narrative criteria alone, especially total suspended solids (TSS), should not determine stream impairment for listing purposes.

11. *Mixing Zones.* The Commission recommends the Kansas Department of Health and Environment modify its regulations to ensure that when data is available, actual effects take precedence over models or mathematical calculations.

12. *Monitoring.* The Commission recommends the Kansas Legislature and the Governor establish a dedicated funding base to support water quality monitoring, both chemical and biological.

13. *Public Participation.* The Commission recommends a provision be added to Kansas statute requiring and outlining enhanced public participation in the water quality standards setting process to reinforce the requirements of the Federal Clean Water Act.

14. *Implementation Procedures.* The Commission recommends the Kansas Department of Health and Environment fully incorporate implementation procedures into regulation.

15. *Funding.* The Commission recommends the Legislature place a high priority on funding the necessary components for an effective and efficient water quality standards setting process.

INTRODUCTION

In fulfillment of the requirement of 1997 House Bill No. 2368, the Kansas Special Commission on Water Quality Standards submits its preliminary report. The Commission held eight, one-day meetings across the state, gathering information to address the work designated for the Commission by the Legislature in H.B. 2368. At each meeting, the Commission heard from an average of six invited experts. The Commission also took comments from stakeholders¹ at every meeting. The Commission deliberated on the content of this preliminary report during six hours of conference calls and a half-day face-to-face meeting.

The Commission reminds the Legislature and the Governor that this is only a preliminary report. The information that follows is subject to further review and discussion. There are still several important issues the Commission intends to consider. These include: (1) the inherent conflict the Kansas Department of Health and Environment finds itself in as the scientist, rulemaker and enforcer of water quality standards; (2) a mediation process to settle disputes and conserve both public and private resources; and (3) the components of an effective stakeholder participation process. With this and the information the Commission has already gathered, a final report will be submitted by June 30, 1998 as required by statute.

Background

Many people believe all that is needed to get the "right" answer is "good science." They tend to view science as black or white and very concrete. However, "good science" is more subjective than most believe. In fact, the answers are no better than the questions. The more society knows and understands about an issue, the better the questions that can be asked. The only good questions for the scientific method are those that can be proven false -- science can prove things are false, but cannot necessarily prove things to be true. At one time, the collective wisdom said the world was flat. The questions one might ask then would be markedly different

¹ Within the context of this document, stakeholder means groups or individuals, including state, tribal and local governments, industry and small business, environmental groups, academia, and others who are affected by or have an interest in the Kansas surface water quality standards.

from those based on what is now known. Knowledge based on science builds on it, changes, as it should, based on the best available knowledge. So, from technology, we use Best Management Practice, and from science, we use the Best Available Knowledge.

The waters of the State are one of the State's most important natural resources. The Commission recognizes that by law, these waters are a public trust, belonging to all but owned by none. The Commission also recognizes the historic precedence of water use in Kansas that encourages a dual role -- protecting natural uses as well as uses for the development and growth of the community. All approved uses for legal purposes, ranging from public water supply to the discharge and dilution of wastes, are a privilege granted by the trust holders to the applicant. No one has the right to violate the public trust or deprive another of their privilege without permission. At the same time, the Commission acknowledges the critical importance of water to support agriculture, municipalities, industries, domestic uses, fish and wildlife, and recreation. The State is given the responsibility to ensure adequate protection and management of this resource. Concerns for human health, ecosystem balance, economic development and aesthetics require the State to develop policies, programs, laws and regulations that adequately protect water resources, yet permit, as much as possible, their full use.

Kansas has had water quality standards since before the passage of the Federal Clean Water Act in 1972. Like the federal law, Kansas law and regulations have continued to evolve over the past 25 years. Kansas derives its authority to issue National Pollutant Discharge Elimination System (NPDES) permits for wastewater dischargers from federal law and implementing regulations written by the Environmental Protection Agency (EPA). Permits are written so that dischargers meet pollutant criteria that in turn protect the designated uses for Kansas streams.

Kansas regulations received a major overhaul in 1994. For the first time, Health and Environment utilized the EPA river reach file 2 (RF2) and river reach file 3 (RF3) for identification and delineation of designated uses, tripling the number of streams assigned designated uses. At a minimum, all classified surface waters were designated for the noncontact recreational use and one of the three categories of aquatic life support. Health and Environment performed 219 use attainability analyses resulting in 29 percent of all streams being designated

for contact recreation. The food procurement use was assigned to newly listed streams which were known to support panfish and/or significant angling resources based on a 1981 stream and river fishery resource evaluation. The special aquatic life support designation was assigned based on the presence of state or federally listed threatened or endangered species or "species in need of conservation." In all, 17 percent of all streams listed were assigned the special aquatic life support use. Thirty-four streams, constituting four percent of the state's classified stream miles, were added to the list of outstanding natural resource waters. Numeric criteria were established for an additional 176 pollutant parameters and numeric restrictions on whole-effluent toxicity were adopted. A graduated mixing zone system was established and approximately 60 technical terms and phrases were defined.

Early in the 1997 triennial review process -- a review of water quality standards required by federal law -- the debate shifted from Health and Environment to the Kansas Legislature. House bill 2368 was introduced by Representative Andrew Howell (R-Fort Scott) in response to the tone of the review and the difficulty the City of Fort Scott felt it was experiencing with Health and Environment. After much debate in both the House and Senate committees of jurisdiction, H.B. 2368 passed both chambers by an overwhelming margin. The bill set both the ammonia and chloride criteria based on 1987 regulations and established the atrazine chronic aquatic life criteria at 3 parts per billion (ppb) for all classified streams. The bill established the Kansas Special Commission on Water Quality Standards to examine a wide variety of issues and report back to the Legislature and Governor with a preliminary report due January 1, 1998 and a final report due six months later.

Summary of Concerns

The Legislature established the Kansas Special Commission on Water Quality Standards during the 25th anniversary of the Clean Water Act. It expressed interest in reassessing the current "way of doing business" given that current water quality problems are not as visible as they were 25 years ago. In 1972, people saw streams black from discharges, colored with industrial wastes and lined with sludge from cities and industry. The condition of Kansas streams has improved substantially -- the amount of pollution has decreased at the same time

population and industry has increased. Generally, both fecal coliform and ammonia are found to be about 90 percent less than 1976 levels. Significant progress can be found in every stream community in Kansas including the Arkansas River, Big Creek, Johnson County Mill Creek, Sedgwick County Four Mile Creek and Shawnee County Half Day Creek, to name a few. Work still remains, but it is less visible and will require much more public education and stakeholder involvement.

The Commission notes, however, that some stakeholders would disagree with the suggestions that Kansas has made progress citing that the state is often ranked at the bottom of state comparisons for water quality. The Commission notes Kansas has one of the most comprehensive stream monitoring programs in the nation, as well as far-reaching designated uses compared to other states. For example, Drywood Creek is a creek Kansas shares with Missouri. It is designated for aquatic life and noncontact recreation in Kansas. Missouri has designated Drywood Creek for livestock watering, warm water aquatic life, human health, and fish consumption. Due to Kansas' more rigorous designations, Drywood Creek is designated as impaired by bacteria in Kansas, but not in Missouri. In fact, Drywood Creek will never be designated impaired for bacteria in Missouri because the only designation tied to bacteria is recreation, which Missouri has not assigned to Drywood Creek. Therefore, the public would be led to believe that Drywood Creek is dirty in Kansas, but clean in Missouri.

Water quality standards consist of two components: designated uses and criteria. Kansas regulations define uses for the surface waters of the state to include recreation, aquatic life, food procurement, irrigation, livestock watering, domestic water supply, industrial water supply, and groundwater recharge. Criteria then are set to protect the established uses. Finally, wastewater discharge permit limitations encompass the criteria to ensure that designated uses are protected.

Designated Uses. The Commission spent two full meeting days hearing from a variety of experts from both inside and outside government. Comments also were solicited from stakeholders during the public comment period. Concerns were raised about the appropriateness of many of the use designations assigned by Health and Environment as not representing either existing or potential uses. Concerns were raised about the attainability of many of the contact recreation use designations because of access limitations, both legal and physical. Others,

however, believed these designations were appropriate and in fact should be expanded to cover all waters of the state.

The economic impact of use designations was also discussed. Some groups recommended that economic impact be assessed prior to the establishment of use designations. Others were concerned about the practical difficulties of valuing benefits, and the possibility that a cost/benefit analysis would be skewed toward costs without accurately reflecting benefits. The Commission received a suggestion that Outstanding Natural Resource Water (ONRW) designations be systematically reviewed, including a detailed economic impact assessment. A recommendation to establish a procedure to nominate streams as ONRWs was also expressed. The Commission was informed that 98% of the high chloride occurrences in the state were caused by natural mineral intrusion (NMI). A recommendation was received to reassess stream designations where NMI impacts were experienced and to establish a saline aquatic life designation.

Criteria. The Commission concentrated its fact finding and deliberation on four criteria -- ammonia, atrazine, chlorides and fecal coliform. Municipalities expressed concern that the current winter ammonia limits were more restrictive than necessary to protect aquatic life. They suggested Kansas give due consideration to seasonal limits used by other states and accepted by EPA. Others suggested, however, that these recommendations reflect some cities interest in avoiding needed plant upgrades. A wide range of views were expressed regarding the atrazine criteria. Testimony was presented supporting a 1 ppb chronic aquatic life standard, while an EPA document supported 12 ppb as the aquatic animal criteria. Others suggested using a probabilistic ecological risk assessment technique to establish the numeric standard. There was general agreement regarding the chloride criteria. A strategy employing regional or segment-specific criteria based on historical stream monitoring data was suggested. Finally, the Commission determined that the basis for the fecal coliform criteria needed to be reevaluated. Source identification was suggested by several groups.

Implementation. Throughout the Commission deliberations, concerns were raised about the use of models and mathematical calculations versus actual data, when it was available. Concerns were also raised about flexibility used by others states and accepted by EPA that were

not used by Kansas. Others raised concerns that implementation procedures received no public input and suggested putting them into the formal rules and regulation process.

PRELIMINARY RECOMMENDATIONS AND POLICY CONSIDERATIONS

1. Process for Establishing Designated Uses. *The Commission recommends a provision be added to Kansas statute outlining policy considerations that must be addressed by the Kansas Department of Health and Environment when establishing designated uses.* The basic requirements should include: (1) stakeholder participation and education; (2) a formal use attainability analysis; (3) an economic impact assessment -- both costs and benefits -- with a report to stakeholders; (4) a consequence analysis when proposed designations are more restrictive than federal requirements; (5) use designations set on a segment by segment basis; and (6) a shifting of the burden of proof to the State if a dispute over the appropriateness of a designated use arises. The Commission recommends Health and Environment develop a methodology to perform each economic impact assessment and consequence analysis, making the methodology available for public review. The Commission also suggests that Health and Environment consider the existence of a relationship between habitat impacts, restoration of a target species, the pollutants regulated and the designated use assigned.

These policy considerations would change the current water quality standards paradigm in Kansas. The Commission recommendations would shift the burden of proof from the private sector to the State for establishing use designations. However, heightened stakeholder involvement in the process could encourage acceptance of the designation and actions that lead to achieving designated uses more quickly. Fewer resources may be required to defend Health and Environment decisions and more on achieving compliance. This method may require more State resources -- both human and financial -- or a redirection of resources across state agencies. However, either are expected to result in improved water quality.

In testimony before the Commission there was consensus that stakeholder input in the process of establishing designated uses is appropriate. The majority of those appearing before the Commission believe that a process encouraging involvement must be a high priority

(KS Farm Bureau, City of Ft. Scott, KS Dept. of Agriculture). Some likened an ideal process to the recently revised process for listing threatened and endangered species, which provides for public meetings at the beginning of the process and the use of local advisory committees to develop and implement species protection plans (KS Farm Bureau, KS Audubon Society, KS Dept. of Wildlife and Parks). Others advocated setting all uses for all waters unless a use attainability analysis demonstrates that the use cannot be attained (Sierra Club, KS Natural Resources Council). Economic impact assessments were supported by those in the regulated community, but viewed with skepticism by others because of the application difficulties. All supported employing a use attainability analysis. Opinions diverged regarding when the use attainability analyses should be applied. A summary of the divergent opinions is outlined in the recommendation on use attainability analysis below (page 8).

2. Review Current Use Designations. *The Commission recommends a provision be added to Kansas statute requiring the Kansas Department of Health and Environment to review current use designations in a systematic manner. The evaluation should be based on recommended statutory policy considerations and input from the local community, recognizing the Federal Clean Water Act.* Health and Environment should prioritize stream segments for review giving first priority to those segments where current use designations are contentious. The components of use attainability analysis set out in recommendation three should be used by Health and Environment to complete this review.

The recommended process for establishing designated uses outlined in recommendation one will provide the tools necessary for local discussion of the ramifications of current designated uses on environmental quality and the local community, keeping in mind that the Clean Water Act requires states to protect existing uses. The public discussion will help build public support necessary to meet the water quality standards that are driven by the designated use assignment. This process may require a redirection of or more state resources -- both financial and human -- than the current process. Review of current use designations without additional resources would require Health and Environment to shift resources from current activities. However, the Commission believes a review is extremely important to ensure a sound foundation for Kansas water quality standards.

In testimony before the Commission, differences of opinion existed over what level of water quality was attainable and what cost was reasonable to achieve attainment. There was also a distrust of the current method of setting designated uses. All believed their point of view met the basic requirements of the Federal Clean Water Act. Several conferees believed Health and Environment did not appropriately consider attainability when assigning uses given the physical characteristics of streams, the impacts of forces other than dischargers on streams, as well as the economic consequences to surrounding communities (City of Topeka, City of Fort Scott, KS Aggregate Producers). Others believed all waters should be protected for all uses unless there was evidence to the contrary (Sierra Club). Wildlife enthusiasts emphasized the importance of water quality to wildlife habitat (KS Audubon Society, KS Dept. of Wildlife and Parks). This wide difference of opinion suggests a need to elevate the review to a statutory requirement and include stakeholders in the deliberations.

3. Components of Use Attainability Analysis. *The Commission recommends the Kansas Department of Health and Environment develop a scientifically based, objective process to conduct use attainability analysis. The Commission also recommends Health and Environment consider employing use attainability analyses from independent entities so long as each entity has followed the process for use attainability analysis developed by the agency.* Use attainability analysis should include a thorough and rigorous analysis to identify characteristics necessary to support uses, as well as field observations. The process should be publicly reviewed each time it is updated.

Establishing a use attainability analysis process lets all stakeholders know how use designations will be set. Further, if someone outside the agency elects to expend private funds to support an independent entity in performing a use attainability analysis, they will then have a reasonable expectation that this analysis will be given serious consideration. An open process, should reduce conflict between Health and Environment and stakeholders, as well as increase public support for use designations that are established.

Testimony before the Commission indicated support for formal use attainability analysis. The disagreement surfaces over the question of when it should apply. Representatives for point and nonpoint sources agree that use attainability analysis should be performed prior to the

establishment of designated uses. Other parties believe that all uses should be designated for all waters unless a use attainability analysis demonstrates that the use cannot be attained (Sierra Club, KS Natural Resources Council). Federal regulations² set out a very rigorous format that states must follow if a designated use is to be changed.

4. Ammonia Criteria. *The Commission recommends winter ammonia limits be addressed including an evaluation of the aquatic community after seasonal nitrification.* The Commission further suggests a review of the acute/chronic ratio and the methodology for establishing the ammonia criteria. The Commission believes a 30-day chronic averaging method is reasonable given the testimony presented. Further, histopathological data should not be given priority over other factors when examining the weight of evidence for criteria establishment.

Winter ammonia limits should allow local communities to target limited resources at significant water quality problems. Evaluation of the aquatic community after seasonal nitrification can serve either to validate the practice or provide information to justify the need for further protection to the local citizenry. Additional resources may be required for Health and Environment and from the local community to conduct the necessary evaluations.

The Commission believes the recommendations outlined above are consistent with the intent of the 1997 EPA proposed guidance on ammonia. Municipalities expressed concern that the current winter ammonia limits were more restrictive than necessary to protect aquatic life. Concern was also expressed that Kansas had not given due consideration to seasonal limits used by other states and accepted by EPA as protective of aquatic life (League of Kansas Municipalities). Support was expressed for the evaluation of the aquatic community after seasonal nitrification to examine actual impacts on aquatic life, use of a 30-day chronic averaging method and removal of histopathological data from the criteria establishment process. The Commission was urged to continue to ask questions about cost effectiveness -- "cities are concerned about aquatic life, but are also concerned about taxpayers, especially those in small cities who do not have the opportunity to raise questions." Concerns were raised by others about the lack of funding for water quality research that could impact water quality in this area and in

² 40 C.F.R. 131.10(g)

general (KS Audubon Society). Another testified that the changes sought were just an attempt to get some cities off the hook from making needed plant upgrades (Sierra Club).

5. Atrazine Criteria. *As an interim measure, the Commission recommends the atrazine criteria for chronic-aquatic life remain at 3 ppb until more research on the range from 1 ppb to 20 ppb is reviewed or conducted.* The Commission was presented with evidence advocating a range of criteria. There was evidence presented that showed some aquatic impacts when atrazine levels were at 1 ppb, and other studies indicated that upwards of 12 ppb could be assimilated without impacts on aquatic life.

The Legislature established the chronic aquatic life criteria at 3 ppb with the passage of H.B. 2368 in 1997. The current drinking water standard is 3 ppb. Setting the chronic aquatic life criteria at anything greater than 3 ppb should have no impact in streams that are designated for domestic water supply since the most protective criteria apply where dual designations exist. Funding may be needed for a portion of the research to determine the impact of atrazine on aquatic life in the range of 1 ppb to 20 ppb.

Scientific studies were presented representing a wide array of views. Testimony and studies were presented supporting 1 ppb and advocating some evidence that a lower criterion would be appropriate (Sierra Club). Including atrazine metabolites in the measurement of atrazine in water was also advocated. An EPA draft criteria document was discussed that recommended 12 ppb as the aquatic animal criteria and 49 ppb as the aquatic plant criteria. Others advocated directing Health and Environment to use the probabilistic ecological risk assessment technique to establish the numerical standard presented to the Commission by Dr. Keith Solomon³ (KS Corn Growers Assn, KS Sorghum Producers Assn., KS Fertilizer and Chemical Assn.). Information was also presented predicting the economic impact of an atrazine ban on Kansas agriculture of more than \$200 million annually (Dr. Dick Faucet⁴, KS Corn Growers Assn, KS Sorghum Producers Assn.).

³ Dr. Keith Solomon, Center for Toxicology, University of Guelph, Ontario, Canada

⁴Dr. Dick Faucet, Faucet Consulting, Huxley, Iowa

6. Chlorides Criteria. *The Commission recommends the Kansas Department of Health and Environment address the impact of natural mineral intrusion on Kansas stream quality and subsequent permits.* The agency should establish regional or segment specific criteria working with the Kansas Geological Survey (KGS) to determine what numeric criteria is appropriate on a watershed or segment basis. Health and Environment should review the appropriateness of the acute and chronic criteria for Kansas utilizing all existing information, not just that provided by EPA. Health and Environment should also consider use of variances or exemptions when chlorides are elevated due to natural causes. Finally, Health and Environment should move existing language [K.A.R. 28-16-28e(c)(3)(B)] that references natural mineral intrusion to the administrative section of the standards (K.A.R. 28-16-28f) and modify the language by striking domestic water supply and replacing it with designated use.

The Commission learned that a blanket chloride criteria was adopted by Health and Environment as a matter of expediency to meet EPA deadlines. Given 20 years of work done by the KGS which shows there are areas of the state that naturally exceed the criteria and have alkaline habitats, adjusting this criteria to consider natural conditions will make the standard more accurately reflect naturally occurring stream conditions. Because information and data are readily available, this work could be done at limited expense to the State.

In testimony before the Commission, the KGS reported that more than 98 percent of the elevated chlorides in state waters are caused by natural mineral intrusion. The Commission also learned that unique saline ecosystems have formed because of this natural intrusion (KBS). Point source dischargers encouraged the Commission to recommend a strategy employed by other States where there is also a prevalence of natural mineral intrusion. This includes establishing regional or segment-specific criteria based on long-term average flows and actual chloride concentrations from historical stream station monitoring data (City of Lyons, North American Salt Co., Morton Salt Co., City of South Hutchinson, City of Hutchinson, Cargill Salt Co.). Administrative changes were also recommended to give Health and Environment maximum flexibility when addressing natural mineral intrusion. An internal memorandum from Health and Environment was provided. It stated that the agency was well aware that less stringent, site-specific criteria could potentially be applied to some stream segments based on

mineral intrusion considerations. The memorandum went on to say that it was equally evident that natural phenomena were not consistently or solely responsible for the elevated levels of chlorides documented in several streams in central Kansas (Sierra Club, KS Natural Resources Council, KS Dept. of Health and Environment).

7. Fecal Coliform Criteria. *The Commission recommends a reexamination of the EPA criterion to determine if it is an adequate indicator of public health risks.* The Commission also recommends the exploration of the impacts of seasonal disinfection -- both aquatic and monetary -- and the public health risk associated with fecal coliform spikes caused by runoff events. Source identification is an important component to reducing public health risks.

The criteria used by the Kansas Department of Health and Environment was established by EPA in 1986. The Commission believes more research is available that did not exist a decade ago and it should be evaluated. This could reduce the public health risks from bacteria contamination. Further, more recent research using D.N.A. techniques has been developed to determine the source of contamination. This should be utilized to reduce public health risks. This reexamination may likely increase costs to the State.

The Commission heard testimony from a wide variety of stakeholders on the indicator nature of fecal coliform and the public health concerns this type of pollutant can cause. Some suggested requiring disinfection only during the recreation season for those streams designated for noncontact recreation (Johnson County Wastewater). Others argued that recreational uses of waters occur throughout the year and include waterfowl hunting, furharvesting and fishing which continues through the winter months (KS Dept. of Wildlife and Parks). Still others believed disinfection should be required for all classified streams, not just those known to be used for recreation (Sierra Club, KS Natural Resources Council). Testimony was also heard advocating reexamination of the current high flow exclusion to include an exemption from the contact and noncontact use designation during the first 24 hours of a storm and establishing a partial recreation use designation to temporarily remove fecal coliform limits during wet weather (KS Livestock Association, League of Kansas Municipalities).

8. Seasonal Criteria. *The Commission recommends that the Kansas Department of Health and Environment seriously consider seasonal variations where appropriate. Parameters for review should include, but are not limited to dissolved oxygen, fecal coliform and wet weather versus dry weather flows.*

Information brought before the Commission indicates seasonal variations are accepted by EPA and used in several other states. This should result in criteria more accurately reflecting conditions in the field. It may also require more agency resources.

More than a dozen conferees came before the Commission to discuss the complex issues surrounding criteria establishment. It appeared seasonal variations offered a possible solution to several implementation issues brought forward. For example, one suggestion was to amend the contact recreation standard so it only applied from Memorial Day to Labor Day (KS Livestock Assn.). Others felt the contact recreation standard should apply to more waters throughout the year (Sierra Club, KS Natural Resources Council, KS Dept. of Wildlife and Parks). The impact of wet weather events on pollutant loadings and the ability of cities and agriculture to control the loadings was a concern (Black & Veatch, KS Livestock Association).

9. General Pollutant Criteria. *The Commission recommends that if water quality criteria are to be established and are more stringent than EPA requirements, they must be justified with a risk assessment analysis, and where appropriate, a cost/benefit analysis. A methodology should be developed to communicate the results effectively to stakeholders.*

EPA provides states with criteria guidance on a variety of parameters. States can use this criteria, refine it to fit localized conditions or develop their own, so long as it protects the designated use. Requiring Health and Environment to justify more stringent standards is sound public policy. The analysis will either serve as a tool to justify increased expenditures to protect water quality or it will illustrate why the more stringent requirement is not appropriate.

Health and Environment is already required to submit an environmental benefit and economic impact statement on new regulations under K.S.A. 77-416. The Commission emphasizes the importance of this review, and suggests adding this requirement to the environmental protection statutes specifically.

10. Stream Impairment Determination. *The Commission recommends the Kansas Department of Health and Environment add a provision to its regulations to clarify that narrative criteria alone, especially total suspended solids (TSS), should not determine stream impairment for listing purposes.* Health and Environment has established 100 mg/L as the threshold for determining impairment and has placed TSS as a lower priority in the Total Maximum Daily Load (TMDL) calculation process.

This policy will ensure both subjective and objective criteria determine the attainment of a designated use for listing purposes and clarify the true condition of Kansas waters. The Governor and the Legislature are very aware the State is often ranked at the bottom of state comparisons for water quality. The Commission notes Kansas has one of the best stream monitoring programs in the nation, as well as a comprehensive system for the assignment of designated uses. For example, Beaver Creek is shared with Nebraska. In Kansas, it is designated for every use including expected aquatic life and noncontact recreation. In Nebraska, it is designated for primary contact recreation (a seasonal designation applying from May to September with no recreation designation for the remainder of the year), warm water fisheries, agriculture and aesthetics. Beaver Creek is designated as impaired in Kansas for fluoride, dissolved oxygen (DO) and total dissolved solids. In Nebraska, Beaver Creek is not designated as impaired for fluoride because it is not designated for drinking water -- the only designation tied to the fluoride criteria by Nebraska. Further, Nebraska has a seasonal criteria for dissolved oxygen while Kansas has one set number, 5.0 mg/L. If October readings for Beaver Creek are 4.0 mg/L in Kansas, the Creek is designated as impaired for DO. However, in Nebraska Beaver Creek is not designated as impaired because Nebraska's seasonal criteria for DO is 3.0 mg/L. Again, the public is lead to believe the Creek is dirty in Kansas, but clean in Nebraska.

In testimony before the Commission, there was concern that because narrative criteria cannot be evaluated with monitoring, it should not be the sole indicator of impairment (Johnson County Wastewater).

11. Mixing Zones. *The Commission recommends the Kansas Department of Health and Environment modify its regulations to ensure that when data is available, actual effects take precedence over models or mathematical calculations.* Mixing zones should relate to the toxic

potential of the discharge, established dose/response relationships, actual plume character and time of exposure, rather than geometric sizes and models when this information is available. The Commission also recommends Health and Environment consider allocating the full stream for a mixing zone if the effluent is 1/20 or less of the full stream and the discharges are not acutely toxic. Further, Health and Environment should consider modifying implementation regulations so the best available science on the toxicological kinetics of pollutants is utilized.

The implication for local units of government and industry is simple: the more stream available to dilute the effluent, the cheaper the treatment costs. It is in their economic best interest to provide Health and Environment with the necessary data to move away from the use of geometric means and models toward actual stream data. This should not substantially increase the cost to the State as the Commission is not recommending that the State gather the data for the permit holder. Health and Environment would, however, need to expend resources to properly evaluate information submitted by the permit holder.

Mixing zone implementation is another instance where points of view diverge. Municipalities consider the use of actual data as appropriate for establishing mixing zones, and if the data warrant, use of the full stream for mixing. Others may support the use of data, but other positions, such as support of a prohibition on mixing zones in lakes, prohibition of mixing zones crossing tributary mouths, and support of restricting the mixing zone to 25 percent of the 7Q10 flow (Sierra Club, KS Natural Resources Council) seem to indicate that actual data would be irrelevant in these situations. However, these stakeholders have also suggested that they support the allowance of overlapping mixing zones so long as the Department finds the overlapping will not result in a violation of any of the general water quality criteria.

12. Monitoring. *The Commission recommends the Kansas Legislature and the Governor establish a dedicated funding base to support water quality monitoring, both chemical and biological.* This information should be used to focus state government resources on problems identified by the monitoring.

Establishing a dedicated funding base for water quality monitoring should ensure adequate resources are provided to characterize accurately the quality of Kansas waters. Further, information will allow policy makers, the regulated community and other stakeholders to

identify problems and prioritize resources to improve water quality. While this may require an increase in the State's monetary commitment to water quality monitoring, it will also save private sector resources by focusing on documented problems rather than perceived ones.

Testimony and discussion before the Commission indicated broad-based support for this recommendation.

13. Public Participation. *The Commission recommends a provision be added to Kansas statute requiring and outlining enhanced public participation in the water quality standards setting process to reinforce the requirements of the Federal Clean Water Act.* The implementing regulations should establish a procedure to involve all stakeholders early in the standards setting process creating a method for buy-in for specific or additional levels of protection. This includes all facets of designated uses, criteria and TMDLs. Stakeholders should review the fiscal impact and assessment analysis, as well as the risk assessment analysis and be assisted in understanding the ramifications of water quality standard proposals on their communities.

The recommended public participation process will provide necessary local discussion of the ramifications of designated uses and the protective criteria on environmental quality and the local community. The public discussion could help build the public support necessary to meet the water quality standards. This process may require more state resources -- both financial and personnel -- than the current process; however, the Commission believes public participation is extremely important to ensure improved water quality.

The issues outlined under public participation in the establishment of designated uses applies to the overall participation of stakeholders in the water quality standards process. However, the Commission recognizes that by current federal regulation cost/benefit analysis does not apply to the establishment of criteria. Criteria that protect the designated use must be adopted.

14. Implementation Procedures. *The Commission recommends the Kansas Department of Health and Environment fully incorporate implementation procedures into regulation.* This will assure adequate peer review, stakeholder participation and consistent application of water quality standards.

Health and Environment is given great latitude regarding implementation procedures by EPA. Formalizing these procedures could reduce the agency's flexibility while clarifying a complicated process.

In testimony before the Commission, this concept was supported because of concerns the procedures could be changed by Health and Environment staff without review (Sierra Club, KS Natural Resources Council). They felt there were too many important issues left to interpretation in the implementation procedures for this document not to receive public review when it is revised.

15. Funding. *The Commission recommends the Legislature place a high priority on funding the necessary components for an effective and efficient water quality standards setting process.* The Commission suggests dedicated funding for water quality monitoring and use attainability analysis. The Commission also suggests Health and Environment ensure its policies are established in relation to available resources, both public and private. Finally, the relevant agencies should actively manage the wealth of information they currently have and capture it in a cost-effective manner.

Placing a higher priority on funding water quality infrastructure may require taking money from other sources. However, in the long-term, all resources -- both public and private -- are more wisely spent when information is available to target problems. This information will also assist stakeholders in evaluating conditions and coming to rational solutions which will improve the overall water quality of the State.

In order to adequately provide for public input into the water quality standard setting process, as envisioned by the Federal Clean Water Act, the Commission recognizes that additional information, resources and a concentrated effort at public education are required. The current system of limited public involvement and an unstandardized approach has polarized the current stakeholders in the debate. Involvement of stakeholders early in the process with information to make informed decisions will encourage support necessary to ensure protection of the State's water resources.

Conclusion

The Commission believes the preliminary recommendations outlined above can guide any action the Legislature or Governor may decide to pursue. The final Commission report will be completed by June 30, 1998. The Commission intends to further explore the topics outlined above and to gather more information on a more appropriate structure for the protection of surface water quality. The structure analysis will include research leading to criteria setting, monitoring, policy establishment and subsequent regulations, and enforcement, as well as a mediation process. The Commission will also explore methods to effectively involve all stakeholders in the water quality standards process as was envisioned by the Federal Clean Water Act.