	Approved February 18, 1983
	Date
MINUTES OF THE Senate COMMITTEE ON	Energy and Natural Resources
The meeting was called to order byS	Senator Charlie L. Angell at
8:00 a.m./XXX on Thursday, February	17 , 1983 in room <u>123–S</u> of the Capitol.
All members were present xxxxxx :	

Committee staff present:

Ramon Powers, Research Department Don Hayward, Revisor's Office LaVonne Mumert, Secretary to the Committee

Conferees appearing before the committee:

Robert Binder, Kansas Water Authority Larry Panning, Kansas Water Authority

James F. Aiken, Jr., Director of Division of Environment, Kansas Department of Health and Environment

The minutes of the February 16, 1983 meeting were approved.

The Committee discussed the fact that Kansas Water Authority members receive no compensation or expense reimbursement except for Authority meetings and subcommittee meetings. Senator Hess moved that the Committee introduce a bill which would provide for compensation and reimbursement of expenses for official business for Water Authority members. Senator Vidricksen seconded the motion, and the motion <u>carried</u>.

S.B. 273 - Minimum streamflows

Robert Binder read his written testimony (Attachment 1). He said S.B. 273 would provide some means for identifying minimum streamflows other than by statute. The Authority suggests that the Kansas Water Office (KWO) proceed with meshing Kansas Department of Health and Environment (KDHE) and Fish and Game flow requirements into a proposed minimum desirable flow. They propose that the Authority approve minimum flow requirements based on information from the KWO. In areas where water cannot be released from reservoirs to make up shortfalls, the Authority proposes that the Division of Environment and the groundwater management districts devise plans to assist in maintaining flows. The Authority proposes that KWO would develop flood flows where there are reservoirs. The Authority requests some indication from the Committee that the Authority's proposed policy is acceptable and should be implemented. Chairman Angell asked if, under S.B. 273, it would be possible for the Authority to stop all appropriations on a stream to maintain minimum streamflow. Mr. Binder answered that would be possible, however, the Authority's Report to the Legislature sets forth a procedure for trying to provide minimum streamflow as long as there is water available. Chairman Angell pointed out this bill would be the first departure from the procedure of the Authority making recommendations to the Legislature for their approval. Mr. Binder reiterated that the present statutes in regard to this area are very burdensome and nothing has been done, but something certainly needs to be started.

- S.B. 268 Civil penalties imposed upon damage to water quality
- S.B. 269 Information on water wells submitted to the department of health and environment
- S.B. 270 Intensive groundwater use control areas
- S.B. 271 Increasing the balance in the pollutant discharge cleanup fund
- S.B. 272 Amending the state water planning and plan acts

Larry Panning read his written testimony (Attachment 2). He said S.B. 272 would provide that KDHE develop water quality elements of the state water plan to be merged through the KWO into the state water plan. S.B. 269 would provide that KDHE be advised of the drilling and abandonment of data and research wells. S.B. 271 would raise the maximum on the amount of money that could be deposited in the pollutant discharge fund from \$50,000 to \$500,000. S.B. 268 would provide that KDHE could assess civil penalties for water pollution for persons causing pollution who cannot be charged under any other agency's rules and

CONTINUATION SHEET

MINU	TES OF TH	E Senat	:e C	COMMITTE	E ON	Energy an	d Natural	Resources	
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room _	123-S, Stat	ehouse, at	8:00	a.m./ XXX .	on	Thursday,	February	17	19 ^{_83}

regulations for civil penalties. Mr. Panning suggested that the bill be amended to clarify that it applies to polluters who are not subject to civil penalties prescribed under the authority of any other state agency. S.B. 270 provides that KDHE has responsibility to notify the existing agencies of potential water quality problems. Answering questions from the Committee members, Mr. Aiken said presently there is no money in the pollutant discharge fund. The Committee discussed adding the words "and development" after the word "identification" in line 91 of S.B. 272. Mr. Panning suggested that the word "board" be replaced by the words "Kansas Water Office" in line 26 of S.B. 272. It was suggested that the third word in line 33 of S.B. 270 be changed to "area".

James F. Aiken, Jr. distributed "An Overview of the Plan for Protection of Kansas Ground-water Resources from Pollution" (Attachment 3). Mr. Aiken said representatives for various agencies concerned with water recommend that the KWO take the leadership for direction of an integrated planning effort spelling out the responsibility of the various agencies. Any planning documents would be submitted to the KWA. Mr. Aiken emphasized the main thrust of KDHE is prevention of pollution rather than solving problems after pollution occurs. They suggest delaying action on S.B. 272 until next session so the method by which the Legislature and the KWA will interact can be studied in relation to the state water plan being drafted by the KWO. They further suggest the policies be presented at a public hearing. In response to questions from Chairman Angell, Mr. Aiken said KDHE's basic philosophy is that groundwater protection should be part of the state water plan and the resolution approach has been used in that area. Mr. Aiken distributed a sheet on S.B. 273 (Attachment 5).

Chairman Angell asked Mr. Joe Harkins, Kansas Water Office, how he felt about using the term "the Office with the approval of the Authority" in S.B. 273 as was done in S.B. 61. Mr. Harkins replied he feels S.B. 273 should echo the existing legislation.

The meeting was adjourned at 8:57 a.m. by the Chairman.

The next meeting of the Committee will be at 7:30 a.m. on February 18, 1983.

Senate Energy + Natural Resources Feb. 17, 1983

Organization Liel Fronts
As League word votes
As Sierra Club Buth Wilker Ed Reinert KDHE Bill Bryson John A. Henderson KWO Vames Arken EDME Lurry Punning KWA Robert Binder KeNA James Hower KOHE Thomas Stiles KWO Barbara Joabel KUHTE OR Duffy RW A Staff Del Miller Cor KS. Carperation Comm Rosemany O Leany DI WAYNE ZIMMERMAN THE ELECTRIC CO'S ASSOC, OPKS, Senate Morna Daniels Olya Schoof KCC State Conservation Commission Leband E. Rolp Ks. Stop, Bd. of Ag-DWR Equus Beds GMP Thomas C. Bell Cyula F. Kovach KDHE. Keny Wedel Ks. Natural Resource Conneil Div. of Budget Duris NAGEL KDHE Jim Aiken KWA. LARRY PANNING Water authority Martha Mangelsday KG8E Josepy Corned KFB John Blythe Koy D. Shenkel KCPL

REMARKS OF ROBERT BINDER MEMBER OF THE KANSAS WATER AUTHORITY TO THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I am ROBERT BINDER, A HAYS, KANSAS, FARMER AND MEMBER OF THE

KANSAS WATER AUTHORITY REPRESENTING THE KANSAS ASSOCIATION OF

CONSERVATION DISTRICTS.

I SERVED AS CHAIRMAN OF THE AUTHORITY'S COMMITTEE CHARGED WITH

DEVELOPING A STATEWIDE PICTURE OF THE TOTAL WATER SUPPLY SITUATION

AND AS CHAIRMAN OF THE COMMITTEE CHARGED WITH DEVELOPING RECOMMENDATIONS

TO HELP GET US MOVING TOWARD DESIGNATING AND ACHIEVING MINIMUM

DESIRABLE STREAMFLOW RECOMMENDATIONS.

THE AUTHORITY BELIEVES THAT SENATE BILL 273 WOULD GO A LONG WAY TOWARD IMPLEMENTATION OF MINIMUM DESIRABLE STREAMFLOWS THAT HAVE BEEN STALLED SINCE THE GOVERNOR'S TASK FORCE ADDRESSED THE ISSUE IN 1978 AND THE LEGISLATURE ADDRESSED THE ISSUE IN 1980.

ASIDE FROM THE LACK OF PROGRESS IN THIS AREA, THE AUTHORITY WAS

PARTICULARLY CONCERNED THAT UNLESS STEPS ARE TAKEN RATHER RAPIDLY

TO BEGIN TO DEDICATE SOME REMAINING STREAM FLOWS TO THE PRESERVATION

OF A MINIMUM FLOW, WE ARE GOING TO SEE THE OPTION OF ACHIEVING

MINIMUM FLOWS FORECLOSED BY CONTINUED APPROPRIATION.

WE BELIEVE SENATE BILL 273 WOULD REMOVE A STUMBLING BLOCK. UNDER CURRENT LAW -- THE STATE WATER PLAN AT KSA 82A-928(9) SETS AS ONE OF THE STATE GOALS THE IDENTIFICATION OF MINIMUM DESIRABLE FLOWS TO BE MAINTAINED IN STREAMS. Then, THE STATE'S APPROPRIATION ACT AT 82A-703A REQUIRES THAT THE LEGISLATURE ENACT SECTIONS OR AMENDMENTS TO THE STATE WATER PLAN TO IDENTIFY A MINIMUM DESIRABLE STREAMFLOW BY WATERCOURSE BEFORE THE CHIEF ENGINEER WITHHOLDS FROM APPROPRIATION WATER TO MEET THAT STREAMFLOW.

PART OF THE PROBLEM SEEMS TO BE THAT THE WAY THE AGENCIES HAVE PRO-CEEDED -- YOU IDENTIFY A MINIMUM DESIRABLE STREAMFLOW BY CUBIC FEET PER SECOND OF FLOW WHICH IS DIFFERENT FOR EACH OF THE NUMEROUS DIFFERENT SEGMENTS OF A SINGLE STREAM AND FOR DIFFERENT SEGMENTS OF ITS TRIBUTARIES.

IT WOULD APPEAR, AND THE AGENCIES HAD BEEN OPERATING UNDER THE CONCLUSION, THAT EVERY C.F.S. HAD TO BE IDENTIFIED FOR EACH SEGMENT IN THE STATE WATER PLAN WHICH IS NOW STATUTE.

WE NEED SOME MEANS OF IDENTIFYING FLOWS BESIDES BY STATUTE. WE NEED SOME FRAMEWORK FOR MESHING THE MINIMUM FLOW REQUESTS OF HEALTH AND ENVIRONMENT AND FISH AND GAME.

THE AUTHORITY PROPOSES THAT THE LEGISLATURE DIRECT THE KANSAS WATER

OFFICE TO PROCEED WITH MESHING KDHE AND FISH AND GAME FLOW REQUIREMENTS

INTO A PROPOSED MINIMUM DESIRABLE FLOW. UNDER CURRENT LAW -- THE

ACTUAL SETTING OR IDENTIFICATION OF MINIMUM FLOWS WOULD BE RECOMMENDED

AS AN AMENDMENT TO THE STATE WATER PLAN WHICH THE AUTHORITY MUST NOW APPROVE.

INSTEAD OF ACTUALLY SETTING ALL THESE CUBIC FEET PER SECOND PER SEGMENT OF STREAM BY AMENDMENT TO THE WATER PLAN, WE PROPOSE THE AUTHORITY APPROVE THEM BASED ON INFORMATION RECOMMENDED BY THE WATER OFFICE. SENATE BILL 273 SHOULD EXPEDITE THE CHIEF ENGINEER'S ABILITY TO WITHHOLD WATER FOR STREAMFLOWS.

MITH THIS AMENDMENT, WE SHOULD BE ABLE TO MAKE SOME PROGRESS
RATHER RAPIDLY. THE CHIEF ENGINEER'S WORK IN THIS AREA, AT THE
REQUEST OF THE AUTHORITY, SHOWED THAT PROGRESS CAN BE MADE IF WE
GET TO WORK AT IT.

BUT JUST IDENTIFYING MINIMUM DESIRABLE FLOWS ISN'T ENOUGH. THIS

IDENTIFICATION PROCESS HAD LARGELY CONSUMED THE AGENCIES' COMMITTEE.

BUT THE AUTHORITY WAS ALSO CONCERNED WITH HOW WE ACTUALLY ACHIEVE

MINIMUM DESIRABLE FLOWS ONCE WE'VE IDENTIFIED WHAT THEY SHOULD BE.

INDICATIONS ARE, AS A RESULT OF NEARLY COMPLETED WORK ON THE MARAIS DES CYGNES AND THE MEOSHO RIVERS, THAT THERE WILL NOT BE ENOUGH UNAPPROPRIATED WATER REMAINING DURING SOME MONTHS OF THE YEARS TO MEET TARGETED FLOWS. IN FACT, IN SOME YEARS IT APPEARS THERE WOULD NOT BE ENOUGH WATER FLOWING IN THESE STREAMS TO COVER EXISTING RIGHTS IF ALL WATER RIGHTS HOLDERS TOOK THEIR MAXIMUM ALLOCATION.

musical)

THEREFORE, THE AUTHORITY HAS OUTLINED ON PAGE 46 OF ITS REPORT TO THE LEGISLATURE PROPOSED POLICY FOR PROCEEDING TO ACTUALLY ACHIEVE MINIMUM FLOWS. IT ANTICIPATES THAT THE AUTHORITY WILL CONTINUE TO CHECK WITH THE INTERAGENCY COMMITTEE TO BE ASSURED THAT PROGRESS CONTINUES IN GETTING FLOWS IDENTIFIED. WHERE WE CANNOT RELEASE WATER FROM RESERVOIRS TO MAKE UP SHORTFALLS DURING DRY MONTHS, WE WOULD HOPE THAT THE DIVISION AND THE GROUNDWATER MANAGEMENT DISTRICTS CAN DEVISE MANAGEMENT PLANS IN THEIR AREAS OF RESPONSIBILITY THAT WILL ASSIST IN TRYING TO HOLD ON TO SOME FLOWS.

WHERE THERE ARE RESERVOIRS -- WE WOULD ANTICIPATE THAT THE WATER OFFICE,
THROUGH POOL LEVEL MANAGEMENT PLANS DEVELOPED WITH THE CORPS OF
ENGINEERS AND THE BUREAU OF RECLAMATION WOULD DEVELOP FLOOD FLOWS
AND OTHER RELEASE SCHEDULE AGREEMENTS TO COVER DRY MONTH SHORTFALLS.

IN ADDITION TO FAVORABLE ACTION ON SENATE BILL 273 -- THE AUTHORITY WOULD REQUEST SOME INDICATION OR ENDORSEMENT FROM THIS COMMITTEE OR THIS LEGISLATURE, BY RESOLUTION OR SOME OTHER DIRECTIVE, THAT THE AUTHORITY'S PROPOSED POLICY AND WORK IS ACCEPTABLE TO YOU AND THAT WE SHOULD PROCEED.

I DO BELIEVE WITH PASSAGE OF SENATE BILL 273 AND YOUR ENDORSEMENT -WE CAN BEGIN WORKING TO ACTUALLY IMPLEMENT MINIMUM FLOWS ON THE
MARAIS DES CYGNES AND NEOSHO THIS YEAR AND REPORT SOME SUBSTANTIAL
PROGRESS ON OTHER STREAMS BY NEXT SESSION. THIS ASSISTANCE NOW
WILL GIVE US A CHANCE TO BEGIN WORK SO ANY FURTHER BUGS IN THIS

BINDER-5

PROCEDURE CAN BE DISCOVERED AND BROUGHT TO YOUR ATTENTION FOR FURTHER ACTION NEXT YEAR.

THANK YOU MR. CHAIRMAN. I WOULD ANSWER ANY QUESTIONS YOU MAY HAVE.

REMARKS OF LARRY PANNING MEMBER OF THE KANSAS WATER AUTHORITY TO THE SENATE COMMITTEE ON ENERGY AND MATURAL RESOURCES

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I AM LARRY PANNING, AN ELLINWOOD, KANSAS, IRRIGATOR. I WAS RECENTLY REAPPOINTED TO A SECOND TERM ON THE KANSAS WATER AUTHORITY AS A REPRESENTATIVE OF THE CENTRAL KANSAS GROUNDWATER MANAGEMENT DISTRICTS -- THE EQUUS BEDS AND THE BIG BEND DISTRICTS.

THE REPORT THE KANSAS WATER AUTHORITY SUBMITTED TO THIS COMMITTEE ON JANUARY 18 PROVIDES BACKGROUND AND DETAIL ON THE GROUNDWATER QUALITY MANAGEMENT PROPOSALS YOU ARE CONSIDERING. I WOULD LIKE TO HIGHLIGHT SOME OF THE REASONING BEHIND THE PROPOSALS THE AUTHORITY HAS ENDORSED.

The authority's review of the Kansas Department of Health and Environment's Groundwater Quality Management plan was a direct result of a request from Gov. John Carlin. In a letter to the Authority chairman, the Governor asked that the Authority consult all of the state water-related agencies and develop recommendations for the 1983 legislature that all agencies could support. The governor carboned his letter to the Kansas Mater Office Director, the chief engineer and the secretary of health and environment. The authority, in addition, sought comments from the chairman of the Kansas Corporation commission, the management of the groundwater management districts and

THE DIRECTORS OF THE KANSAS GEOLOGICAL SURVEY AND THE KANSAS FISH AND GAME COMMISSION. KDHE ASSISTED BY HOLDING A MEETING OF ALL THE AGENCIES TO DISCUSS THE PROPOSALS THAT DID NOT RECEIVE ACTION IN THE 1982 LEGISLATURE. Subsequently the proposals were discussed at MEETINGS OF THE AUTHORITY AND THE EXECUTIVE COMMITTEE OF THE AUTHORITY GAVE SPECIAL CONSIDERATION TO DEVELOPING CONSENSUS RECOMMENDATIONS. AS THE RECOMMENDATIONS WERE FINALIZED, THE AGENCIES WERE CONTACTED AND RECONTACTED.

MR. CHAIRMAN, I GIVE YOU THIS BACKGROUND BECAUSE I BELIEVE IT IS IMPORTANT THAT YOU ARE ADVISED OF THE EFFORT THAT WAS MADE TO DEVELOP PROPOSALS THAT WOULD ENABLE THIS STATE TO MOVE FORWARD TO RESPOND TO GROUNDWATER QUALITY PROBLEMS AND THAT WOULD BE SATISFACTORY TO THE NUMBER OF AGENCIES THAT HAVE SOME RESPONSIBILITY AND SOME EXISTING INTERESTS IN GROUNDWATER QUALITY PROTECTION.

In Kansas, Mater quantity questions have traditionally been vested in the division of water resources and the groundwater management districts. The department of health and environment has traditionally had a strong role and developed expertise in water quality matters. But in approaching the questions of a workable groundwater quality management plan, the authority members were concerned that water quantity and water quality issues are becoming more intimately related. The authority is concerned that our agencies make every effort to consider quantity and quality issues whether they are responsible for water planning or quality or appropriations of quantities of water.

HE BELIEVE IT IS IMPORTANT THAT EVERY STATE AGENCY WORK TOWARD A COMPROMISE PROPOSAL ON THIS ISSUE SO THAT EFFORTS TO RESPOND TO GROUNDWATER QUALITY PROBLEMS ARE NOT STALLED BY JURISDICTIONAL DISPUTES. IT IS IMPORTANT BECAUSE THE STATE OF KANSAS HAS ONE OF THE HIGHEST PERCENTAGES OF A POPULATION DEPENDENT ON GROUNDWATER SUPPLY OF ANY STATE IN THE NATION. THE ABILITY TO PROPERLY PROTECT WATER QUALITY IS ALSO VITALLY IMPORTANT TO IRRIGATED AGRICULTURE PRODUCERS.

REGARDING THE SPECIFIC LEGISLATIVE RECOMMENDATIONS:

SENATE BILL 272, GROUNDWATER QUALITY MANAGEMENT PLANNING: INITIALLY, KDHE PROPOSED THE DEVELOPMENT OF A STATE ENVIRONMENTAL PLAN ADDRESSING GROUNDWATER QUALITY PROTECTION AND MANAGEMENT SEPARATE FROM THE STATE WATER PLAN. KDHE WOULD HAVE DEVELOPED THE PLAN AND TRANSMITTED IT DIRECTLY TO THE GOVERNOR AND THE LEGISLATURE. THE MEMBERS OF THE AUTHORITY, INCLUDING THE EX-OFFICIO STATE AGENCY REPRESENTATIVES, RECOGNIZE THAT KOHE DOES HAVE THE EXPERTISE IN WATER QUALITY MATTERS. BUT THE AUTHORITY AND THE STATE WATER AGENCIES, INCLUDING KDHE, DID AGREE THAT IT WOULD BEST SERVE THE INTERESTS OF THIS STATE TO HAVE ONE COMPREHENSIVE STATE WATER PLAN INSTEAD OF SEPARATE PLANS DEALING WITH WATER QUANTITY AND WATER QUALITY. THEREFORE, THE RECOMMENDATION, SUPPORTED BY ALL THE AGENCIES AND THE AUTHORITY IS THAT KDHE DEVELOP WATER QUALITY ELEMENTS OF ANY STATE WATER PLAN AND THAT THEY ARE THEN MERGED THROUGH THE STATE'S MAIN WATER PLANNING AGENCY -- THE WATER OFFICE -- INTO A STATE WATER PLAN WHICH MUST BE APPROVED BY THE AUTHORITY AND THEN SUBMITTED TO THE LEGISLATURE. IN OUR REPORT TO THE LEGISLATURE, WE OUTLINED REVISIONS IN THE EXISTING STATE WATER

PLAN THAT COULD SPECIFICALLY REFERENCE GROUNDWATER QUALITY MANAGEMENT AND PROTECTION. ADOPTION OF THESE AMENDMENTS THIS YEAR WOULD PROVIDE SOME ADDITIONAL DIRECTION IN DEVELOPING THE STATE'S MASTER PLAN AND THESE ELEMENTS COULD THEN STILL BE REVISED AND AMPLIFIED OVER THE COURSE OF TIME AS THE MASTER PLAN IS DEVELOPED.

OUR SECOND LEGISLATIVE RECOMMENDATION, SENATE BILL 269, PROPOSES ADOPTION OF STATUTORY LANGUAGE THAT WOULD REQUIRE ALL GOVERNMENTAL AGENCIES TO ADVISE KDHE THAT A BASIC DATA OR RESEARCH WELL HAS BEEN DRILLED AND TO ADVISE KDHE AFTER IT HAS BEEN ABANDONED THAT THE WELL WAS ABANDONED IN COMPLIANCE WITH RULES AND REGULATIONS SPECIFYING PROCEDURES FOR ABANDONING WELLS. KDHE'S CONCERN IS SIMPLY THAT THEY ARE MADE AWARE OF ALL DRILLING AND ABANDONMENT BECAUSE THEY DO HAVE AN INTEREST IN ALL DRILLING AND ABANDONMENT AND WHETHER IT CONFORMS TO BEST AVAILABLE TECHNOLOGY.

THE THIRD LEGISLATIVE RECOMMENDATION, SENATE BILL 271, WOULD RAISE
THE CEILING ON THE AMOUNT OF MONEY THAT COULD BE DEPOSITED IN THE
POLLUTANT DISCHARGE FUND FROM \$59,000 TO \$500,000, A FIGURE KDHE
BELIEVES WOULD BE MORE REALISTIC REGARDING ACTUAL COSTS THAT MAY
BE ADVANCED OR INCURRED IN CLEANING UP A MAJOR INCIDENT OF CONTAMINATION.
THERE IS NO SPECIFIC RECOMMENDATION ON THE ACTUAL DEGREE TO WHICH
THIS FUND IS FUNDED, BUT THE AUTHORITY DOES BELIEVE IT IS REASONABLE
TO HAVE THE ABILITY TO EXPEND THAT AMOUNT IF IT IS REQUIRED.

THE AUTHORITY FURTHER RECOMMENDS FAVORABLE ACTION ON AN AMENDMENT TO KSA 65-179D WHICH WOULD ENABLE THE DEPARTMENT OF HEALTH AND ENVIRON-

MENT TO ASSESS CIVIL PENALTIES FOR LIABILITY FOR DAMAGES TO ANY PERSON WHO CAUSES POLLUTION AND WHO IS NOT SUBJECT TO SUCH CIVIL PENALTIES UNDER THE AUTHORITY OF ANOTHER AGENCY. SENATE BILL 268 IS DESIGNED TO CATCH ANY PERSON WHO HAS BEEN FOUND TO POLLUTE WATER WHO MIGHT OTHERWISE SLIP THROUGH THE ABILITY OF ANOTHER AGENCY TO ASSESS CIVIL PENALTIES. THERE WAS A CASE OF AN AERIAL SPRAYER WHO DID CAUSE SOME WATER POLLUTION WHO COULD NOT BE FINED FOR CLEANUP BECAUSE HE WAS ONLY SUBJECT, UNDER RULES AND REGULATIONS OF ANOTHER AGENCY, TO THE PENALTY OF LICENSE REVOCATION.

MR. CHAIRMAN, THE AUTHORITY'S RECOMMENDATION DID NOT ANTICIPATE MAKING ANYONE VULNERABLE TO THE ASSESSMENT OF CIVIL PENALTIES BY MORE THAN ONE AGENCY. The AUTHORITY'S LANGUAGE DID PROPOSE ADDITIONAL WORDING THAT MADE IT CLEAR THAT ANY PERSON WHO VIOLATES ANY PROVISION OF ANY OTHER LAW WHICH PERTAINS TO DETERIORATION OF WATER QUALITY -- "WHO IS NOT SUBJECT TO CIVIL PENALTIES PRESCRIBED UNDER THE AUTHORITY OF ANY OTHER STATE AGENCY" -- SHALL INCUR A MAXIMUM CIVIL PENALTY OF \$10,000 PER DAY FOR EACH VIOLATION. WE WOULD OF COURSE YIELD TO THE RECOMMENDATIONS OF THE REVISOR AND THE COMMITTEE AS TO WHETHER THAT LANGUAGE SHOULD BE REINSTATED IN SENATE BILL 268.

Finally, the authority recommends favorable action on senate bill 270 -- AMENDMENTS TO KSA 82a-1036 REGARDING INITIATION OF PROCEEDINGS TO DETERMINE WHETHER TO DESIGNATE AN INTENSIVE GROUNDWATER USE CONTROL AREA. Under current law, the chief engineer can designate an intensive use control area whenever he believes there is unreasonable deterioration of water quality. KDHE originally proposed that it be given

SOME AUTHORITY TO DESIGNATE SPECIAL GROUNDWATER QUALITY MANAGEMENT AREAS AND TO IMPOSE KDHE WATER QUALITY PROTECTION CONDITIONS ON APPROPRIATIONS PERMITS. BOTH THE DIVISION OF WATER RESOURCES AND THE GROUNDWATER MANAGEMENT DISTRICTS OBJECTED TO ELEMENTS OF THE PROPOSAL THAT WOULD GIVE YET ANOTHER STATE AGENCY REGULATORY RESPONSIBILITY AND SOME ABILITY TO USURP EXISTING REGULATORY RESPONSI-BILITY. THE AUTHORITY'S RECOMMENDATION IN SENATE BILL 270 CLARIFIES THAT KDHE HAS SOME RESPONSIBILITY TO NOTIFY THE EXISTING REGULATORY AGENCIES AND ALERT THEM TO POTENTIAL WATER QUALITY PROBLEMS. THE AMENDMENTS REQUIRE THE CHIEF ENGINEER TO MAKE A REPORT OF HIS FINDINGS SO THAT A RECORD IS CLEAR REGARDING THE NEED FOR AN INTENSIVE USE CONTROL AREA. BUT THE AUTHORITY FOUND NO COMPELLING REASON TO GO FURTHER AND SUPPORT ANY PROPOSAL THAT WOULD GIVE A SECOND AGENCY AUTHORITY TO DECLARE INTENSIVE USE CONTROL AREAS OR GIVE A SECOND AGENCY AUTHORITY TO ATTACH CONDITIONS TO APPROPRIATIONS PERMITS.

Mr. Chairman, that concludes my remarks. I would answer any questions you might have.

AN OVERVIEW OF THE PLAN FOR PROTECTION OF KANSAS GROUNDWATER RESOURCES FROM POLLUTION

James Aiken Kansas Department of Health and Environment

The State Water Quality Management Studies were developed under Section 208 of the Federal Clean Water Act and are commonly referred to as the 208 studies. The plan was submitted to the 1979 Session of the Kansas Legislature. After extensive committee deliberation, the Water Quality Management Plan was adopted. Later that year, both Governor Carlin and the EPA Regional Administrator put their approval on the plan. The Kansas Legislature in adopting the plan, directed KDHE to continue its work on development of a statewide groundwater quality management plan and report to the Legislature.

The plan reflects environmental issues and concerns identified by citizens and officials during an extensive public involvement process during the spring and early summer months of 1981. An initial draft was reviewed with many of the same groups in the fall. The plan reflects the consensus of comments from these informal review meetings.

Groundwater contamination is not visible to the naked eye. There is no simple way to determine the extent of groundwater contamination. Wells in an affected area may be a useful indicator, but in most cases there are too few wells to permit detection and delineation of the extent of pollution. Once detected, finding the source of groundwater contamination, which is not always as readily apparent as it is for spills into surface waters, is a major problem. contaminants undergo changes in the subsurface environment that make them hard Correcting groundwater contamination is time-consuming, expento identify. sive, and, in many cases, even virtually impossible. All in all, prevention of groundwater pollution is far more cost-effective than after-the-fact abatement The only satisfactory long-range control strategy for the protection of the quality of the state's groundwater resources is pollution prevention through sound management control programs. As a consequence, the plan for groundwater quality is a management plan with emphasis on controls and coordination between the nine state and five individual local agencies with direct or secondary management responsibilities in the prevention of pollution to groundwater reserves or protection of the quality of groundwaters. To accomplish desired management, the state must carry the responsibility. In this effort, local governments must be supportive of state efforts, and the federal government should monitor state efforts and provide technical assistance.

Potential Sources of Pollution

Out of sight, groundwater has often been out of mind. Groundwater generally moves very slowly, on the scale of only tens to hundreds of feet per year. This can mean very little dilution takes place once a contaminant reaches the groundwater, and once contaminated, groundwater is difficult, if not impossible, to clean up. There can be a variety of potential groundwater sources so as a consequence the plan stresses regulation of major potential sources.

Table 1 illustrates the relative magnitude of potential pollution by the volume of pollutants generated in one year. The tonnage of salt brought to the surface along with 58 million barrels of oil annually exceeds 10.2 million metric tons per year (11.2 million tons). This exceeds of all other sources combined. Natural mineral intrusion amounts to 3.6 million metric tons per year (4 million tons). Kansas produces commercially 1.4 million metric tons of salt annually (1.5 million tons); most of which is evaporated salt from solution mining methods. Sanitary landfills across the state annually bury over 1.9 million metric tons (2 million tons) of refuse from society. Kansas farmers put 1.5 million metric tons (1.6 million tons) of fertilizer on the land. To the credit of Kansas citizens, industries, and local government, the vast majority of the pollutants are controlled and disposed of in a safe manner to protect the environment. In part this is the direct result of regulation dating back to the 1930's.

Table 1

Volume of Potential Pollutants Generated or Result of Man's Activities

Potential Source	Million of Metric tons Per Year	Type of <u>Pollutant</u>
Petroleum Field Operations	10.2 (11.2 Million Tons)	Salt
Mineral Intrusion	3.6 (4.0 Million Tons)	Salt
Solid Waste	1.9 (2.1 Million Tons)	Refuse
Salt Solution Mining	1.4 (1.5 Million Tons)	Salt
Fertilizer (applied)	1.5 (1.6 Million Tons)	Minerals
Mine Drainage	0.3 (0.3 Million Tons)	Minerals
Hazardous Waste Generated	0.1 (0.1 Million Tons)	Solids and liquids
Wastewater Treatment Sludges	0.05 (0.6 Million Tons)	Sludge

An Overview of the Management Structure

Kansas has five state agencies and one type of local unit of government (five groundwater management districts) with a major responsibility in groundwater management plus six others with important but lesser roles (Table 2). The term "management" is construed broadly to include four major kinds of activities: (1) planning, (2) data collection and research, (3) regulation, and (4) emergency response to significant pollution problems. Recognizing that these functions overlap and that "policy" and "coordination" exist in all four areas, this still provides a reasonable framework within which to describe and understand the groundwater quality management activities. Although Kansas Department of Health and Environment (KDHE), Kansas Water Authority and Office (KWA), and Groundwater Management Districts (GWDs) have been categorized as major "planners", this might be somewhat arbitrary because any agency that engages in data collection, research, regulation or emergency response has to plan in some way for those activities. Planning, in this case, has been limited to some specific responsibility for developing groundwater protection and management Groundwater quality data collection, analysis and interpretive studies are made by KDHE, Kansas Geological Survey (KGS) and GMDs. Research is conducted by KGS and the state universities.

Table 2 An overview of groundwater quality management activities by federal, state and local government

		Type of	Groundwater Qual	ity Management <i>H</i>	Activity
			Basic Data and		Emergency
Name of Agency		Planning	Research	Regulation	Response
Federal Government	CD A	Р	D	D	P
Environmental Protection Agency	EPA	Р	r n	f 	-
Geological Survey	USGS	-	r		
State Government					
Health and Environment	KDHE	P	Р	Р	P
Corporation Commission	KCC	<u>-</u>	<u>-</u>	Р	
Water Authority and Office	KWA	р	S	-	-
	SBA		ζ	Р	-
Board of Agriculture	KGS	_	D	• •	
Geological Survey		_	· -	_	ς
Adjutant General	AG	-	c	_	-
Universities	U	_	3	D	_
Mined-Land Conservation &	ML	S	-	r	
Reclamation Board				•	
Human Resources	HR	-	-	S	
Lacal Cavanament					
Local Government	Ci	c	-	ς	-
Cities		S		Ç	-
Counties	Co	5	-	p 、	
Groundwater Management	GMD	Р	S	Γ `	_
Districts					

P - primary responsibility
S - indirect or secondary responsibility
- No responsibility

The two principal regulatory agencies in the groundwater quality management are Kansas Corporation Commission (KCC) and KDHE. Division of Water Resources, State Board of Agriculture (SBA), the agency which administers the state's water rights program, cannot be omitted since its decisions can and do impact groundwater quality management. Policy decisions and recommendations by GMDs to SBA likewise affect groundwater quality management. Both GMDs and SBA have authority to initiate controls on groundwater withdrawals where groundwater quality is deteriorating.

Finally, emergency response denotes a management activity to respond to pollution problems when identified and, to the extent possible, correct, contain, eliminate, or control the pollutant source. KDHE has been active in this area for many years working with the oil and gas industry, communities and citizens. The Office of Emergency Preparedness, Adjutant General, is responsible for overall coordination of disasters, but has minimal or no technical capability to respond to groundwater pollution problems.

The principal federal agency involved in environmental management is the U.S. Environmental Protection Agency (EPA). EPA has certain federal government responsibilities which, when considered broadly, can extend to all areas of groundwater quality management activities. It should be noted EPA administers the principal federal environmental program in the nation and its mission has a profound impact on many state programs. The United States Geological Survey (USGS) is the federal government's agency responsible for data collection. USGS also undertakes special studies and research.

Cities and counties through exercise of zoning powers can significantly impact groundwater quality. However, local zoning decisions seldom are made with protection of groundwater quality in mind.

The state's commitment to development, management and conservation is apparent in the creation of numerous state agencies with different assigned goals and objectives to deal with different facets of water resources management. Yet, despite the significance of the state commitment to address and eventually resolve water resource problems, critical water supply and quality problems still are facing the state.

Since the plan stresses prevention, a discussion of the administration and enforcement of state laws seems appropriate. Kansas statutes and regulations reflect the difficult and complex nature of groundwater pollution control. In order to give some order to a description of existing control so that the reader may more readily comprehend the subject, the material is presented under the following headings:

- 1. Water quality problems that originate on the land surface or in the ground above the groundwater.
- 2. Water quality problems that originate in the groundwater or below it.

In Table 3, the agency administering the regulatory program for each potential source of pollution is identified. KDHE is the principal administrative agency regulating potential pollution sources above the groundwater. The regulation of wells penetrating the groundwater aquifers or deep rock formation is handled by three different agencies. Oil and gas regulation is administered by KCC,

Table 3 Identification of Agencies Administering Potential Source of Pollution Programs

		Federal Government		State	e Gove	rnmei	nt		Local	Gov	ernment
	ential Source Pollution	EPA	KDHE	KWA	KCC	SBA	ML	HR	Ci	Со	GMD
Gro	undwater Pollution that originat	es on the land	surfac	ce or	in th	e gro	ound	above	the gro	undwa	ater
a.	Brine and waste disposal materials	D	D	-	-	-	-	-	I	I	-
b.	Accidential spill of hazardous materials	D	D	-	-	-	-	-	-	-	-
c.	Solid and hazardous waste land fills	D	D	-	-	-	-	-	I ¹	I ¹	-
d.	Buried petroleum storage tanks	I	D	-	_	-	-		D	D	-
e.	Mineral mining, coal & metallic	Ī	I	-	-		D	D	I	Ι	-
Gro	undwater pollution that originat	es in the grou	ndwater	or ı	underl	ying	for	mation			
a.	Oil and gas wells	D	D	-	D	_	-		-	_	-
b.	Water wells	-	D		-	I		_		-	D
c.	Injection wells	D	D	-	D	-	-	-	-		-
d.	Disposal wells, industrial	D	D	-	-	-	-	-	-	-	-
e.	Disposal wells, oil field	D	D	-	D	-	-	-	-	-	-
f.	Abandoned wells and seismic holes	-	-	-	D	-	-	-	\ -	-	-
g.	Natural mineralization	-	D	D	-	_	-	-		-	_
h.	Groundwater mining	-	-	I	-	D	-	-	-	-	D
	D - Direct	L - Indirect,	solid w	vaste	sitin	g on	ly				

I - Indirect
- - None

water withdrawals by SBA, and all other wells by KDHE. The EPA Federal Underground Injection Control program under the Safe Drinking Water Act, designed to protect underground drinking water supplies, will have an impact on future administration of laws dealing with wells.

Another way to identify issues is to examine the overall authority under various statutes in protecting groundwater from potential sources of pollution. A simple check list of powers and duties was used. These include permitting, operation standards, monitoring, enforcement, and closure. As Table 4 indicates, KDHE is the principal agency responsible for the permitting through the closure of a facility above the groundwater, with the exception of mineral mining. Coal mines are regulated by the Mined Land Conservation and Reclamation Board. Kansas laws are silent on regulatory responsibility for shaft type mines except for mine safety and filing a plan. These are handled by the Department of Human Resources.

Early in plan formulation we opted not to recommend reorganization, but, to design a plan to strengthen the management through cooperation between the agencies involved in protecting our groundwater resources.

Kansas Groundwater Quality Management Plan

The <u>Kansas Groundwater Quality Management Plan</u> places emphasis on management activities to prevent pollution, to protect groundwater aquifers, and to coordinate administrative function of state and local units of government to insure that adequate quantities of good quality groundwaters will be available for future generations.

Current Status

During the 1982 Session of the Legislature, the Senate Energy and Natural Resources Committee spent considerable time and effort dealing with ways to control and regulate the oil and gas field pollution problems. Senate Bill 498 provides for joint jurisdiction of the State Corporation Commission and the Department of Health and Environment over oil and gas related pollution. The Commission and the Secretary are required to enter into a comprehensive interagency agreement providing for a management plan to integrate field operations for the regulation of pollution resulting from oil and gas activities. The bill prohibits any well drilling without a permit and sets the standards for approval of applications for such permits. The bill also establishes the responsibilities of the operators in charge of the physical operation of each well, requires that such persons be licensed and pay an annual fee, creates a ten-member advisory committee on the regulation of oil and gas activities, and provides for new administrative penalty violations in an amount not to exceed \$10,000. This element of the plan has been addressed and resolved.

The length of time involved in legislative deliberation precluded consideration of other elements of the plan. The report on the plan outlines the new or amendatory legislation (pages 47 through 54), including the "Environmental Groundwater Quality Management Plan" (pages 55 through 58).

Table 4 Identification of Statutory Authority

	cential Source of Pollution	Permitting	Operation Standards	Monitoring	Enforcement	Closure/ Abandonment
Gro	oundwater Pollution that originates on the	land surface o	r in the ground	above the grou	ndwater	
a.	Brine and waste disposal materials	S/KDHE	S,R/KDHE	S/KDHE	S/KDHE	R/KDHE
b.	Accidential spill of hazardous materials	-	-	S/KDHE	S/KDHE	~
c.	Solid waste landfills	S/KDHE,Co	S/KDHE,Co	S/KDHE	S/KDHE,Co	S/KDHE
d.	Hazardous waste disposal site	S/KDHE	S/KDHE	S/KDHE	S/KDHE	S/KDHE
e.	Buried petroleum storage tanks	S/KDHE	S,R/KDHE	S/KDHE	S/KDHE	R/KDHE
f.	Mineral mining, coal &	•				
	metallic	S/ML	S/ML	S/KDHE	S/ML	S/ML
Gro	oundwater pollution that originates in the	groundwater or	underlying for	mation		
a.	Oil and gas wells	S/KCC	S/KCC, S/KDHE	S/KDHE,S/KCC	S/KDHE, S/KCC	S/KCC
b.	Water wells	S/SBA	S/SBA	-	S/SBA	S/KDHE
c.	Injection wells	S/KCC	S/KCC, KDHE	S/KDHE	S/KCC, KDHE	S/KCC
d.	Disposal wells, industrial	S/KDHE	S/KDHE	S/KDHE	S/KDHE	R/KDHE
e.	Disposal wells, oil field	S/KCC, S/KDHE	S/KCC, KDHE	S/KDHE	S/KDHE	S/KCC
f.	Abandoned wells and seismic holes	S,R/KDHE	S/KCC	-	S/KCC	S,R/KCC
g.	Groundwater mining	S/SBA	-	-	S/SBA	-

Authority citation
S - Statute, generally covered
R - Regulation, generally covered
- Not required by statute or regulation

State Agencies Recommendation

On July 7, 1982, representatives of the Governor's office, Department of Administration, Board of Agriculture, Corporation Commission, Fish and Game Commission, Geological Survey, Health and Environment, Water Office, and Groundwater Management District Association met in Topeka to review the legislative package and plan and make recommendation to the Authority. The recommendations are based upon reaching consensus on the concept of the proposal and not necessarily the language. It should be noted there was not unanimity on all issues.

The last column of Attachment A notes the group's recommendation. In summary, the group agreed to the concept of (a) a notice being filed with the Kansas Department of Health and Environment after construction of basic data or research well (Item 2), (b) increasing the limit of pollutant discharge fund (Item 6), (c) covering any pollution to the environment, no matter what the source (Item 7), and (d) allowing KDHE to request proceeding to create an intensive groundwater use area when the quality of groundwater has been found to be deteriorating (Item 11). The group recommended special groundwater quality management areas be done by a memorandum of understanding between the affected agencies. Finally, consideration of requiring permits for artificial recharge projects be delayed two years pending research studies sponsored by the state and assessment of requirements under the federal underground injection control program.

The agencies recognize the need for development of a properly managed planning process in which one agency directs the process and other agencies participate in a predetermined format with an agreed to time schedule. The group recommends in the future that the KWO take the leadership for direction of an integrated planning effort which would spell out responsibility of agencies. Ultimately, any planning documents would be submitted to KWA for action and incorporation into the state water plan.

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LEGISLATIVE PACKAGE TO IMPLEMENT GROUNDWATER QUALITY MANAGEMENT PLAN

1/8/82 7/12/82 Revised

/12/8. No.	? Revise Page	Element	Number	Item	Implementation	State Agencies Recommendations
1.	47	Planning	1, 5	-KDHE to prepare, submit and revise plan	SEP-#2, 3, and 4	Incorporate in State Water Plan
2.	49	Basic data/ research	5	Verification that basic data and research wells were constructed and abandoned in accordance with state regulations.	New KSA 82a-1216	Concept acceptable
3.	50, 51	Regulation	3a,b,c,d	Revision to Chapter 55 pertaining to oil and gas	Amendatory Chapter 55, Articles 1, 9, & 10	Concept in SB 498
4.	51	Regulation	3e(1)	Injunctive action	Amend Chapter 55, Article 1, 9, 10	Concept in SB 498
5.	51	Regulation	3e(2)	Penalties for violations	Amendatory - Chapter 55, Article 1, 9, & 10	Concept in SB 498
6.	51	Regulation	3e(3)	Increase limit of pollutant discharge fund	Amend KSA 65-171W	Concept acceptable
7.	51	Regulation	3e(4)	To cover any pollution to the environment, no matter what the source	Amend Chapter 65, Article 1	Concept acceptable
8.	51	Regulation	4a	Special groundwater quality management areas	SEP #11	Recommended Memorandum of Understanding in lieu of legislation
9.	51	Regulation	4b,c	Coordination procedures in such areas	SEP #10, Amend KSA 82a-711	Recommended Memorandum of Understanding in lieu of legislation
10.	51	Regulation	4d,e	Water well construction and abandonment	Amend KSA 82a-711 a	Concept acceptable handle through MOU
11.	52	Regulation	4f	Intensive groundwater use areas	Amend KSA 82a-1036	Concept acceptable
12	52	Regulation	5a	Regulations on industrial disposal wells		KDNE to adopt regulations
13.	52	Regulation	5b	Artificial recharge projects	New KSA 82a-1217 Amend KSA 82a-707	New legislation be delayed two years
14.	52	Regulation	5g	Revise regulation on conductor or tubing for salt solution mining well		KDIIE revise regulations

Notations SWP State Water Plan
SB Senate Bill
MOU Memorandum of Understanding
KWO Kansas Water Office
KDHE Health and Environment

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

James F. Aiken
Director, Division of Environment
February 17, 1983

SENATE BILLS 268, 269, 270, 271, and 272

The Division of Environment has statutory authority for control of most environmental contaminants and conditions relating to human health and welfare, aquatic flora and fauna, plant and animal life, and the soil. The division has grown steadily throughout the years with additional legislative changes to the point that balanced, yet interrelated, comprehensive environmental control programs have been achieved. The environmental goals within specific statutory responsibilities are to maintain a healthful environment free from disease-causing agents; reduce and prevent irritants affecting the enjoyment of life and property; preserve our natural resources; and develop environmental control programs which are responsive to the needs of Kansas in a cost-effective manner. The cornerstone to groundwater protection is the successful implementation of the Kansas Groundwater Quality Management Plan.

The <u>Kansas Groundwater Quality Management Plan</u> was prepared to manage activities to prevent pollution, to protect groundwater aquifers, and to coordinate administrative activities of government to insure adequate quantities of good quality waters will be available for future generations. The plan was outlined before the committee last year. During the session, the committee spent considerable time and effort dealing with ways to control and regulate the oil and gas field pollution problems. This element of the plan is in place. As a consequence, other important elements of the plan were deferred until this year.

On July 7, 1982, representatives of the Governor's office, Department of Administration, Board of Agriculture, Corporation Commission, Fish and Game Commission, Geological Survey, Health and Environment, Water Office, and Groundwater Management District Association met in Topeka to review the legislative package and plan and make recommendation to the Kansas Water Authority. The recommendations are based upon reaching consensus on the concept of the proposal and not necessarily the language. It should be noted there was not unanimity on all issues.

The group agreed to the concept of (a) notice being filed with the Kansas Department of Health and Environment after construction of basic data or research well, (b) increase limit of pollutant discharge fund, (c) to cover any pollution to the environment, no matter what the source, and (d) allow KDHE to request proceeding to create an intensive groundwater use area when the quality of groundwater has been found to be deteriorating. The group recommended special groundwater quality management areas be accomplished by a memorandum of understanding between the affected agencies. Finally, consideration of requiring permits for artificial recharge projects be delayed two years pending research studies sponsored by the state and assessment of requirements under the federal underground injection control program.

The Kansas Water Authority recommendations reflect the recommendations of the state agencies. As a consequence, the Kansas Department of Health and Environment supports Senate Bills 268, 269, 270, and 271. The committee may wish to delay action on Senate Bill 272 until next session. The Kansas Water Office will do a major review and revision to the state water plan this coming year. The policy plan to be prepared will include quantity and quality of both ground and surface water. State policies proposed in Senate Bill 272 should be considered in a total policy plan. We also suggest the policies be presented at a public hearing as required in K.S.A. 82a-905.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

James F. Aiken
Director, Division of Environment
February 17, 1983

SENATE BILL 273

The 1980 Session of the Kansas Legislature enacted K.S.A. 82a-703(a) which provides, "Whenever the legislature enacts any section or amendment of the state water plan which identifies a minimum desirable streamflow for any water course in this state, the chief engineer shall withhold from appropriations that amount of water deemed necessary....." Also, K.S.A. 82a-706(b) states "It shall be unlawful for any person to...take water that has been released from storage pursuant to an agreement between the state and the federal government."

The old Kansas Water Resources Board created a minimum streamflow advisory committee to prepare a report for its consideration. Representatives from the Kansas Water Resources Board, Kansas Fish and Game Commission, Kansas Park and Resource Authority, Kansas Department of Health and Environment, and the Division of Water Resources spent better than a year undertaking technical studies to identify minimum streamflows.

The Division of Environment staff has expended over a manyear effort in quantifying minimum streamflows. Adoption by the Legislature is important to maintenance of stream water quality.

Low-flow augmentation is the supplementation of dry weather flows in streams for the primary purpose of enhancing, improving, and maintaining water quality. One method for providing this additional flow is by the release of water from reservoirs, or another method is setting aside from appropriation a portion of the stream's natural flow. All water uses have a minimum quality requirement below which water has little or no value. Most waters have the potential for more than one use, although competing use may inhibit such multiple use concept. Over the years Kansas industries and municipalities have achieved a high level of waste treatment through construction of facilities and good maintenance and operation. Early studies made by the Kansas Water Resources Board and the then Board of Health identified minimum stream requirements in the original planning unit reports. Most of these were done in the late fifties and early sixties.

At the Kansas Water Authority meeting on March 30, 1982, the Division of Environment recommended that before minimum streamflows can be established, the Kansas Water Authority needs to develop state policy for the concept to be effective. The issues involved are --

- a. the right of the state to acquire a water reservation right to water quality storage to be held in public trust,
- b. the right of the state to operate reservoirs as a system rather than individual reservoirs for both water quality and water supply,
- c. defining the amount of water subject to appropriations, and
- defining the procedure for assessing transmission losses during drought periods.