

MINUTES OF THE SENATE COMMITTEE ON FEDERAL AND STATE AFFAIRS.

The meeting was called to order by Senator Lana Oleen on adjournment on February 14, 1996 Room 254-E of the Capitol.

Members present were: Senator Oleen, Chair
Senator Tillotson, Vice Chair
Senator Jones, Ranking Minority Member
Senator Gooch
Senator Hensley
Senator Jordan
Senator Papay
Senator Praeger
Senator Ramirez
Senator Vidricksen
Senator Walker

Committee staff present: Mary Galligan, Legislative Research
Mary Torrence, Revisor of Statutes
Nancy Wolff, Committee Secretary

Conferees appearing before the committee:
Darrell Montei, Department of Wildlife and Parks
Bob Russell, a private landowner in Douglas County
Ben Lerner, a student at Topeka High School
Charles Clark, Holliday Sand and Gravel
Woody Moses, Kansas Aggregate Producers Association
Dr. Jerry Richardson, a professor of civil engineering at UMKC
Mike Caldwell, representing the Friends of the Kaw

Others attending meeting: See attached list

Hearings were scheduled on **SB617** which would place a moratorium on sand dredging along portions of the Kansas river.

Senator Sandy Praeger presented testimony in support of the bill (Attachment 1). Darrell Montei Department of Wildlife and Parks offered testimony on **SB617** (Attachment 2) as did Bob Russell, a private landowner in Douglas County (Attachment 3) and Ben Lerner, a student at Topeka High School and a member of the Sojourners Club (Attachment 4) who were also proponents.

Opponents appearing on **SB617** were Charles Clark representing Holliday Sand and Gravel (Attachment 5), Woody Moses, Kansas Aggregate Producers Association (Attachment 6).

Dr. Jerry Richardson, (Attachment 7), a professor of civil engineering at UMKC and an opponent to the bill stated that the plan currently in place for conservation of resources on the river was developed by the engineering firm of Burns and McDonald. Dr. Richardson was employed by that firm when the study was conducted. The current plan was designed to alleviate the degradation of sand below Bowersock Dam and alleviate the aggregation of sand above the dam.

Senator Ramirez asked if there were any alternative sources of sand and Mike Caldwell, representing the Friends of the Kaw, (Attachment 8) who stated that a study done in October of 1995 at the Well Library of the Kansas Geological Survey Office in Lawrence stated that there were 22+ feet average thickness of sand along the Jefferson and Douglas County Kaw River Basin which would be an indefinite supply for the construction needs of Kansas.

Additional testimony presented to the committee in support of **SB617** was: Dr. Cynthia Annette, Professor of Biological Sciences for the University of Kansas and a fisheries expert (Attachment 9); Dr. Ed Martinkio, a KU professor and director of the Kansas Biological Survey (Attachment 10); Tom Hittle (Attachment 11), Flint Hills Audubon Society; Mark Maher, a resident of Jefferson County (Attachment 12); Steve Montgomery, Kansas Wildlife Federation (Attachment 13); and Cynthia Abbott, of the Kansas Audubon Society (Attachment 14).

There were no other opponents of the bill to present testimony.

The meeting was adjourned at 12:10 p.m.

FEDERAL & STATE AFFAIRS COMMITTEE
GUEST LIST

DATE: 2-14-96

NAME	REPRESENTING
LINA BROWN	Peterson Pbliz Affairs 924D
Ed Schaub	Western Resources Inc.
Dick Bonfy	Cowley Co. Commission
Robert J. Trudo	New Del Drainage
David McLines	" " "
Douglas Quillen	Meyer's Ready Mix Inc.
William J. Denny	Penny's Concrete, Inc.
Adrian Amper	Amper Farms
Bob Hedrick	self
Cynthia Abbott	Ks. Audubon Council
Ben Wilcox	Topeka High School Ecology Club
Dennis Baker	State Conservation Commission
JOHN NARAMORE	KANSAS KEY PRESS, INC.
Stovell Montgomery	Ks. Wildlife Federation
Rick Shaw	Commission Jefferson County
Mary Shivers	XOOT
Joni Peterson	Victory Sand
Jerry R. Culbertson Ph.D.?	KAPA
Gayla R. Keating	KAPA
Steve Alan	LRM Industries
E. L. "Woody" Mann	Ks Aggregate Prod. Assn.
Charles E. Clark	Holliday Sand & Gravel
Bill Gaver	KARC / Siena
Sam Legraves	American Game Assoc - Kansas Game Assoc.
T.J. HITTLE	FLINT HILLS MUDRUM SOCIETY KANSAS GAME ASSOCIATION
Eileen Larson	
Mark J. Maher	Citizens for the Future of Jefferson County & Friends of the Kaw
Paul M. Heindelbrecht	TOPEKA SIFERRA CLUB

FEDERAL & STATE AFFAIRS COMMITTEE
GUEST LIST

DATE: 2-14-96

NAME	REPRESENTING
MIKE CALWELL	Friends of the KAW
Cathy Tucker-Vogel	KS Water Office
Blake Henning	State Conservation Commission
GEORGE AUSTIN	DIV OF WATER RESOURCES
Leland E. Ro (f's	
DARRELL MONTGOMERY	* DWP
Steve Adams	Dept. of Wildlife + Parks
Kana Calwell	Friends of the Kaw
Just Tomlinson	Sinner of Topeka
Patty Bauer	Friends of the Kaw
Bob Totten	KS Contractors Association
Glenn D. Cogswell	N. Topeka Drainage District
Glenn D. Cogswell	Topeka High School
Ann Clements	Kansas Biological Survey
Paul Leicht	KS Biological Survey
Ed Martin	KS Biological Survey
Cynthia Ann	Research for Kansas Biologist
Lance Burr	Friends of the Kaw
Sidra Mattson	Topeka High
Sarah Bracken	Topeka High
Amanda Cott	
Megan Petty	
Kenneth Farber	
Glenn D. Cogswell	
Frans F. Ruel	Topeka High
Lori Wilson	Sojourners club at Topeka High
Zack York	↓

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Remarks of Senator Sandy Praeger
In support of
S.B. 617

Kansas River Sand-Dredging Moratorium

Senate Federal and State Affairs Committee

February 14, 1996

Thank you, Chairperson Oleen, for the opportunity to testify today in support of S.B. 617. I've brought a little Valentine's Day gift for the committee, a bucket of sand from the Kansas River. We're going to hear a lot about sand today. But this debate is not just about sand and the economics of the availability of sand. It's about the Kansas River, a natural resource that belongs to the people of Kansas. I'm reminded of the Boy Scouts and Girl Scouts who practice good stewardship when they venture into our natural environment. They believe that they should leave a place better than when they entered. We, as legislators, should keep that in mind when we have opportunities to practice good stewardship. We should leave our state a better place than when we entered office. For me that is the focus of this debate today: leaving our state and its natural resources better for our having served in office. We owe it to our children and our grandchildren. There are many decisions that we make as public officials that can be undone if they prove to be incorrect. We don't have that luxury with the environment. The wrong decision could take several lifetimes to undo, if at all.

The purpose of this bill is simple: it calls for a moratorium on new dredging operations in the Kansas River while a recreational corridor study is being undertaken by the Kansas Department of Wildlife and Parks. The way the moratorium is accomplished is by directing the two state agencies which deal with permits for sand-dredging not to issue any permits. The Kansas Department of Revenue has to consent to new dredging because it collects royalties for sand taken from the Kansas River. The division of Water Resources is the permitting agency under state law for obstructions in streams, and dredging is covered by that act. In addition, the bill calls on the governor to inform the federal U.S. Army Corps of Engineers of this policy of state government. The bill does not affect existing dredging operations, and the bill allows for dredging to occur when necessary to protect bridge abutments or other transportation projects or private property. In this respect, this bill is a very moderate and responsible

*Attachment 1
Senate Fed. State Affairs
2/14/96*

approach to good planning for state resources. It does not seek a permanent moratorium. It simply sets forth a short period of time in which to consider the possible multiple uses of the Kansas River.

To accommodate concerns expressed by Western Resources, I will recommend that their proposed amendment be adopted, which clarifies that dredging can also occur to maintain access to water from the Kansas River for the power plants located adjacent to the river.

One reason this bill is before this committee is because it alters the federal-state relationship. Under existing law, the Corps of Engineers makes decisions at the federal level whether permits will be granted in navigable waters. However, the Corps has said it will respect a decision from the Governor or the legislature, and this bill is intended to reflect the position of the State of Kansas. It is important for Kansans to create the rules which affect the Kansas River. Since the Kansas River -- and the Kansas River sand -- is owned by the public, we should not simply be idle while these decisions are made at the federal level. We need to construct our own vision of what the Kansas River should be for Kansans. This bill gives us time to do that.

The study is expected to take two years, so the moratorium is expected to last two years. The moratorium will last as long as the study takes, plus whatever time it takes for the legislature to review the study and implement policy decisions. The study of the recreational opportunities of the river was authorized by the Kansas Water Authority and assigned to the Kansas Department of Wildlife and Parks. I do believe that the study should include the entire river and when we work the bill I will have a balloon amendment to include that language.

Today you will have the opportunity to hear from conferees who bring a great deal of specialized expertise to the committee. Among the points which will be made are these:

*Because of the reservoirs upstream which control the flow of the Kansas River, sand is no longer a renewable resource in the river.

*Sand is available in many locations throughout the state. You will hear about the economic impacts of the moratorium. I believe they are very minimal.

*Monitoring of the existing dredging on the river has been inadequate. That issue has been discussed in the House during the debate and passage of a bill which raises the royalty fee on sand that is extracted.

*Sand-dredging contributes to bank erosion, damaging the property of private landowners. Commercial dredging is exempt from the requirements of

reclamation that we impose on other forms of mineral extraction in the state (see enclosed letter from the State Conservation Commission)

*It doesn't make any sense to conduct a recreational corridor study while new sand-dredging operations get started. The study might recommend a boat dock at or near a new dredging operation. We need to understand which segments of the river are the best for recreation and the development of tourism opportunities. The Shawnee County Commission, the Douglas County Commission, and the Lawrence City Commission have recognized this and passed resolutions supporting the concept of this bill. You will hear from persons who already enjoy the recreational aspects of the river and want to be able to continue.

Those points will be elaborated on by the conferees. In addition, I would like the committee to know that the stretch of the Kansas River between the Delaware River confluence and the I-635 bridge in Kansas City has been included in the National Wild and Scenic River Systems by the National Park Service. This stretch of the river is critical habitat for the bald eagle. The designation within the National Rivers Inventory means that the river is nationally known for its outstanding scenic and recreational values, as well as its fish and wildlife resources. Folks in Lawrence, and visitors to Lawrence, are pretty proud of the fact that the Kansas River still supports a rebounding population of bald eagles.

That's the good news. The bad news is that the river is also on the list of the top 10 endangered rivers in the nation, a list maintained by American Rivers, a national conservation group. The risks to the river because of sand-dredging are one reason the Kansas River has been targeted for increased conservation efforts.

The Kansas River is the state's only accessible public river. That point deserves continued emphasis as you consider this bill. The Arkansas River has a well-known shortage of water, at least in most years, and the Missouri River is too big to be user-friendly for all classes of possible users, especially families with young children. All other rivers and streams in Kansas are considered private property. In the Kansas River, however, there is already considerable public use. The river is used by birdwatchers, hunters and fishermen, canoeists and kayakers, and others. (even the Kansas University crew team!)

Thank you for your attention. I would now like to turn the microphone over to the experts. I hope you will remember my opening comments about stewardship. This bill gives us the opportunity to determine the appropriate way to be good stewards of this natural resource. One final comment, a friend in Lawrence once said that Kansans have a tendency to see the rest of the world in technicolor and their own state in black and white. I just want us to recognize our river as one of those technicolor treasures that belongs to all of us.



State Conservation Commission

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February 12, 1996

Senator Sandy Praeger
Rm. No. 128-S
State Capitol
Topeka, KS 66612

Dear Senator Praeger:

Thank you for your inquiry concerning the Land Reclamation Program of the State Conservation Commission (SCC). I hope the following answers some of your questions about the Program. Near the end of the letter, I discuss some knowledge of streambank stabilization that SCC has gained from projects we have undertaken.

The Surface-Mining Land Conservation and Reclamation Act (K.S.A. 49-601) was passed by the 1994 Legislature. It requires that anyone mining gypsum, sand, gravel, stone, or any other commercial mineral, to reclaim the mine site to appropriate standards. Coal, oil and gas mining are excluded from this Act as well as mining operations which involve the removal of sand and gravel from within a stream.

The Act requires the following three basic items:

- 1) Anyone operating a mine shall be licensed.
- 2) The operator must register the site with SCC and submit a reclamation plan and performance bond for the site.
- 3) Prior to the release of the site, the mine shall be reclaimed to appropriate standards.

Reclamation Standards include:

- 1) Affected areas shall be graded to a 3:1 slope or less.
- 2) Affected areas shall be seeded to an approved vegetative cover.
- 3) Overburden piles and topsoil piles shall be stabilized.
- 4) Large boulders, debris, old equipment and other material shall be removed from the site.
- 5) Reclamation is only required on land that was mined or where overburden was piled. The Act does not require the reclamation of stockpile areas, roads, or crushing areas.

The issue of streambank stabilization along the Kansas River is a difficult item to address. Several factors including; the size of the river, rapidly changing river levels due to reservoirs and levees, removal of riparian forests for farming and other activities, channelization, and in-stream mining probably all play a role in bank erosion up and down the river.

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There are practices that can be implemented at specific sites or in localized areas to slow down erosion or reduce its impact. We will never stop the erosion altogether and the current technology of stabilization will result in various levels of success. This agency would be happy to assist landowners, mine operators, and others in addressing erosion concerns where we can. It is a large and complicated problem.

Please don't hesitate to call if you have additional questions.

Sincerely,



Blake L. Henning
Resource Administrator

BLH:blh

1-5



DEPARTMENT OF WILDLIFE & PARKS

Office of the Secretary
900 SW Jackson, Suite 502
Topeka, KS 66612
913/296-2281 FAX 913/296-6953

S.B. 617

Testimony Provided To: Senate Federal & State Affairs Committee
Presented By: Kansas Department of Wildlife & Parks
February 14, 1996

Under provisions of this bill, the Department would perform a recreational corridor study on the Kansas River from near Ogden, Kansas to Lawrence, Kansas. The study would focus on economic and development opportunities of the Kansas River for recreational purposes. The study report would be submitted to the Kansas Legislature.

The Department recognizes the potential for economic development and public recreation associated with the Kansas River. A Kansas River recreational corridor study has been initiated in cooperation with the Kansas Water Office and the Kansas River Basin Advisory Committee. Intent of that study is to identify areas to enhance for recreational opportunities on portions of the Kansas River. The study will focus on suitable river access locations such as boat ramps and access sites and also associated facilities such as picnic areas. That study is just getting underway.

The Department has previously commented on the issue of river dredging during the summer legislative review and during the public hearing process as conducted by the U.S. Army Corps of Engineers. That testimony can be made available for the committee's review

Should S.B. 617 be enacted, the Department will expand upon the recreational study effort to accommodate the bill's objectives on the targeted river area between Ogden and Lawrence.

*Attachment 2
Senate Fed: State Affairs
2/14/96*

Robert E. Russell
3709 Quail Creek Ct.
Lawrence, Kansas 66047

Senator Lana Oleen, Chair
Committee on Federal and State Affairs
Kansas State Capitol
Topeka, Kansas 66612

Re: Comments on Senate Bill No. 617; concerning sand dredging in and along certain portions of the Kansas River.

Introduction

I would like to thank this Committee for the opportunity to express my concerns, as a Kansas farmer and landowner, about sand dredging between river miles 67.5 and 69.0 on the Kansas River. I have tried to access the impacts that a sand dredging operation would have on our two farms which serve as the bookends for the proposed dredging site. Because of the complexities of this subject I contacted E. Robert Hedman, a noted research hydrologist, and asked him to make a study in this regard. I have included a copy of the Hedman study with my handouts.

Impact of Dredging on Area Farmers and Landowners

The Kansas River is a sediment-starved stream due to the construction of upstream reservoirs. As soon as dredges start to mine existing sandbars and gravel beds, the river, being a dynamic system seeking equilibrium, will attempt to find replacement material from the banks of the adjacent property due to the lateral dissemination of the effects of in-channel dredging. Mr. Hedman estimates that it will take about six tons of bank material (83 percent silt-clay) to replace each ton of bed material that is removed from the river. The maximum annual removal of 300,000 tons (225,000 cubic yards) of sand and gravel annually between Kansas River miles 67.5 and 69.0 can be expected to create an annual loss from adjoining property of 1.8 million tons or 1.3 million cubic yards of bank material. This represents a potential loss of more than 10 acres annually. Such a loss will be a direct result of man-made changes caused by dredging, rather than from natural change in the water course.

In-channel Dredging and the Water Quality Initiative for Kansas

1. At the Kansas Conference on the Environment in late October (1995), Governor Bill Graves announced his Water Quality Improvement Initiative for Kansas pointing to evidence of pollution from agricultural chemicals, feedlot wastes, and sediments from farm fields as primary problems. Needless to say these are sensitive issues for Kansas farmers and ranchers and particularly for those of us in the Delaware River Basin where the state's first Pesticide Management Area was established by the Kansas Department of Agriculture in April, 1992.
2. The bulk of the prime agricultural land in the Kansas River floodplain in Jefferson County is typically in a corn-soybean rotation. Soybeans one year, corn the next on a given tract of land. The Natural Resources Conservation Service estimates the soil loss for this rotation to be 3-4 tons per acre or about 45,000 tons total annually.

Attachment 3
Senate Fed & State Affairs
2/14/96

3. The removal of 300,000 tons (225,000 cubic yards) of sand and gravel annually between Kansas River miles 67.5 and 69.0 will create an annual soil loss of 1.8 million tons that can be expected to erode from adjacent farm property. Because more than 80 percent of the material from the adjoining properties is silt and clay, which is lighter in weight than sand and gravel, most of it will be carried down stream as suspended sediment.

4. Farmers in the Delaware River Basin have been urged by the Natural Resources Conservation Service to implement sound conservation practices, such as reduced tillage, to mitigate the erosion of farm land into the Kansas River. We understand the importance of water quality. We have complied by changing old habits that were harmful to the environment and adopting more enlightened farming practices. We made capital investments in farm implements designed to meet these conservation objectives. This transition was not easy nor without financial sacrifice. But I think most farmers today can take pride in the results.

5. In-channel dredging between river miles 67.5 and 69.0 will contribute forty times the amount of suspended sediment into the Kansas River when compared to soil erosion from prime bottom farm ground under conservation tillage in Jefferson County. Or looking at it the other way round, farming will contribute only about 2.5 percent of the total annual soil loss when compared to the proposed in-channel dredging operation. I think that the aggregate producers need to follow in the foot steps of the farming community- bite the bullet by abandoning the out-dated practice of in-channel dredging- and join the farming community as responsible citizens in the area of water quality.

A MODEST PROPOSAL: PRESENTED TO SENATE FEDERAL AND STATE
COMMITTEE - 2/14/96

By: Ben Lerner

Before making a few brief statements, I would like to thank this committee for giving me this opportunity to speak. The Topeka High-school Sojourners Ecology Club is pleased to see our local government encouraging dialogue on contemporary ecological issues. I would like to briefly highlight the importance of this resolution, to these, your youthful constituents, and then to read a concise position paper compiled by the Sojourners organization.

The reasons for limiting dredging are clear and reasonable. The integrity of the Kansas river is of immense importance. Access to a clean, safe, and navigable river is a right of all citizens in this state. When dredging, a process for which clearly feasible alternatives exist, threatens the ability of our citizenship to capitalize on the opportunities afforded by our river, the interests of business should yield to the interests of citizens. As the last river suitable for canoeing in this state, and as a home for a multiplicity of Kansas's treasured wildlife, any activity which is so uniquely dangerous to the River and its dependent ecosystems clearly demands stringent evaluation.

*Attachment 4
Senate Fed & State Affairs
2/14/96*

In addition to the compelling economic and recreational arguments in favor of limiting dredging, the Sojourners club would like to contend, that a greater issue of principle is evoked. Some eighty years ago, an ecologically minded member of the Kansas Legislature wrote, "We are all but stewards of the land, and obligated as such." This rather poetic statement imparts a greater, relevant truth, that independent of any permit one is granted, apart from any licence one obtains, none of us, be it business, government, or private citizen, can stand as a monarch over our Kansas environment. We do not exist as kings, with a right to manipulate our environment to the end of shortsighted advantage, but rather as caretakers, obligated to enjoin those actions which will aid in the preservation of our ecosystem for generations to come. It was the work of your posterity to hand to you an environment unmarred by gutting industrialization. To a great degree, they failed. In many areas in which Kansas once stood as a symbol of ecological balance, we have become symbols of dubious degeneration. Our water quality and other elements of our habitat are among the nations most suspect. Yet it seems, that under the guise of inevitable progress, the environment we will inherit will be but a semblance of that enjoyed in your youth. Realistically no one can expect the environment to exist in a vacuum. But wanting our most important river to at least be clean enough for a swim, or accessible enough for a visit, is not a lofty goal. In the final analysis, it will be public policy and not purely principle that will shape effective action. We must scrutinize the policies of dredging for their implicit environmental costs. This awareness is essential to the success of government and to sustaining our fragile ecosystems. Our development is inextricably linked to the recognition of our symbiotic relationship with

4-2

nature. The maintenance of this relationship will mandate fundamental change in human behavior and in the characteristics of social institutions.

Limiting dredging and funding valuable research is beneficial to all citizens of this state.

If no one takes a tangible initiative to prevent cycles of environmental degradation, then a troubling precedent, of condoning the destruction of our environment, will be nearly institutionalized. With this concern, heavy upon our minds, the sojourners organization, looks hopefully to you, to uphold your honorable position as the stewards of our land, and to support the bill before your consideration.

With that in mind, the position of the Topeka HIGH-SCHOOL Sojourners Ecology Club, is as follows:

We, the concerned members of the Topeka High-school Sojourners Ecology club, feel compelled to make clear, to the institutions of Kansas government, and to all citizens who it may concern, that as an organization committed to the preservation of our ecosystem and environmental integrity, we stand firm in our resolve, to inherit a Kansas uncompromised by the exploitation of its natural qualities, and specifically, to inherit a Kansas River, free from the destructive influences of sand dredging.

We, the concerned members, of the Sojourners organization, turn hopefully to government and citizens alike, to take seriously and enthusiastically, the initiative to support those actions, which aid in the preservation of our environment, and hence, the betterment of all our lives.

TESTIMONY

by

Mr. Charles Clark
Holliday Sand & Gravel Company

Before the

SENATE FEDERAL AND STATE AFFAIRS COMMITTEE

Regarding SB #617 - Moratorium on Dredging
February 14, 1996

Good morning Madam Chair and members of the committee. Thank you for the opportunity to come before you today with our comments on Senate Bill No. 617 concerning a proposed moratorium on sand dredging in the Kansas River. My name is Charles Clark and I am appearing on behalf of the Kansas River Sand Producers and my own company Holliday Sand & Gravel.

The Kansas River is an important recreational as well as industrial resource for many Kansans. It provides 100% of all the concrete, fiberglass and others industrials sands in the Kansas City market. In recent years the United States Army Corps of Engineers has reduced the quotas of Kansas River sand from approximately 4 million tons per year to 2.25 million tons per year. A cut of almost 50 % in sand production. In order to replace this sand the Corps of Engineers had envisioned establishing new dredge site in reaches of the river above Bowersock Dam. The purpose in this was to provide relief for the aggradation problem above Bowersock and replace tonnage lost to the Lawrence, Kansas City, and Topeka markets. As Senate Bill 617 prevents the opening of two new dredge sites in Jefferson County it will in effect kill the United States Army Corps of Engineers regulatory plan. As passage of this bill will cause a severe disruption in the supply of sand to the Northeast Kansas corridor and may cause severe environmental impacts to Bowersock Dam we are opposed to SB617.

We urge this committee and this legislature to consider the science and the technology used in the development of the regulatory plan. Over \$14 million dollars and 20 years have been spent in the development of this plan. Please reject the emotional arguments displayed here today and make the right decision regarding SB617.

*Attachment 5
Senate Fed; State Affairs
2/14/96*

TESTIMONY

by

The Kansas River Sand Producers

Before the

SENATE FEDERAL AND STATE AFFAIRS COMMITTEE

Regarding SB #617 - Moratorium on Dredging

February 14, 1996

Good morning Madam Chair and members of the committee. Thank you for the opportunity to come before you today with our comments on Senate Bill No. 617 concerning a proposed moratorium on sand dredging in the Kansas River. My name is Edward Moses and I am appearing on behalf of the Kansas River Sand Producers.

We wish to commend this panel for convening this hearing to review the vital issues surrounding the safe and proper development of our state's natural resources for both recreational and commercial purposes. However, as we proceed we caution you to look beyond the hyperbolic and inflammatory rhetoric you will hear to the facts surrounding this issue. As we proceed, ask for the science, ask for the engineering and ask for the data! Then as all good legislators do, stop, look and listen before making a decision. If you do so we are confident you will agree SB 617 is a poorly constructed and fatally flawed piece of legislation incapable of meeting the goals of those seeking to protect the Kaw or those seeking to develop it's mineral resources for all Kansans.

Commercial sand dredging has been an activity on the Kansas River since pre territorial days when material was extracted to provide surfacing for the Santa Fe and Oregon Trails. It has over the years provided a source of economical building materials

*Attachment to
Senate Fed & State Affairs
2/14/96*

utilized by many generations of Kansans in the building of this state. Sand hauled from the Kuehne dredge, not more than one mile from here, was used to construct the very building we are conducting this hearing in today. Sand is needed to make public roads safe from ice during winter and for the manufacture of computer chips and laser equipment in Wyandotte and Johnson counties. Given this long term contribution to our state, any measure to severely limit commercial dredging on the Kansas River would be ill advised.

The greatest single problem with imposing a moratorium on dredging is that it would prevent the full implementation of the United States Army Corps of Engineers regulatory plan for the Kansas River. A plan which seeks to restore equilibrium to the river by providing for limited dredging in specific areas of the river. A plan which requires 5 different approvals and contains many safeguards to protect the environment and provide for the reasonable extraction of sand. A plan that was developed after 20 years of study and at a cost of \$14 million dollars. It is important that the legislature uphold this plan as it allows for the relief of dredging activity below Bowersock Dam by permitting dredging activity above the dam, thus addressing the aggradation problem behind Bowersock and mitigating degradation in the lower reach. If, through a moratorium, the river is allowed to reach instability the negative environmental impacts could be irreversible. For this reason, more than any other, the Special Committee on Energy and Natural Resources chose to uphold the Corps regulatory plan by refusing to second four separate motions made to ban dredging on the river during it's deliberations.

The nominal purpose of proposing this moratorium has been to provide additional time for the Kansas Department of Wildlife and Parks to complete an "ongoing" study pertaining to the development of a recreational corridor in and along the Kansas River. Before taking action to provide this additional time we think this committee should gather more information on the status of this study. How long has it been underway? Has it been funded by appropriation? When will it be completed? Is it really necessary

to ban dredging until it's completion? We have checked both the State Water Plan recommendations for 1997 and the Kansas Department of Wildlife and Parks five year recreational plan and have found no reference to this study. However, during this research, we have found where the protection of riparian forests and wetlands have been identified as an issue by Kansas Department of Wildlife and Parks and the State Water Plan. It would seem counterproductive to adopt a moratorium and force dredgers to destroy riparian forests and wetlands through the development of pit operations. This committee should consider the position of the Kansas Department of Wildlife & Parks on riparian forests and wetlands before approving a moratorium.

You will hear repeatedly today, a whole series of horror stories about the negative environmental impacts and dire consequences regarding continued sand dredging. Once again we ask to stop, look and listen. During the legislative interim study we spent many dollars providing research and answering questions responding to these charges. The U.S. Army Corps of Engineers after spending millions on research, issued a comprehensive Environment Impact Statement and developed the Final Regulatory Plan based on it's findings. All of this time and expense has not assuaged the protests of the environmental community. The Kansas River has been dredged for over 150 years and during this course of time millions of tons of sand have been removed. During this same period it would be reasonable to expect some of these negative environmental impacts to have become apparent by now. We, therefore suggest you do your own mini environmental impact study by asking a few questions. Ask where the head cutting is taking place. Is it taking place at the Victory Sand & Gravel dredge which has been operating at the same location for the last 75 years. How deep is the headcut there by now? When will the banks cave in at this location? We are still waiting. Name the last bridge lost as a result of commercial dredging. These problems have had 150 years to develop. Where are they? If commercial dredging is harmful to wildlife, then where are the impacts. Why has the bald eagle population increased on the Kansas River? Why is there a nesting pair at almost every dredge on the river. Is

it because the dredges provide better fishing. If fisheries have been damaged, then what are the Eagles feeding on?

If commercial development on the Kansas River truly has a negative affect on the recreational development and environmental assets of the river, then why are such projects as the Oakland Expressway, current flood control projects, and water intakes projects exempted. All of these projects would tend to limit recreation on the river, yet they are not banned. Is it because the real purpose of this bill is to prevent the approval two proposed operations in Jefferson County? If not, then we suggest this bill be amended to include all industrial or commercial activity on the river. It seems inconsistent to set aside 110 miles of river for a recreational corridor by only targeting new dredging on less than one mile of this corridor. If recreational interests are unable to share the river with the dredges, then why are they able to share the river with bridges, weirs, water intakes and all the other myriad of commercial activity currently taking place? Why did they stand silent when the Oakland Expressway was proposed? Why did they stand silent when the new Johnson County weir was proposed? Why did they stand silent when the new bridges at Manhattan were proposed? Why do they continue to stand silent regarding the proposed dredging in the Weaver Bottoms area. If they are really friends of the Kaw shouldn't they be friends of all the Kaw? We think the answer to these questions may be simple. Once again, as so many times in the past, is this legislature being asked to intervene in a local matter at the behest of a few special interests?

And, if we are considering the interests of the few should we not consider the interests of the many? Why should almost one million Kansans, residing in the ten county area adjacent to the Kansas River be forced to pay significantly higher prices for sand & gravel, so recreational interests may enjoy 110 miles of the river instead of 109. The Corps regulatory plan has reduced the amount of sand to be extracted from the Kansas to 2.25 millions tons annually. The inability to get sand to the current market has already led to an approximate 33% increase in sand prices in

6-4

the Wyandotte/Johnson County market. As pit operations in the Kansas River floodplain are economically or physically infeasible, sand will have to be imported from a great distance at a great expense; unless, the proposed Jefferson county operations are allowed to augment the supply. Sand imported from Wyoming for the Denver International Airport cost as much \$16.00 - \$18.00 per ton. An increase in the price of sand of this magnitude would have an unfavorable impact on the Wyandotte/Johnson County market and make businesses and employment in those areas noncompetitive with surrounding areas of the Midwest. Sand currently sells for \$3.00 - ~~\$5.00~~ ^{\$3.50} per ton in the Kansas City area. Once again, given the economic impacts to residents of Northeast Kansas, it appears both insensitive and uncaring for recreational interests to be unable to share 3200 feet of a 110 mile stretch of river. Especially when it appears the recreational study may, or may not be ongoing; and may, or may not be funded.

Given the reasons described above it would seem ill advised for this committee or the legislature to adopt such a moratorium at this time. There is no clear consensus on what the recreational advantages of placing the dredging moratorium on the river might be. We support a study of the recreational aspects of the Kansas River but only if it is funded and if it's goals are clearly outlined. This bill is narrowly constructed to prevent two new dredging operations. This is a local matter which should be decided in the local arena. We urge the legislature and particularly the Senate Federal and State Affairs Committee to reject this bill for what it is - a narrow minded attempt to prevent two dredgers from going about their livelihood. And, as a consequence, upset a plan carefully drafted by the U.S. Army Corps of Engineers to use commercial dredging as a tool in the management of the Kansas River, while providing a positive economic impact to the Northeast Kansas community.

We thank you for your time and attention today.

4. **Public Water Supply Outreach** should continue to utilize Kansas Rural Water Association to carry out activities reducing municipal water use, producing greater water use efficiencies and strengthening public water supplier viability.

5. **Household Hazardous Waste** should not be funded from the State Water Plan Fund, but should be funded from revenues generated from solid waste tipping fees.

TABLE 4
FY 1997 Recommended State Water Plan Fund Allocations

KANSAS DEPARTMENT OF WILDLIFE AND PARKS

PROGRAM	FY 96 APPROPRIATION	FY 97 REQUEST	FY 97 TRANSFERS	FY 96 CARRYOVER	FY 97 RECOMMENDATION
1. CHEYENNE BOTTOMS RENOVATION	\$ 1,000,000	\$ 500,000	\$ 500,000	\$ 0	\$500,000
2. NEOSHO STREAM MONITORING	\$ 50,000	\$ 50,000	\$ 38,000	\$ 12,000	\$50,000
TOTAL	\$1,050,000	\$550,000	\$538,000	\$12,000	\$550,000

KANSAS WATER AUTHORITY COMMENTS

1. The anticipated FY 1995 carryover of over \$750,000 is expected to be spent within FY 1996 to continue modifications to **Cheyenne Bottoms**. New transfers within FY 1996 will also be committed in that fiscal year. The recommended funding for FY 1997 will complete Cheyenne Bottoms renovation.

2. Anticipated carryover funds from the 1993 appropriation for the Neosho Madtom Study (\$12,000) should be reprogrammed to complete the **Neosho Stream Monitoring** project.

3. Up to \$78,935 in FY 1995 funding for the riprap repair at Cheney Lake (project is complete) should be reprogrammed within FY 1996 or

1997 to initiate a stream biological monitoring network within the targeted subbasins of the Governor's Water Quality Plan for the Kansas-Lower Republican Basin.

4. At least one-half of the carryover funds for conservation easement acquisition (one-half of \$150,000), appropriated in FY 1993, should be directed into the Kansas-Lower Republican Basin as part of the Governor's Water Quality Plan for the Kansas-Lower Republican Basin.

CHANNEL GEOMETRY AND GEOMORPHOLOGY
OF THE LOWER KANSAS RIVER

LAWRENCE, KANSAS

APRIL 1995

Attachment 7
Senate Fed & State Affairs
2/14/96

CHANNEL GEOMETRY AND GEOMORPHOLOGY OF THE LOWER KANSAS RIVER

E.R. HEDMAN

INTRODUCTION

Many of the streams in Kansas have been used as sources of construction material, principally sand and gravel. The material in the alluvial channels provides very good construction aggregate because it is naturally sorted, rounded, and graded by the water and sediment that is carried by the streams. Unfortunately in-stream mining upsets the delicate balance of the streams.

The fluvial systems strive for a balance among characteristics of water and sediment discharge and channel properties. A change in any of these discharges and/or channel properties must result in an adjustment by the others to compensate for the imposed stress. Both the water and sediment discharges have undergone a serious change by the upstream reservoirs, levees, bridges, and related projects.

Luna B. Leopold (1994) reported that we in the United States have acquiesced to the destruction and degradation of our rivers in part because we have insufficient knowledge of the characteristics of rivers and the effects of our actions that alter form and process. The river constructs and maintains its channel, and the river channel responds quickly and sensitively to any change.

PREVIOUS INVESTIGATIONS

The theory that stream channels are sculptured by the water and sediment that they carry led to many investigations by hydrologists and geomorphologists to relate the

dimensions of channel geometry to various discharge characteristics. Hedman and Kastner (1977) identified the "active channel" and described it as:

***a geomorphic expression of recent discharge. Depositional features within the active channel are altered and shifted regularly during the normal fluctuation of streamflow. Beyond the boundaries of the active channel the geomorphic features are generally permanent and vegetated. The sides of the active channel, which contain the discharge at normal stages, are formed by relatively steep sloped banks. The reference level used to measure the geometry of the active channel is selected where the banks abruptly change to a more gently sloping surface. This level is associated with the stabilizing influence of riparian vegetation. Hence, the break in slope identifying the active-channel reference level is generally coincident with the lower limit of permanent vegetation.

The relation of flood-frequency characteristics and mean annual runoff values to active-channel geometry were presented for the Missouri River basin. Equations were derived by regression analysis based on the correlation of flow characteristics with the dimensions of the channel geometry. Data for continuous-record gaging stations were used in the derivation.

Osterkamp and Hedman (1982) made a study in which channel-geometry, channel-sediment and discharge were collected for 252 streamflow-gaging stations in the Missouri River basin. The data were analyzed by computer to yield simple and multiple power-function equations relating various discharge characteristics to variables of channel geometry and bed and bank material.

Relative to streamflow, narrowest channels occur when streams of steady discharge transport sufficient silt and clay to form stable, cohesive banks but have small bed-material load of sand and coarser sizes. Stable channels also are associated with relatively large channel gradients, relatively large channel roughness, and armoring of bed bank by coarse particle sizes. The widest, most unstable channels are ones that

apparently transport a large bed-material load of sand sizes. The downstream rates of change of width with discharge reflect these trends, indicating that a given bed-material load necessitates a minimum width for movement of tractive material.

Osterkamp and others (1982) reported a deficiency of sediment inflow to the Kansas River is likely to cause continuing change in the channel. Reduced inflow of coarse sediment probably results in a decrease of channel gradient by bed degradation or increased meandering, and the supply of fine-grained sediment is insufficient to maintain alluvial banks that are resistant to erosion.

Significant rates of channel degradation of the Kansas River presently are not occurring at most sites, but may occur in response to long-term regulation. Recent channel degradation near Bonner Springs is largely the result of extraction of sand and gravel. Any natural or imposed changes that shorten the channel or further reduce the sediment inflow to the Kansas River are expected to result in additional channel changes.

Urbanization, highway construction, and sand and gravel operations on the Kansas River flood plain probably are aggravating the tendency toward local, short-term channel changes. Any flood-plain activity that disturbs the Kansas River alluvium and removes vegetation lessens the resistance to erosion and releases both fine and coarse sediment to the river. The fine fraction is transported through the Kansas River system, whereas the coarse fraction is added to the bed load.

7-4

Records of stage change of flow rates corresponding to 25-percent flow duration show that about 8 feet of channel degradation have occurred since 1957 at the Kansas River at Bonner Springs. Dredging and sand and gravel operations have been intensive and the degradation is closely related to the extraction of sand and gravel. Similarly, over one foot of degradation has occurred at Topeka. An insignificant amount of degradation has occurred at Lecompton.

Simons and others (1984) reported in the results of their study that operation of the federal reservoirs has changed the flow duration characteristics of Kansas River. This has resulted in reduction in the amount of bed material carried by the system (approximately 30 to 40 percent) on an annual basis. On a reach-by-reach basis, the reduction in bed-material transport due to operation of federal reservoirs varies. In general, the aggradation tendency in some reaches increased while the degradation tendency in other reaches is somewhat dampened. This process helps offset the degradation impacts due to dredging in Wamego and Bonner Springs areas. The aggradation tendency in the Topeka area is reduced by the operation of the reservoirs. Although it still aggrades for the with-reservoir condition, the amount of aggradation is less, indicating a greater impact due to extraction of material through sand and gravel dredging. Changes in flow duration have also had some impact on the sediment sizes being transported by the system. Incipient-motion analysis indicates the maximum size that can be transported has been increased slightly for medium flows (those equaled or exceeded approximately 2 to 20 percent of the time). For higher flows, the maximum sizes that can be transported have been reduced 50 percent.

Sand and gravel dredging appears to be the primary cause of the bank erosion and channel widening in the lower 30 miles of the Kansas River. Significant quantities of material have been removed from the channel bed in this reach during the past 50 to 75 years. Between 1952 and 1976, approximately 49.3 million tons of material were dredged between Turner Bridge and Bonner Springs, which corresponds to an average thickness of approximately 15 feet within the main channel. Sediment continuity indicates a direct relationship between the dredging activity and channel degradation and bank erosion. As evidenced by the approximately 8 to 15 feet of degradation and 150 feet of channel widening between Turner Bridge and Bonner Springs, available data show areas within the lower Kansas River which have undergone the most severe degradation are the same locations where extensive dredging has taken place.

Sand and gravel dredging can affect the morphology of a river in three major ways: (1) local degradation and channel widening, (2) downstream degradation and related impacts such as channel widening and bank erosion caused by the interception of the normal sediment load of the river, and (3) upstream degradation and related impacts due to headcutting.

Schumm (1972) reported a study by J.F. Friedkin. This study was concerned with the source, path of travel, and location of deposition of sand. These studies showed that within a meandering river, the source of the sand is the caving banks, and the sand travels only a short distance to the first convex bar downstream where velocities are low enough to permit deposition. There is more or less continuous trading of sand along a river, deposition on bars and replacement from caving banks.

Leopold (1994) discusses suspended load and bedload as follows: Suspended load comprises the fine fraction of material in transport that is mixed intimately with the flowing water. It tends to make water muddy. This fine material will settle through the water owing to its density, but it is sporadically and repeatedly caught in local turbulent eddies and lifted again and again into the body of flow.

In contrast, larger particles are not swept up by eddies but are pushed along near the streambed, and for this reason are known as bedload. Whereas the concentration of suspended particles decreases exponentially from bed to water surface, bedload never rises off the bed more than a few grain diameters. Bedload moves by a combination of sliding, rolling, and saltation. Saltation is defined as motion consisting of a series of short hops, often temporary rests, before propulsion forward for another hop or short excursion. Sand and gravel are transported as bedload material. Bedload material only moves with discharge greater than the average annual discharge, generally less than 20% of the time.

Sandecki (1989) reported that aggregate mining in river systems may cause a number of changes in the way water and sediment are carried through the system, and may result in changes in channel expression. Variations in the overall sediment supply, timing of deposition, and replenishment are factors to consider in channel mining plans to avoid unexpected impacts.

It is necessary to examine the dynamics of sediment routing in a river system when assessing the potential environmental impacts due to sand and gravel mining operations. Impacts of mining alluvial deposits reflect the rate and timing of movement of sediment

in the active channel and the depositional patterns of sand and gravel.

Channel degradation also may affect groundwater levels. Groundwater aquifers that discharge into a stream may be lowered because the deepened streambed acts as a drain.

Locations in the floodplain, adjacent to but not in the active channel, may contain gravel reserves suitable for extraction. If an area can be permanently isolated from the active channel, pits mined below the streambed level can exist without causing the river channel to adjust to removal of the sediment.

CHANNEL GEOMETRY

The width-discharge relations for alluvial channels of specified sediment properties, Osterkamp and Hedman (1982) were developed to estimate discharge characteristics at ungaged sites. Besides the principal utility of estimating discharge characteristics of ungaged streams, the equations can be used for the design of artificial channels and can be used as a basis of predicting channel changes resulting from upstream alterations of the basin or channel. The width-discharge relation for a channel with sand bed, silt banks (silt-clay percentage of the bed material equal to or less than 10, silt-clay percentage of the bank material 70 to 100, and median size of the bed material less than 2 mm), were used to compute active channel widths. The computed widths for reaches downstream from Topeka, Lecompton, and DeSoto were 170, 195, and 180 meters, respectively. The measured widths of the active channels near the gaging stations (Osterkamp and Hedman, 1982) for the three sites are 6%, 12%, and 8% less.

These results indicate that Kansas River channel is relatively stable at the three sites. This is to be expected because river has relatively steady discharge due to the regulation by the reservoirs, sufficient silt and clay to form stable, cohesive banks, and a small bed-material load of coarse sizes. In addition to meeting these requirements, the channels at these sites have not been seriously disturbed by in-channel activities.

Several conditions could have affected the accuracy of the computations, however. The average annual discharges used in the computations at these sites was computed from different periods of record at the gaging stations; the Topeka site is affected by urbanization; and the Delaware River which enters the Kansas River between the Topeka and Lecompton sites is regulated by Perry Reservoir.

BEDLOAD TRANSPORT

The Shields criterion for non-dimensional boundary critical shear stress, is:

$$(\tau * c)_d = \frac{\gamma_w L G}{(\gamma_s - \gamma_w) g d}$$

where γ_s and γ_w are the specific gravity of the sediment and of the water mixture, L is the water depth, G is the channel gradient, and d is the sediment size in centimeters.

For most streams like the Kansas River, γ_w is about 1.0 and $(\gamma_s - \gamma_w)$ is about 1.65.

Empirically, $\tau * c$ has been found to be about 0.03 to initiate motion, and about 0.06 to have significant movement. For the Kansas River upstream from Lecompton, G is 0.00035 and d_{50} is 0.061 cm.

Transposing the above equation and solving for water depth shows the depth for incipient motion (L) is 8.6 meters and for significant movement, (L) is 17.2 meters. Osterkamp and Hedman (1982) reported that the average depth of the active channel is 8.5 meters. Therefore, the elevation of the water surface will have to be near the upper level of the active channel to initiate movement of the bed material and above bankfull stage to obtain the depth necessary for significant movement of bed material. These results are consistent with other data that show the bedload material of this size is generally only moved during floods.

Similar calculations show that deepening the channel by excavating bed material and reducing the width will have the effect of mobilizing the smaller grain sizes. This will subsequently widen the active channel width by eroding the banks. Part of this process is the rivers attempt to refill the excavation and to restore its prior gradient.

SEDIMENT BUDGET

In-channel mining tends to enlarge the active channel. If the size of the channel is greater than necessary for quasi-equilibrium, the river will attempt to heal the unused parts of the channel. None of the bedload material leaves the upstream reservoirs, and very little of the material in the upstream channel is transported to the reach of channel that is being mined. Bedload material is only moved with stream discharge greater than the average annual discharge, about 20% of the time. And as explained earlier in this report (Leopold, 1994) bedload never rises above the bed more than a few grain diameters. Bedload moves by a combination of sliding, rolling, and saltation. Therefore, the principal source of replacement material is the caving banks

(Schumm, 1972).

The percentage of silt and clay in the banks is about 83% (Osterkamp and Hedman, 1982). This would indicate the river will attempt to use about 6 tons of bank material to replace a ton of coarse material removed from the channel, and that approximately 5 tons of the material, the silt and clay, will move down the river as suspended material. The amount of the material that will be replaced from the banks and floodplain is difficult to estimate, it will depend on the number of flood events and the condition of the banks. If the vegetation or any other protective cover on or within the banks is disturbed, the bank caving could be expected to be accelerated.

CHANNEL DEGRADATION

Channel degradation can be expected to occur if the bedload material removed by in-channel mining is not completely replaced by material from the channel upstream or from the stream banks. Channel degradation can then affect groundwater levels. Groundwater aquifers that discharge into a stream may be lowered because the deepened streambed acts as a drain. Lowering groundwater levels, in addition to reducing aquifer storage volume, may lead to local destruction of riparian environments. (Sandecki, 1989).

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Note: Luna B. Leopold is Emeritus Professor of Geology at the University of California, Berkeley. Former Chief Hydrologist for the U. S. Geological Survey and winner of the National Medal of Science, he is one of the world's leading authorities on river hydraulics and geomorphology.

RESUME

PERSONAL

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BACKGROUND

Education

Pierre High School, Pierre, SD, 1939
South Dakota State University, B.S. Civil Engineering, 1947

Technical Courses:

Water Quality Mgmt. Sanitary Engineering Center, Cincinnati, OH
Advanced Surface Water Course, USGS, St. Paul, MN
Surface Water Hydrologic Analysis, USGS, Denver, CO
Quality Water for Supervisors, USGS, Denver, CO
Decision Theory, USGS, Denver, CO
Ground Water for Supervisors, USGS, Denver, CO

EXPERIENCE

Most of my professional experience has been with the U. S. Geological Survey, Water Resources Division in South Dakota 1951-58; North Dakota 1958-62; Washington, D. C. 1962-64; California 1964-68; and Kansas 1968-83.

- (1) Collected and processed hydrologic data in South Dakota and supervised the collection and processing of hydrologic data in North Dakota.
- (2) Completed a study of the relation of bankfull stage to the mean annual flood; wrote the computation methods for stream-gaging procedures; and completed a study of the effect of spur dikes through bridge contractions in Washington, D. C
- (3) Completed the surface water analysis for Chino Basin and Antelope Valley studies; served as project leader for arid land hydrology, Vail Reservoir evaporation studies, Cachuma Reservoir investigations, the relation of mean annual runoff to channel geometry, and supervised flood investigations in California.

- (4) Served as project leader for the development of balanced streamgaging program for Kansas, Kansas streamflow characteristics, interrelations of groundwater and surface water, and flood frequency for small drainage areas (1968-70).
- (5) Served as project leader for the relation of peak discharge to channel geometry of ephemeral streams in western United States; relation of mean annual runoff to channel geometry of streams in Kansas; and selected streamflow characteristics related to channel geometry of perennial streams in Colorado (1970-72).
- (6) Served as project leader for the channel geometry of regulated streams in Kansas; relation of streamflow characteristics to channel geometry of streams in the Missouri River Basin; and streamflow characteristics related to channel geometry in coal-lease areas in western United States 1973-80.
- (7) Served as surface water specialist for Central Midwest Regional Aquifer System Analysis (1980-83).

Much of my experience is reflected in publications. My bibliography is attached.

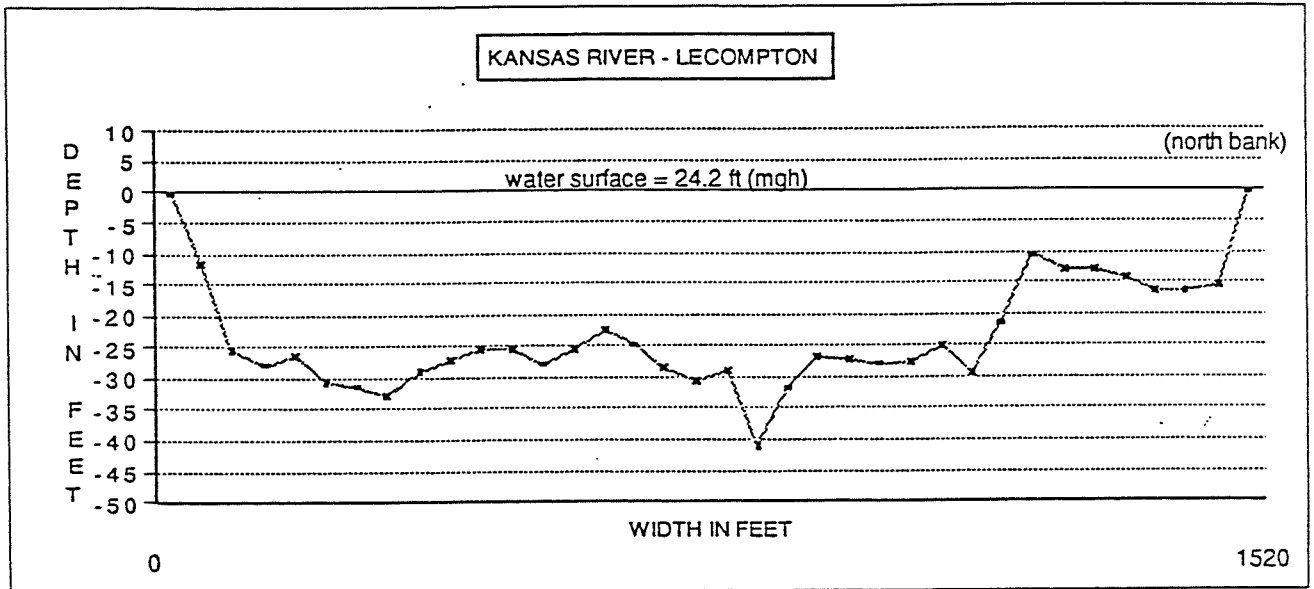
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E. R. HEDMAN
Research Hydrologist

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CHANNEL CROSS SECTION OF THE KANSAS RIVER NEAR LECOMPTON, KANSAS



175000 cfs @ 24.2 ft (mgh) 7/25/93

SHIELD'S CRITERION SHOWS THE DEPTHS OF WATER FOR INCIPIENT MOTION AND FOR SIGNIFICANT MOVEMENT OF BEDLOAD MATERIAL AT THIS LOCATION ARE 26FT AND 52 FT, RESPECTIVELY.

FLOOD FREQUENCY DISCHARGE IN CUBIC FEET PER SECOND AND GAGE HEIGHTS IN FEET ARE:

Q ₅	=	102,000 cfs	-	19.46 ft
Q ₁₀	=	137,000 cfs	-	22.42 ft
Q ₂₅	=	188,000 cfs	-	24.57 ft
Q ₅₀	=	228,000 cfs	-	26.64 ft
Q ₁₀₀	=	483,000 cfs	-	30.23 ft

(Q₅ - Q₁₀₀) are flood discharges with recurrence intervals equal to or exceeding 5 - 100 years.

Figure 1

7-17

SB615



Save Our Kansas River

February, 1996

Friends of the Kaw 2043 E. 1250 Road Lawrence, KS 66044

phone: (913) 843-3648 fax: (913) 842-44292

e-mail: 103051.1103@cserve.com

*Attachment of
Senate Fed ; State Affairs
2/14/96*

“...HYPERBOLIC AND INFLAMMATORY RHETORIC...”

In testimony on S.B. 617 before the Senate Federal and State Affairs Committee on February 14, 1996 Edward Moses, lobbyist for the Kansas River Sand Producers, cautioned members to look beyond the “hyperbolic and inflammatory rhetoric.”

We encourage Mr. Moses to read the Regulatory Plan in order that he be able to engage in enlightened discussion of the issues, instead of resorting to emotionalism through the use of “hyperbolic and inflammatory rhetoric.”

The Regulatory Plan

Mr. Moses stated that “the greatest problem with imposing a moratorium on dredging is that it would prevent the full implementation of the U.S. Army Corps of Engineers regulatory plan for the Kansas River. A plan which seeks to restore equilibrium to the river...”

*The Regulatory Plan addresses the interests of a narrow few and the Army Corps is **unwilling or unable** to implement the regulatory plan. This is witnessed by its lack of monitoring and/or enforcement of extraction compliance by companies dredging the river under the plan.*

It is a bad conclusion to apply the results and outcomes of a study on one section of the river that has been ravaged by dredges for decades, to areas that have been dredge free over that same period of time.

*Sections of the **river must be left undisturbed** in order to aid in the restoration of equilibrium to areas devastated by the disastrous effects of unchecked dredging of years past. It is wasteful and irresponsible to inflict currently untouched stretches of the river to the same fate.*

“...a comprehensive Environment (sic) Impact Statement...” ?

In his testimony, Mr. Moses stated, “The U.S. Army Corps of Engineers, after spending millions on research, issued a comprehensive Environment (sic) Impact Statement and developed the Final Regulatory Plan based on its findings.”

The Environmental Impact Statement is anything but comprehensive, for by no means did it address the entire length of the river.

The Environmental Impact Statement and the resulting Regulatory Plan concentrated on the lower thirty miles of the river and the immediate area around Topeka.

*Other categories of impacts that were identified but **not addressed** in the Plan include **aesthetics and recreation**.*

*Testimony before the interim Committee on Energy and Natural Resources in September of 1995 the Environmental Protection Agency stated that **a similar study should be completed for the remainder of the river** before further dredging is allowed to take place.*

note: The Environmental Impact Statement was completed in order to develop the Regulatory Plan. They cannot be viewed separately.

The Cost

Mr. Moses falsely stated, that the Regulatory Plan was developed after 20 years of study and at the cost of \$14 million dollars.

*According to Robert J. Smith, of the regulatory branch of the U.S.A.C.E., the scope of the regulatory plan was developed in 1977 and all studies for the EIS were completed in **twelve years**. The plan went into effect in 1990.*

*Mr. Smith also states that the cost of the studies and plan was "**almost \$1 million,**" not \$14 million as Mr. Moses claims.*

Bald Eagles

Mr. Moses erroneously stated that there is "...a nesting pair (of bald eagles) at almost every dredge on the river."

*This came as a surprise to Jerry Horvak, an Endangered Species Specialist with the Kansas Department of Wildlife and Parks. The truth is, there are only **four nesting pairs in the whole state of Kansas and the nests are located at reservoirs.***

*Bald eagles do winter over on the Kansas River and when the water freezes on the lakes and rivers, they will feed in areas where the water is moving and not frozen such as at Bowersock Dam in Lawrence, thus making it possible for them to catch fish . The eagles feed at this location because of the dam and has **nothing to do** with the dredging that occurs downriver.*

"...dredges provide better fishing."

Mr. Moses wrongly suggested dredging provides better fishing on the Kansas River, posing the question, "If commercial dredging is harmful to wildlife, then where are the impacts?"

According to Dr. Cynthia Annett, a KU professor specializing in fisheries management, statistics, and the ecology of large river systems, the argument that sand and gravel dredging benefits fisheries is flawed.

Only when dredgers remove sand faster than the rate of replenishment are fisheries diversified. This comes at a high cost to the river. That cost is due to the increased bank erosion, increased river channel gradient, and subsequent channel widening that occurs.

The most cost effective way to restore the biological integrity of the river is to maintain reaches in relatively undisturbed conditions.

“...pit operations...infeasible(sic)...”

Mr. Moses stated “pit operations in the Kansas River floodplain are economically or physically infeasible(sic), sand will have to be imported from a great distance and at a great expense.”

The river dredgers have changed their position.

On February 1, 1990, Mr. Moses testified before the Senate Committee on Assessment and Taxation:

“As pit operations are more cost effective, two river producers have already ceased river operations during the past year and have moved to pits.”

On any construction project, including large public works, the cost of sand is a negligible amount of a budget according to the Kansas Department of Transportation.

“...an ‘ongoing’ study...”

Mr. Moses doubts the sincerity of the Kansas Department of Wildlife and Parks in regard to their study for a recreational corridor on the Kansas River and questions the necessity to ban dredging in the study area until completion of the study.

The Kansas Department of Wildlife and Parks has begun a study of the Kansas River to determine the potential for economic development through public recreation.. This project has been initiated in cooperation with the Kansas Water Office and the Kansas River Basin Advisory Committee.

*If the river is degraded by sand dredging before KDWP has the opportunity to verify the feasibility of a recreational corridor, the outcome of the study will be **irrelevant**.*

“...negative affect on the recreational development...of the river...”

Mr. Moses wonders why “...such projects as the Oakland Expressway, current flood control projects, and water intake projects...” would be exempt from the moratorium.”

These necessary “projects” do not cut the river in half with sand pipes and steel braided mooring cables.

Dredging creates a deadly threat to boaters by stretching cables across the width of the river to secure their dredging platforms.

Dredging a river devours sandbars on which people recreate

“...friends of all the Kaw?”

Mr. Moses asks, “If they are really friends of the Kaw shouldn’t they be friends of all the Kaw?”

*We accept the challenge and urge Kansas River sand dredgers to be **Friends of the Kaw** too.*

Senator Lana Oleen, Chair
Committee on Federal and State Affairs
Kansas State Capital
Topeka, Kansas 66612

RE: Comments on Senate Bill No. 617

My name is Dr. Cynthia Annett and I am a University professor specializing in fisheries management, statistics, and the ecology of large river systems. I was formerly a Research Fisheries Biologist with the United States Fish and Wildlife Service working on the management of sportfish in large rivers. I am also the owner of a farm in Jefferson County on a tributary to the Kansas River.

The largest Blue Cats, weighing in over a hundred pounds, came out of the Kansas river earlier in this century. Now Blue Cats are seldom caught that reach even half this size. The State record Channel Catfish was caught on rod and reel from the Kansas River. Catfish used to be commercially fished from the Kaw. This is an important fishery, and a valuable resource to the State.

One third of the sport fishermen in the state of Kansas fish on rivers and streams. 60% of anglers in this country live in urban areas. Urban fisheries have been shown to reduce juvenile crime, increase property value, and provide real economic benefits to cities. While I worked in the State of Arkansas, the State legislature considered spending money on developing urban fishing programs rather than jails. The Kansas River flows through Manhattan, Topeka, Lawrence, and Kansas City. These are urban fisheries that have tangible benefits and should be protected and enhanced.

It has been said that sand and gravel dredging benefit fisheries. This is a flawed argument. The study conducted in the late 1970's by my predecessor, Dr. Frank Cross, did show a local increase in habitat diversity and hence in local fish species diversity in dredged areas of the lower Kaw below Bowersock dam in Lawrence. This was due to the exposure of coarse bottom substrates such as gravel and cobble. An area with a mixture of sand, gravel, and cobble habitats will have a higher species diversity. There is, however, a major flaw in using these results to promote dredging to benefit fish. The flaw is that coarse bottom substrates are only exposed when sand is removed faster than it is replenished.

If dredgers remove sand faster than the rate of replenishment, as has happened in both the Kansas City and Topeka areas, then the underlying cobble will be exposed. However, this is a dubious benefit because it comes at a high cost. That cost is due to the increased bank erosion, increased river channel gradient, and subsequent channel widening that occurs. According to reports by the Army Corp of Engineers, this is exactly the conditions that they are trying to avoid. These degraded conditions are not beneficial to the overall fish community in the Kansas River.

*Attachment 9
Senate Fed: State Affairs
2/14/96*

Dredging does not benefit the big Blue Cats and Channel Cats when they nest in the banks. Catfish dig caverns in banks for nest sites and remain in them for weeks to care for their eggs and young. Increasing bank erosion and destabilizing the channel will not help nesting catfish. Loss of shallow water habitats associated with sand bars will not help young catfish that seek these areas as nursery grounds.

We have already seen a loss of big Blue cats from the river. We have already lost at least seven species of fish from the Kansas River. These species depended upon river bottom habitats and are affected by the changes caused by dredging. We have already lost 9 species of mussels from the mainstem river.

Freshwater fish are the most vulnerable of the vertebrate species. We are facing the loss of one third of our freshwater fish fauna in this country, and about a third of freshwater fish in the world.

The Mississippi River Basin, of which the Kansas River is a part, has the most diverse temperate freshwater fish fauna in the world. The Kansas River alone used to contain almost 80 species of native fishes. The lower Mississippi drainage is the temperate freshwater fish equivalent of the tropical rain forest. And yet the Kansas River continues to suffer from human impacts, and is degraded to the point that it is considered one of the ten most endangered rivers in the United States.

Rivers with a high level of biological integrity provide humans with benefits that have tangible monetary value. The organisms living along the riparian zone and in the river act to purify the water, provide food and recreational opportunities, and help to stabilize the banks.

The most cost effective way to restore the biological integrity of the river is to maintain reaches in relatively undisturbed conditions. These reaches then act as a source of plants and animals to recolonize degraded areas. The river in Topeka and Kansas City will be improved by the organisms that live in the undisturbed reach above Lawrence. Without this source of colonists, we will see a continued degradation of the biological integrity of the entire river.

It is my professional opinion, after 15 years of research on large river fisheries issues, that there is no convincing evidence that the disturbances caused by dredging on the Kansas River will benefit the fisheries or the biological integrity of the river. Small scale local benefits are offset by long-term and large scale degradation. The Kansas River has important and valuable fish resources that should be weighed against any benefits achieved by opening new river reaches to degradation.

Sincerely,



Cynthia Annett, PhD
Assistant Professor, Fisheries



The University of Kansas

Kansas Biological Survey

February 14, 1996

Senator Lana Oleen, Chair
Committee on Federal and State Affairs
Kansas State Capital
Topeka, Kansas 66612

Chairperson Oleen, members of the Committee, my name is Edward Martinko. I am the State Biologist and Director of the Kansas Biological Survey. I would like to thank you for the opportunity to provide testimony regarding Senate Bill No. 617.

The recreational enjoyment of the Kansas River is intrinsically linked to the physical and biological health of the river system. The Fish, Wildlife and Recreation Section of the Kansas Water Plan, for example, states that "Although many flowing watercourses can be found in Kansas, only a limited number have significant potential for quality public recreation." The Water Plan goes on to establish safeguards for public health, aquatic and animal life, as well as flood control, water supply storage and recreation. Also, as you are probably aware, Governor Graves has designated the Kansas-Lower Republican as a priority area for water quality planning.

The biological diversity of a river is directly related to the diversity of physical habitats available. The greatest diversity of habitats is represented by a mosaic of mud flats, sand bars, point bars, gravel bars, riffles, and shallow water areas associated with these physical features. At any given location along the river, biological production is proportionally highest in these areas in that they provide habitats for at least 100 or more species of aquatic and semi-aquatic invertebrates, and feeding grounds, nesting and resting areas for a variety of birds, mammals, reptiles and amphibians that can number in the dozens of species depending on the time of year. The fish community uses shallow water habitats as spawning areas, nesting grounds, and refuge.

These considerations account for the fact that approximately 75% of the biodiversity of rivers is supported by this mosaic of habitats with the other 25% of the species living in deep water or open channel habitats. It is this rich biological diversity that provides recreationists with a rewarding experience.

Dredging causes a change in the morphology and hydrology of a river and, therefore, can have a significant effect on in-stream and near-stream habitats. The extent of effects depends on the rate of sediment removal and replenishment. If the rate of removal exceeds the rate of replacement, accelerated erosion occurs and continues until equilibrium within the system is restored. In-stream sand dredging can accelerate erosion of bed material in the vicinity of the dredging pit, causing gradual enlargement of the pit, and deepening and widening of the surrounding channel. The process continues until the hole created by dredging has become filled through a combination of new sediment entering the system and redistribution of substrate material.

The extent of the physical effects resulting from dredging is not easy to estimate. Since hydrology and sediment movement into and through the system are the primary factors regulating morphological process within rivers, anything that affects either or both of these factors will influence the morphological process. For example, dams probably exert the highest level of control over both hydrology and movement of material through our river systems. Land use practices have a significant degree of influence on the amount of sediment reaching rivers from terrestrial sources. Any evaluation of the physical effects resulting from dredging must, at some point, include an evaluation of these and other factors affecting river morphological processes. How the system has already been effected by other factors, including the effects of past dredging activities, must be considered.

Removal operations that cause damage to or loss of small sand islands, sand bars, point bars, mud flats, gravel bars and riffles can result in a cascade of effects throughout the biological community, since 75% of river biodiversity is dependant on these habitats. In extreme situations, bank erosion and sloughing also may occur, adding the dimension of riparian habitat loss as a

possible result of dredging. This not only affects the integrity of the biological system but also would diminish the natural aesthetics enjoyed by recreationists.

The impact on individual species or communities associated with riverine environments can be variable and difficult to predict. Some species are mobile and can migrate in the face of major environmental changes, while others are restricted and highly adapted to specific habitats with a limited ability to repopulate. The community's condition or health at the time habitat changes occur also can influence the magnitude of the impact and potential for recovery. A community suffering from an accumulation of impacts and already under stress may be unable to successfully respond to yet another habitat alteration. Unfortunately, habitat loss and/or alteration has been identified as a primary cause for dwindling populations of some species.

Even though the physical and biological effects of sand and gravel dredging cannot always be precisely predicted, dredging directly or indirectly impacts the most biologically diverse habitats in Kansas' river environments. Because the Kansas River provides exceptional recreational opportunities and provides the habitat that supports a rich diversity of fauna and flora, the State of Kansas should carefully consider limiting dredging to only those segments currently being mined.

Again, Senator Oleen, members of the Committee, thank you for the opportunity to provide testimony and I would be glad to answer any questions that you may have.

Respectfully submitted,



Dr. Edward A. Martinko

State Biologist and Director

Testimony by T.J. Hittle, Manhattan, KS. to the:
Kansas Senate Federal and State Affairs Committee

February 14, 1996

Economic, Educational, and Historic benefits along the Kansas river recreational corridor

Kansans all along the Kaw river corridor are poised at a *great moment in time*. The future of the Kansas river hangs in the hands of the Kansas Legislature.

The multimillion dollar economic benefits from recreation on and near a healthy, accessible, Kansas river are very clear. Some of these recreational benefits include:

- Sales of fishing, hiking, riding, camping supplies, and fishing permits
- Gasoline sales to and from the river accesses along its 162 river miles
- Groceries, restaurant meals, campgrounds, and motel rooms
- Boat and boating equipment sales
- The Kansas river recreational corridor can be a key part of tourism and the regional draw of the nearly 24.2 million recreational paddlers across the nation.
- According to the 1995 USDA National Survey on Recreation and the Environment (1), over 6.5 million paddlers live in the Midwest alone.

The educational benefits to our families, children, and schools of a recreational river corridor are many. Some of these recreational benefits include:

- Interpretive canoe trails with labels and guide maps that will lead us up and down the Kansas river valley.
- Educational one-day field trips and multi-day hiking, canoeing, and riding opportunities along the recreational river corridor.
- Ties into many existing and proposed City and County parks along the Kansas river.
- Great educational, cultural, and historic ties between the counties of Geary, Riley, Pottawatomie, Wabaunsee, Shawnee, Jefferson, Douglas, Leavenworth, Johnson, and Wyandotte counties through a series of public boat ramps and small boat accesses along the Kansas river.

The relationship of this legislation to the wildlife in the Kansas river riparian areas is obvious. This legislation will affect:

- The future health and numbers of migratory waterfowl along the Kansas river corridor
- The direct links to hunting, fishing, and wildlife non-consumptive uses.
- The future health and numbers of our national symbol, the Bald Eagle.
- Dredging has proven time and time again, its permanent, irreversible, and detrimental impact on wildlife, aquatic resources, river bank stabilization, and tree vegetation.

*Attachment 11
Senate Fed & State Affairs
2/14/96*

In my hands and soon to be entered in the Senate record, I have a petition to oppose river dredging along the Kansas river. This petition, with nearly 400 signatures, includes the support of teachers, doctors, lawyers, architects, physical therapists, nurses, housewives, business owners, and students all over Riley county.

In fact, there is ground swell of support all across Kansas.

The eyes of the 410,000 individuals and families that live along the Kansas river corridor, along with the many businesses that will benefit, are watching. We are not afraid to take a stand. We cannot tell future generations of Kansans that we failed to protect the Kansas river, we failed to make our river accessible to future generations. The time to act is NOW. Thank you.

END

Thomas J. (T.J.) Hittle
700 Gillespie Drive
Manhattan, KS. 66502

voice: 913/539-7772
fax: 913/539-6050

kawtest2.doc

(1) 1995 National Survey on Recreation and the Environment by the United States Dept. of Agriculture

Testimony Presented to The Senate Committee on
Federal and State Affairs, February 14, 1996

By
Mark Maher for

Citizens for the Future of Jefferson County
and for
Friends of the Kaw

Thank you for allowing me to speak to you this morning as a proponent of Senate Bill 617. I support any legislation which would delay or prohibit commercial sand dredging from previously unmined reaches of the Kansas River for a variety of reasons. Today I will identify some flaws in the monitoring process after briefly outlining but one practical reason for limiting commercial sand dredging production and for monitoring dredging practices in the first place.

The United States Army Corps of Engineers documented the financial loss suffered by non-dredging business interests and public utilities in the lower reaches of the Kansas River over ten years ago. They concluded that the dredging industry caused hundreds of thousands of dollars of uncompensated cost to be born by stockholders, utility ratepayers, and taxpayers dependent on services provided by railroads and water, sewer, and drainage districts. Although not formally calculated by the Corps, additional hundreds of thousands of dollars were lost by Kansas River Valley land owners who suffered accelerated bank erosion triggered by river bed degradation due to excessive extraction practices employed by their neighbors, the dredgers. The extent of the bed degradation and bank erosion was well documented. Much of the bed in the lower reach had degraded an average of 8 to 15 feet by the mid-eighties. I am supplying a copy of a 1988 report by the USACE summarizing potential impacts from continued dredging below Lawrence and in the Topeka reach in 1988 dollars. You can see that even an additional 1 to 2 feet of bed degradation would cost well over a million dollars to the already mentioned service providers. The Corps concluded that even the reach between Lawrence and Topeka was apt to degrade a foot every ten years without any mining activity below existing operations in Topeka or above the one in Lawrence.

The Corps, based on the findings of multiple studies undertaken in the 1970's and 1980's, concluded that bed degradation and financial loss to other river users could be mitigated to an acceptable level as long as the industry kept production within defined annual and geographic limits.

Because production limits are critical to the regulations' effectiveness and to the protection of non-dredging interests, a prudent person might logically assume that one or more of the several regulatory agencies involved in permitting the dredging companies would periodically audit or otherwise review

*Attachment ~~12~~ # 12
Senate, Federal & State Affairs
2/14/96*

the industry's production reports with the intent of verifying the information received. Imagine my surprise last spring when I was told by the USACE that they weren't worried that a dredger would underreport because his report form to KDOR requires him to "certify" that the information supplied (tonnage withdrawn and tonnage sold subject to royalty collection) is true. Therefore, they would be in big trouble if they didn't tell the truth. Imagine my additional surprise when I learned that KDOR had no quality control review in place to verify the production reports, nor had they conducted random audits of the dredging companies during the 90's as far as anyone there could remember. The report forms are routinely incomplete when submitted, in violation of KDOR regulation 92-9-6a.

I began to collect my own data almost a year ago, directly from KDOR and indirectly from USACE. Curiously, KDOR will not release permit specific detail, only industry-wide or river-wide totals, while the USACE releases detail permit by permit. It should interest everyone in this room to know that the dredgers' production reports to USACE and to KDOR reveal 77% of all sand taken from the Kansas River between 1991 and 1995 (KDOR 1995 total is known, USACE 1995 total is a very close estimate) was for private use, and only the remaining 23% was available for public works use. The highest annual public works share during those five years was 35% in 1992. If you will turn to the graphs and the numerical summary sheet right behind them you can see that the volume available for public works use during the last two report years is less than 15% of the total market share.

The first graph illustrates the Kansas and Missouri Rivers' comparative sand production totals for reaches of similar length anchored in the KC Metro area. The population on the Missouri side is +/- 10% greater than that on the Kansas side along the respective reaches. In 1994 Kansas River dredgers reported mining almost 2.7 million tons to the USACE. The producers in Missouri reported 3.2 million tons the same year dredged from a reach of approximately the same length from St. Joseph south through Kansas City and east to mid-state.

The next five graphs plot each year's production report totals for the Kansas River following the implementation of the USACE monitoring plan. The top three bars on each page show information "as is." The bottom three bars reflect what the total tonnage removed per year would be assuming: (1) the dredgers' reports to KDOR are accurate with regard to tonnages subject to royalty collections; (2) the public works share compared to private sales share is approximately 75/25 and; (3) an insignificant amount of sand meeting market demand in the region on both sides of the border is produced from pit mines. (I doubt, after speaking with professionals in Kansas and Missouri, if pit mines meet even 10% of the market demand along the corridor). The dashed vertical line approximates the maximum tonnage that could be taken by all active permit holders in a single year in accordance with the monitoring plan.

12-2
#2-2

The director of the Kansas Aggregate Producer's Association has repeatedly cited anywhere from 75% to 85% as a rough estimate of the public works market share of Kansas River Valley sand consumption, the opposite of what his clients have reported month after month, year after year (75/25 vs. 23/77). Why have they not corrected him? Why has the USACE not corrected him? Why hasn't he corrected himself? Why hasn't he corrected elected officials and KDOR staff who cited the high percentages in his presence during hearings in September and October, and yet again before the House ENR Committee two weeks ago? I can only assume that no one has corrected him because either what he says is true, or the Corps, his clients, or KDOR uniformly lack sufficient data to refute his figures. If so, it is clear to me that we must assume that the industry has been exceeding their permitted maximums not by a fraction of the total but by multiples of the total.

The Corps wrote in November, 1995: "Several (3 or 4) sets of data (including aerial photography, channel cross section surveys, and water surface elevation measurements) must be collected and compared with the baseline data before reliable and meaningful conclusions can be derived concerning dredging impacts." The baseline data was received in full late in 1993, almost two years behind schedule. The first set of follow-up data is only now being evaluated. It will take five to seven more years for the Corps to compare 3 or 4 sets with the baseline. I don't think we can afford to wait that long. Until the conflicting information is resolved beyond a reasonable doubt, it would be irresponsible for the trustees of this public resource to continue to abrogate all responsibility for its protection to those who are unwilling or unable to act as responsible caretakers.

Please refer to my letter to Congressman Brownback dated February 7, 1996 for additional detail regarding contradictory production reports.

Please refer to the USACE response to my query to Congressman Brownback dated November 1, 1995 for a brief summary of the monitoring plan's timeline.

I enclose "A Geometric Perspective of Hydraulic Sand Dredging Impacts in the Kansas River" to give you a tool to assist in the visualization of the quantities of sand being removed from local sites in one and five year time frames.

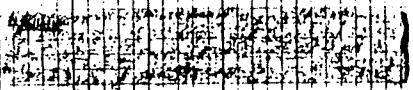
Also enclosed are: a KDOR report of Kansas River sand production figures for 1964-1987; an informational page prepared by KDOR for the Joint Interim Committee on Energy and Natural Resources last September, copies of KDOR regulations pertaining to sand dredging reporting and royalty exemptions; and the USACE Summary of Potential Impacts from Continued Dredging (1988).

12-3
#3

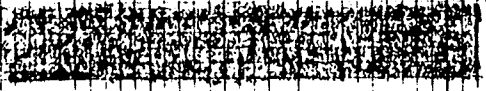
MILLION TONS OF SAND OREGED PER YEAR

1 2 3 4 5 6 7 8 9 10

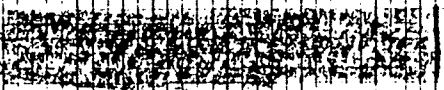
AS REPORTED BY PRODUCERS TO USACE



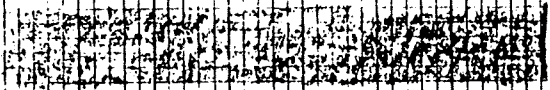
KANSAS RIVER K.C. → JUNCTION CITY, 120 miles



MISSOURI RIVER ST. JOSEPH → 120 miles E. & S.



KANSAS RIVER K.C. → JUNCTION CITY



MISSOURI RIVER ST. JOSEPH → 120 miles EAST AND SOUTH

Note Well: The Public Works/Private Works Five Year Average Ratio Based On Industry Reports To USACE and KDOR Is 23/77. The Industry Continues To Make Statements To The Public And To State Legislators That The Ratio Is 75/25. If 75/25 Is True, Then The Northeast Kansas Public And Private Sand Consumers Are Buying All The Sand Mined From Both The Kansas And Missouri Rivers Within A 120 Radius Of Kansas City (Assuming The Industry's Production Reports To The USACE For 1994 and 1995 Are True), And Importing Sand From Elsewhere To Meet The Shortfall.

12/4

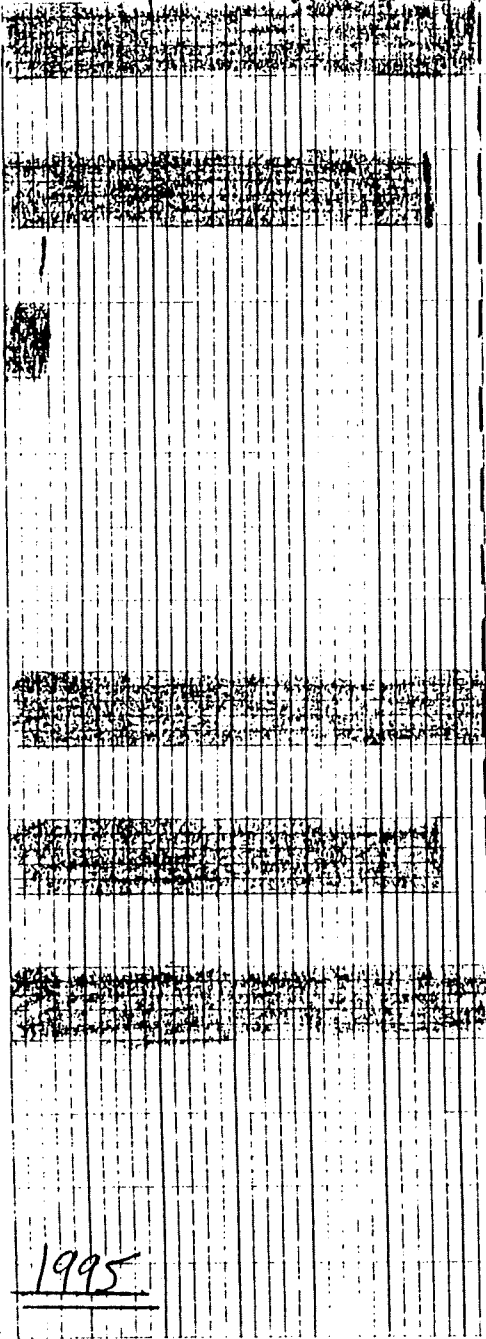
1994 - TOP

1995 - BOTTOM

C. PRUDENT ESTIMATE DATA DUE 1/31/96

MILLIONS OF TONS OF SAND/YEAR

1 2 3 4 5 6 7 8 9 10 11 12



Top Blue Bar = Total Tonnage Reported To The USACE By Producers

Top Orange Bar = Total Tonnage On Which Royalties Paid = Private Works

Top Green Bar = Blue Minus Orange = Public Works Tonnage

Dashed Vertical Line Represents The Production Limit Per USACE Permits

Bottom Blue Bar = Tonnage Reportable To USACE If The Industry's Stated 75/25 (Public Works/Private Works) Consumption Ratio Is Roughly Accurate

Bottom Orange Bar = Same As Top Orange Bar = Totals Reported to KDOR On Private Works Sand Consumption

Bottom Green Bar = Blue Minus Orange = Public Works Tonnage If The Industry's Stated 75/25 (Public Works/Private Works) Consumption Ratio Is Roughly Accurate

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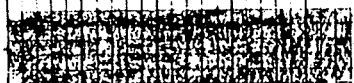
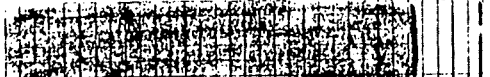
1995

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S
11

1 2 3 4 5 6 7 8 9 10 11 12

MILLIONS OF TONS OF SAND PER YEAR

1 2 3 4 5 6 7 8 9 10 11 12



Top Blue Bar = Total Tonnage Reported To The USACE By Producers

Top Orange Bar = Total Tonnage On Which Royalties Paid - Private Works

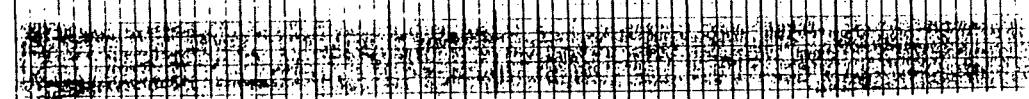
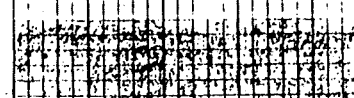
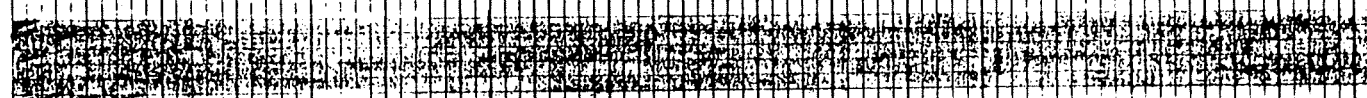
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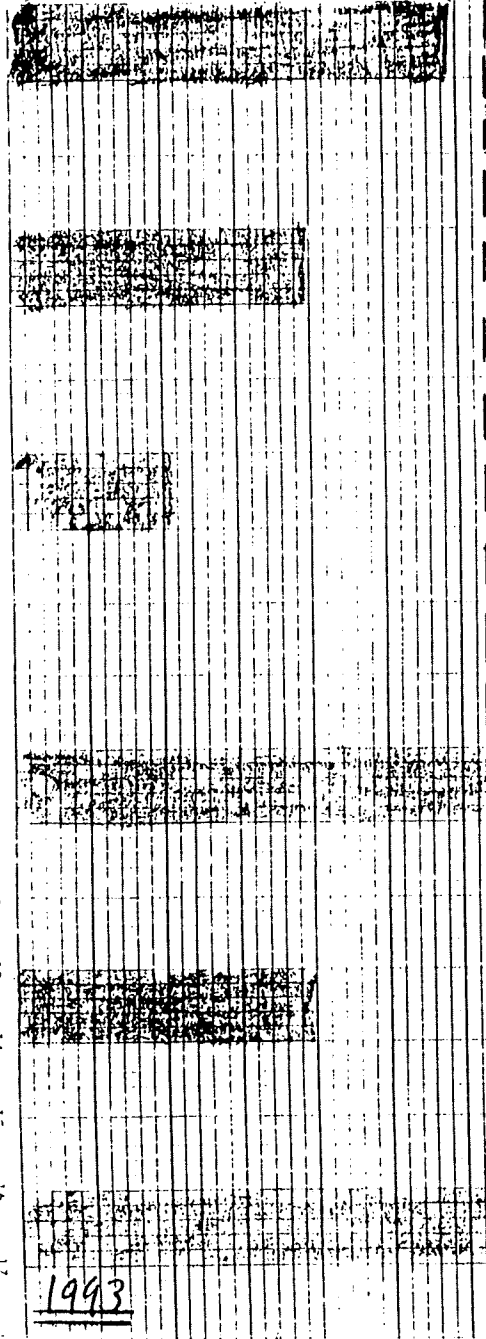
12-6

1994

1 2 3 4 5 6 7 8 9 10 11 12

MILLIONS OF TONS OF SAND PER YEAR

1 2 3 4 5 6 7 8 9 10 11 12



Top Blue Bar = Total Tonnage Reported To The USACE By Producers

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Top Green Bar = Blue Minus Orange = Public Works Tonnage

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1993

12-7

MILLIONS OF TONS/YEAR

1 2 3 4 5 6 7 8 9 10 11 12

Top Blue Bar = Total Tonnage Reported To The USACE By Producers

Top Orange Bar = Total Tonnage On Which Royalties Paid = Private Works

Top Green Bar = Blue Minus Orange = Public Works Tonnage

Dashed Vertical Line Represents The Production Limit Per USACE Permits

Bottom Blue Bar = Tonnage Reportable To USACE If The Industry's Stated 75/25 (Public Works/Private Works) Consumption Ratio Is Roughly Accurate

Bottom Orange Bar = Same As Top Orange Bar = Totals Reported to KDOR On Private Works Sand Consumption

Bottom Green Bar = Blue Minus Orange = Public Works Tonnage If The Industry's Stated 75/25 (Public Works/Private Works) Consumption Ratio Is Roughly Accurate

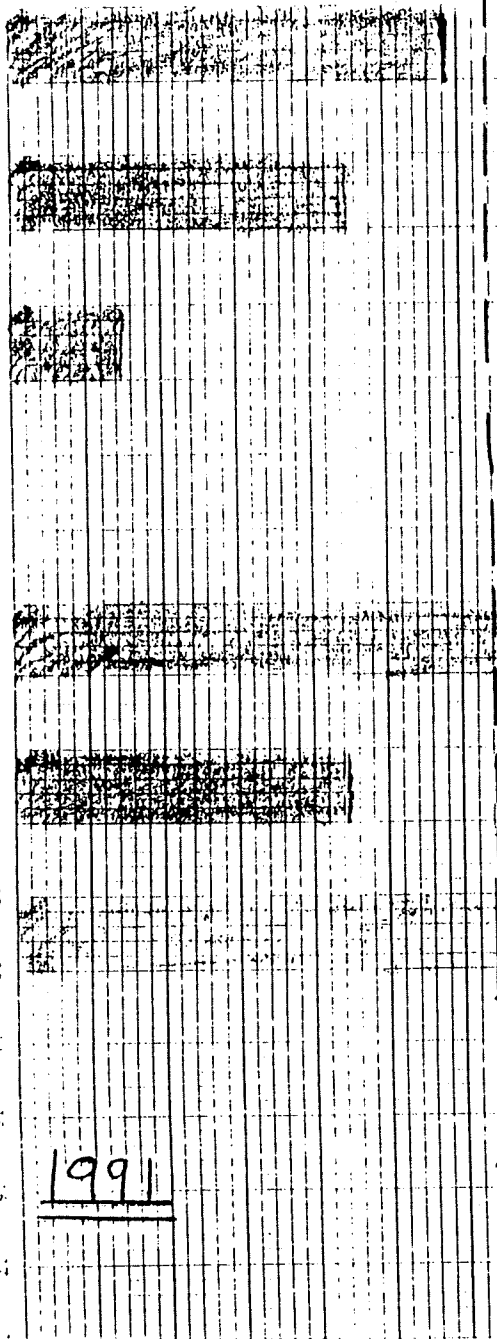
Note Well: The Public Works/Private Works Five Year Average Ratio Based On Industry Reports To USACE and KDOR Is 23/77. The Industry Continues To Make Statements To The Public And To State Legislators That The Ratio Is 75/25. If 75/25 Is True, Then The Northeast Kansas Public And Private Sand Consumers Are Buying All The Sand Mined From Both The Kansas And Missouri Rivers Within A 120 Radius Of Kansas City (Assuming The Industry's Production Reports To The USACE For 1994 and 1995 Are True), And Importing Sand From Elsewhere To Meet The Shortfall.

12-8

1992

MILLIONS OF TONS OF SAND/YEAR

1 2 3 4 5 6 7 8 9 10 11 12



Top Blue Bar = Total Tonnage Reported To The USACE By Producers

Top Orange Bar = Total Tonnage On Which Royalties Paid = Private Works

Top Green Bar = Blue Minus Orange = Public Works Tonnage

Dashed Vertical Line Represents The Production Limit Per USACE Permits

Bottom Blue Bar = Tonnage Reportable To USACE If The Industry's Stated 75/25 (Public Works/Private Works) Consumption Ratio Is Roughly Accurate

Bottom Orange Bar = Same As Top Orange Bar = Totals Reported to KDOR On Private Works Sand Consumption

Bottom Green Bar = Blue Minus Orange = Public Works Tonnage If The Industry's Stated 75/25 (Public Works/Private Works) Consumption Ratio Is Roughly Accurate

Note Well: The Public Works/Private Works Five Year Average Ratio Based On Industry Reports To USACE and KDOR Is 23/77. The Industry Continues To Make Statements To The Public And To State Legislators That The Ratio Is 75/25. If 75/25 Is True, Then The Northeast Kansas Public And Private Sand Consumers Are Buying All The Sand Mined From Both The Kansas And Missouri Rivers Within A 120 Radius Of Kansas City (Assuming The Industry's Production Reports To The USACE For 1994 and 1995 Are True), And Importing Sand From Elsewhere To Meet The Shortfall.

10-9

1991

**Total Tonnage
for the Kansas
River Reported
to the USACE:**

**Tonnage Subject
to KDOR
Royalty
Assessment:**

**Balance,
Subject to the
Royalty
Exemption:**

**1991 2,995,262
1992 2,855,898
1993 2,916,094
1994 2,697,723
1995 Data Yet
to be
Submitted**

**2,240,415
1,847,340
1,946,301
2,301,439
2,860,243**

**754,847
1,008,558
969,793
396,284
Under .4
Million Tons
by Estimate**

**Assuming KDOR
Totals are True
and Industry's
75/25 Stated
Ratio of Public
to Private Use
Is Roughly
Accurate, Then
the Royalty
Exempt Tonnage
and Total Tons
Reported to the
USACE Should
Read as Follows**

**1991 8,961,660
1992 7,384,360
1993 7,785,204
1994 9,205,756
'95 11,440,972**

**Maximum
Allowable
Production per
Year According
to USACE
Permit Limits
Was +/-
3.1 Million Tons**

**6,721,245
5,542,020
5,838,903
6,904,317
8,580,729**

12-10
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February 7, 1996

Mark Maher
Rt. 1 Box 333
Perry, KS 66073

Congressman Sam Brownback
612 S. Kansas Avenue
Topeka, KS 66603

Dear Sir:

Thank you so much for your prompt response to my inquiry of 11/1/95 regarding the implementation of the US Army Corps of Engineers Regulatory Report and Monitoring Plan for commercial sand dredging on the Kansas River. As I recall, I received answers to the eight questions posed therein within ten days.

I have yet to receive a written response to my written questions and cautions directed to the attention of the Corps' Kansas City District's regulatory branch in letters dated 4/30/95, 5/24/95, 5/25/95, and 6/14/95. At this time I am seeking answers to but a few of the questions they have left unanswered over the past eight to nine MONTHS. Dr. Cavin of the KCD led me to believe last May that I might expect a written response in the following month or two; his employee, Robert Smith told me almost four months ago that he hoped to have written responses out by year's end or shortly thereafter. I do not for a minute believe these gentlemen fail to work in excess of 40 hours a week for 40 hours' pay, but I am growing increasingly distressed about their failure to publically address issues I and others have raised.

Please find enclosed: copies of my last letters to the Corps dated 5/25/95 and 6/14/95, my testimony to the Kansas Joint Interim Committee on Energy and Natural Resources dated 10/17/95, my testimony to the House Committee on ENR dated 2/1/96, a summary sheet of sand production totals for 1991-1995 with analysis, five graphs illustrating those figures, and a sixth graph charting 1994 production figures for the Kansas River and a similarly long reach of the Missouri with my own estimate of 1995 industry report totals. After I had multiple interviews with representatives of the sand dredging industry and line and management staff at KDOR between 3/95 and 2/96, and several telephone calls with staff at the K.C. District Office of the USACE between 5/95 and 2/96, it is apparent to me that no one other than myself has ever bothered to subtract the industry's reportable tonnage to KDOR from their reported tonnage to the USACE and relate the balance to regional or national norms for public works sand consumption.

I was alarmed by the Corps' answer to question 7 from my query of 11/1/95:..."At this time we have no reason to believe

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that the submittals provided by the producer companies are incorrect." Why should I be alarmed? Because in my letters to the Corps dated 5/25/95 and 6/14/95 I addressed the grossly apparent inconsistency in the producer companies' reports to the USACE and KDOR and their association director's repeated statement that public works projects consume approximately 80% of the dredging industry's output from the Kansas River. Moreover, I raised this issue in community meetings (dredging representatives in attendance) in Jefferson County last spring and summer and in written testimony this past fall before the Kansas Legislature's Joint Interim Committee on Energy and Natural Resources and again last week to the House Committee on Energy and Natural Resources.

Last May the industry association's director used 80% as the figure best approximating public works projects' share of total sand consumption. He let the same figure stand during the September and October Interim Committee Hearings. By the current round of hearings (2/96) he had reduced the public works sand consumption value to 75% of the total mined. However, a review of the summary production and royalty payment reports for the most recent 5 years (that is, during the life of the USACE monitoring plan) reveals something very different. What we find are numbers that show a 5 year average of 77% NON-PUBLIC WORKS CONSUMPTION and 23% PUBLIC WORKS CONSUMPTION. In fact, since January 1994 the public works portion of the total has stayed BELOW 15%.

Is there any incentive for the industry or unethical members of the industry to underreport their production totals to the USACE? Of course there is, because their permits to operate on the Kansas River are subject to revocation if the producers fail to abide by the terms of the Final Regulatory Report. A key provision of the Report and Monitoring Plan is that all permit holders must not exceed a specified total tonnage of sand extraction per year within their respective permit areas or river reaches. By adding the maximum annual production limits of all active Kansas River permit sites, we find an annual production limit very close to three million tons. Yet, if the public works portion had been only 25/75 in 1994 instead of 15/85 (as documented by the dredgers tonnage reports to KDOR and USACE), one or more producers would have been in violation of their permits. Had the public works portion even approached 40% of the industry's 75% figure over the last five years, the industry would have been operating in gross violation of their permits.

As you can see from the enclosed tonnage report sheet and illustrative graphs for 1991-1995, individual producers, and/or most producers, and/or their association director have been deceiving the USACE regulators, and/or the Kansas Department of Revenue, and/or our elected representatives. Somebody is being lied to repeatedly.

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It is time to find out: who is lying to whom, why they feel they can do so with impunity, and what the regulatory agencies plan to do to about it?

1) What action did the USACE regulatory staff take upon receipt of my letter dated 5/25/95 in which I stated that: public works consumption based on KDOR receipts and USACE permit maximums computed to 26.6% of the total tonnage reported mineable under permit restrictions for the years 1990-1994, while the industry representative was telling the public his clients were selling 80% +/- of their inventory to meet public works demand? Please supply documentation of their action; what did they do, when did they do it, and what conclusions did they draw?

2) Did regulators at USACE evaluate the apparent sand consumption/person discrepancy between the rapidly growing Northeast Kansas Region and Southwest and Southcentral Regions as I described in my letter of 5/25 using sand mining production figures submitted by the producers to the U.S. Bureau of Mines? Please provide documentation of their findings; what was their assessment of the facts as presented, when did they make it, and did they attempt any fact-finding or follow-up analysis of their own?

3) Please refer to my second paragraph on page 4 of the June 14, 1995 letter to the USACE, beginning "Upon third and fourth readings..." Again I warned that royalty exempt tonnage should exceed non-exempt tonnage by a factor of 100-300% over time. Furthermore I called to their attention the apparent fact that all references to historical extraction rates in the USACE Final Regulatory Report and EIS of 1/90 reflected only the tonnage subject to royalty payments as recorded by KDOR. Yet, the State of Kansas sand royalty exemption provision is clearly noted in the regulations to have become effective on 1/1/66, 24 years before the publication of the Corps' review of industry practices and impacts. These regulations were obviously available to USACE and their contracted engineering firms during the years of their study, but nowhere in the publication was the exemption mentioned. What action did the regulatory staff take upon review of this information? When did they review it? Why would they have no cause to believe dredgers might be underreporting their production in light of this information and their thoughtful analysis of the implications thereof?

4) On September 12, Robert Smith (the regulator in charge of Kansas River permits and the USACE employee most responsible for writing the Final Regulatory Report), his supervisor Dr. Lawrence Cavin (an EPA employee at the time the Regulatory Report and EIS was undergoing public review, he contributed considerable written comment regarding revisions suggested by industry and Corps' officials), and Dr. Cavin's supervisor were all present when the Director of KDOR's research and statistical analysis branch presented oral and written testimony to the Joint Interim Committee on Energy and Natural Resources about

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her agency's collection of production data submitted by the dredging industry. She reported the amount of royalty payments received per year, the tonnages reflected by the payments, and the nearly insignificant amount of the funds set aside for the clerical expense of administering their receipt and disbursement. (During the Corps' Public Hearing in May, 1995 in Perry I warned the Corps that KDOR was not auditing or otherwise verifying sand royalty reports). The Committee Chairman, Representative Carl Holmes, at least once during the hearing, cited 80% as the public works's proportion of sand consumption, and I believe one or more of his associates did likewise through the day-long hearing which ended with USACE testimony. Did any of the three gentlemen from USACE consider this to be an opportunity to collect information about sand production totals from KDOR? If they had information from research of their own (following my letters of 5/25 and 6/14 and at least one phone call from me on the topic) which proved the 80% figure erroneous or a misrepresentation of demand and supply facts, why did they keep silent on the matter?

4) Producers and their association director have been quick to say Kansas River Valley market demand has had to rely on (new) Missouri River sand production following the restrictions imposed on the Kansas River dredging industry by the USACE. 1994 was the first year USACE collected sand dredging production data from Missouri River dredgers (see the first of the six graphs). Last summer the regulator in charge of Missouri River permits gave me site totals for that year over the telephone for those producers from St. Joseph to a point 120 miles south and east through Kansas City and close to the center of the state...a reach almost equal in length of the Kansas River from Kansas City to Junction City. Production totals were approximately 3.2 million tons, compared to 2.7 million tons reportedly dredged from the Kaw the same year. The population of the counties along the Missouri reach is easily 10% greater than that of those along the Kansas reach. What are the 1995 production totals for the Kansas River (due from the producers to the Corps by 1/31/96 according to the FRR)? What are the production totals for 1995 for the Missouri River from St. Joseph to a point roughly 120 miles downriver? What might lead the USACE to believe that there is so much less demand in the KC Missouri Metro area (and in areas up and down that river) that Missouri River sand is contributing the millions of tons per year necessary to meet the alleged public works demand cited repeatedly by representative of the industry?

I held a telephone conversation with Smith, Cavin, and Linnés (?) of the Corps on the morning of 2/2/96. I reviewed the points covered above and told them that they should expect a formal request for this information through your office in the very near future. As you are no doubt aware, timely receipt of their response is essential because a number of bills are now being considered by the Kansas Legislature on Kansas River issues. I have also initiated a request (individually and

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through a member of the State House) for KDOR's compliance division to investigate the matter. They may or may not have the time to complete such work before the end of the current Legislative session.

I want to say again how much I appreciated your office's immediate acknowledgement of my November query, as well as the Corp's similarly prompt response.

Sincerely yours,

Mark Maher for:

Citizens for the Future
of Jefferson County
Rt. 1 Box 333
Perry, KS 66073

Friends of the Kaw
c/o Eileen Larson
2043 E 1250 Road
Lawrence, KS 66044

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EXHIBIT I

KANSAS DEPARTMENT OF REVENUE - PLANNING AND RESEARCH

KANSAS SAND* PRODUCTION TONNAGE			
CAL YEAR	KANSAS RIVER	STATEWIDE TOTAL	KS. R. % OF TOTAL
1944		42,118.79	0
1945		41,990.00	0.00%
1946			#DIV/0!
1947		656,216.55	0.00%
1948		816,900.77	0.00%
1949		823,630.81	0.00%
1950		988,455.32	0.00%
1951		942,008.84	0.00%
1952		1,351,111.09	0.00%
1953		1,712,332.86	0.00%
1954		1,869,857.43	0.00%
1955		1,974,413.86	0.00%
1956		2,004,399.15	0.00%
1957		1,681,392.15	0.00%
1958		1,989,968.33	0.00%
1959		2,261,622.47	0.00%
1960		1,722,830.22	0.00%
1961		1,818,335.51	0.00%
1962		1,957,846.06	0.00%
1963		2,290,718.40	0.00%
1964	2,473,503.57	2,605,225.78	94.94%
1965	3,335,996.27	3,456,384.21	96.52%
1966	3,329,994.66	3,461,687.00	96.20%
1967	2,791,048.64	2,972,580.23	93.89%
1968	3,291,103.43	3,425,657.53	96.07%
1969	3,097,914.85	3,221,945.21	96.15%
1970	3,376,832.36	3,454,608.86	97.75%
1971	3,633,055.00	3,722,010.50	97.61%
1972	3,580,797.50	4,490,886.50	79.73%
1973	3,931,633.00	4,034,010.00	97.46%
1974	3,090,328.50	3,226,212.50	95.79%
1975	2,120,490.25	2,214,891.57	95.74%
1976	2,679,021.28	2,800,921.31	95.65%
1977	2,636,494.74	2,821,711.06	93.44%
1978	3,211,768.05	3,342,306.65	96.09%
1979	3,711,746.31	3,746,584.59	99.07%
1980	2,965,050.14	2,995,397.75	98.99%
1981	2,309,686.66	2,363,120.30	97.74%
1982	2,163,309.80	2,202,067.83	98.24%
1983	2,590,644.46	2,638,156.90	98.20%
1984	3,478,249.36	3,568,748.26	97.46%
1985	3,738,164.70	3,792,631.30	98.56%
1986	3,670,067.52	3,718,189.01	98.71%
1987	4,059,492.26	4,089,344.53	99.27%

* INCLUDES SAND ONLY

J.P. 8-16-88

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~~12-17~~

Kansas Department of Revenue
Sand Royalty
September 12, 1995

Sand Royalty Rate History

- The sand royalty rate, authorized by K.S.A. 70a-101 et seq., was set by administrative regulation at 2¢/ton in the 1920s.
- An increase in the sand royalty rate from 2¢/ton to 15¢/ton was recommended by Governor Mike Hayden in the FY 1988 Governor's Budget Request (State of Kansas Budget, FY 1988, Vol. 1, page 1-153).
- The Department of Revenue held a public hearing on the proposed rate increase from 2¢/ton to 15¢/ton on Monday, April 17, 1989. Notice of the hearing appeared in the Kansas Register (Vol. 8, no. 11, March 16, 1989, p. 360).
- The regulation proposing the rate increase from 2¢/ton to 15¢/ton was approved by the Attorney General.
- The regulation with the rate increase was published in the Kansas Register (vol. 8, no. 20, May 18, 1989, p. 751).
- Sand companies on file with the Department were notified of the increased rate, effective November 1, 1989, to be reflected in payments due on and after December 1, 1989, for FY 1990.
- The 1990 legislature set the sand royalty rate by statute at 8¢/ton, effective July 1, 1990 for FY 1991 (1990 Session Laws, Ch. 250, 1990 Senate Bill 471.amendment to K.S.A. 70a-102).
- Note: K.A.R. 92-9-8 exempts from tonnage charges sand that is sold to state or municipal agencies. The exemption does not apply unless the chief engineer of the Kansas Department of Transportation or the chief engineer of a municipal corporation indicates that the sand has been received. K.S.A. 70a-102 exempts sand used for public use.

Receipts and Distribution

Fiscal Year	Sand		Net Receipts	Distribution		
	Royalty Receipts	KDOR Expense		Drainage Districts	Counties	State General Fund
1991	\$180,641	\$14,359	\$166,282	\$32,874	\$50,267	\$83,141
1992	\$159,625	\$14,086	\$145,538	\$26,127	\$46,642	\$72,769
1993	\$159,168	\$14,484	\$144,684	\$25,587	\$46,755	\$72,342
1994	\$203,278	\$23,955	\$179,323	\$43,813	\$45,849	\$89,661
1995	\$273,242	\$26,999	\$246,243	\$61,331	\$61,790	\$123,123

Production

Fiscal Year	Estimated Tons @ 8¢	Percent Change	Number of Active Permit Sites	Drainage Districts	Counties	Number Rivers
1991	2,258,012		12	6	10	2
1992	1,995,312	-11.6%	12	6	10	2
1993	1,989,600	-0.3%	12	6	10	2
1994	2,540,975	27.7%	14	8	11	3
1995	3,415,525	34.4%	15	8	11	3

92-3-19. (Authorized by K.S.A. 41-2717; implementing K.S.A. 41-2705(b)(1)(D); effective May 1, 1985; revoked May 1, 1987.)

92-3-20. Regulations that apply to CMB distributors who sell wine. Any cereal malt beverage distributor licensed pursuant to K.S.A. 41-2713 who stores and sells wine pursuant to L. 1985, Ch. 168, Sec. 5, shall be subject to, and shall comply with, the following regulations: K.A.R. 13-2-1 through K.A.R. 13-2-15, inclusive; K.A.R. 13-5-2; K.A.R. 14-1-1; K.A.R. 14-2-1; K.A.R. 14-2-2; K.A.R. 14-2-4; K.A.R. 14-2-5; K.A.R. 14-2-6; K.A.R. 14-2-9 through K.A.R. 14-2-23, inclusive; K.A.R. 14-4-1; K.A.R. 14-4-3; K.A.R. 14-4-4; K.A.R. 14-4-6 through K.A.R. 14-4-23, inclusive; K.A.R. 14-4-26; K.A.R. 14-6-6; K.A.R. 14-7-1; K.A.R. 14-7-4; K.A.R. 14-7-6; K.A.R. 14-8-1; K.A.R. 14-8-2; K.A.R. 14-8-6 through K.A.R. 14-8-13, inclusive; K.A.R. 14-9-1 through K.A.R. 14-9-10, inclusive; K.A.R. 14-10-1a through K.A.R. 14-10-4, inclusive; K.A.R. 14-17-1; K.A.R. 14-17-2; K.A.R. 14-17-4. (Authorized by K.S.A. 79-3835; implementing L. 1985, Ch. 168, Sec. 5; effective May 1, 1986.)

Article 9.—MINERALS AND NATURAL PRODUCTS LEASES ON NAVIGABLE STREAM BEDS

92-9-1. Bidders; notice; form of bids. Legal notice to bidders for oil and gas lease land in navigable stream beds will be published in a paper of general circulation in the county in which the lands subject to oil and gas leases are situated once each week for a period of thirty days. The director of revenue will accept the highest and best bid from a responsible bidder, reserving the right to reject any and all bids and readvertise. Separate sealed bids accompanied by a certified check or bank draft in the amount of the bid payable to the director of revenue, state of Kansas, for each tract must be submitted on forms supplied by the department of revenue and filed with the director of revenue, state office building, Topeka, Kansas, in accordance with the publication notice concerning said bids. The bidder has the right to bid on all or any portion of the lands set forth in the publication notice and the successful bidder agrees to pay publication costs; except that the above and foregoing regulation shall apply only to the removal of oil and gas from navigable stream beds. (Authorized by K.S.A. 71-102, 71-103; effective Jan. 1, 1966.)

92-9-2. Cash bonus; rental. Bids for the leasing of oil and gas rights in navigable streams will be considered on the basis of a cash bonus, annual delay rental, and the amount of royalty to be paid shall not be less than 12½% of the gross proceeds at the prevailing market rate. Leases will be executed on a standard Kansas lease form. No lease shall be for a period longer than five years and the lessee shall agree to pay an annual rent in advance on land so long as drilling is delayed. (Authorized by K.S.A. 71-102, 71-103; effective Jan. 1, 1966.)

92-9-3. Survey; expense of. If the lessee of oil and gas rights requests a survey, the director of revenue may authorize such survey, in which event the lessee agrees to pay the cost thereof, and such survey shall be used to determine the acreage. In lieu thereof, the United States government survey or other official survey of said tract may be used. (Authorized by K.S.A. 71-103, 71-106; effective Jan. 1, 1966.)

92-9-4. Wells; operation and management. Oil and gas lessees shall furnish the director of revenue on demand accurate and reliable information concerning wells situated in Kansas. On demand lessees agree to furnish certified copies of pipeline runs to the director of revenue. Title requirements and leases shall be without covenants of warranty. (Authorized by K.S.A. 71-102, 71-103; effective Jan. 1, 1966.)

92-9-5. Location of operations. The lessee agrees to notify the director of revenue and obtain permission from said director prior to commencing operations on any navigable stream bed. (Authorized by K.S.A. 71-102, 71-103; effective Jan. 1, 1966.)

92-9-6. (Authorized by K.S.A. 70a-102, 70a-103; effective Jan. 1, 1966; amended Jan. 1, 1974; revoked July 3, 1989.)

92-9-6a. Returns; rates and restrictions. (a) On or before the 15th day of each month, each lessee shall file a return with the director stating the amount of material withdrawn, returned, stored and sold, and the name of the person(s) to whom the material was sold during the preceding month. The lessee shall remit with the return 15¢ per ton for all river sand sold during the preceding month. Each lessee shall maintain this information for a period of two years.

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(b) Each lessee shall not take, move or remove material from any navigable stream within:

- (1) 500 feet of any bridge pier or abutment;
- (2) 200 feet of any stabilized bank or structure built or authorized by the United States government.

A lessee shall not remove sand from any stream bed or channel within a distance of 1,500 feet of the nearest tipple erected and maintained and used for the purpose of taking sand from the river. The distances of 500 and 200 feet are to be construed as minimum distances with greater distances required as necessary to preserve stream bed and bank stability. (Authorized by and implementing K.S.A. 70a-102, 70a-103; effective July 3, 1989.)

92-9-7. Cancellation of lease. In the event the lessee violates or fails to perform any provision of the contract made and entered into by said parties, the director of revenue may upon 60 days written notice cancel and terminate the contract; except that should the lessee fail to pay any royalty provided for herein, the director of revenue may upon 30 days written notice cancel and terminate said written contract. Lessee may terminate said contract for removal of sand from a navigable stream bed at any time by giving written notice to the director of revenue, provided that no payments for sand royalty are due the state of Kansas. (Authorized by K.S.A. 71-102, 71-103; effective Jan. 1, 1966.)

92-9-8. Exemption; tonnage charges. The lessee is not required to pay tonnage charges on sand sold to state agencies or any other municipal corporation: *Provided, however,* Such exemption does not apply unless the chief engineer of the state highway commission or the chief engineer of any other municipal corporation shall file an exemption affidavit setting forth that all the sand sold has been received by said purchaser. (Authorized by K.S.A. 71-102, 71-103; effective Jan. 1, 1966.)

Article 10.—SPECIAL FUEL TAX

92-10-1 and 92-10-2. (Authorized by K.S.A. 79-3483; effective Jan. 1, 1966; revoked, E-69-16, July 23, 1969; revoked Jan. 1, 1970.)

Article 11.—WITHHOLDING AND ESTIMATED TAX

92-11-1. Requirements of withholding tax from wages. Each employer maintaining

an office or transacting business or deriving income within the state and making payment of any wages taxable under "the Kansas income tax act" to a resident or nonresident individual shall deduct and withhold from such wages for each payroll period an amount of tax as provided in K.A.R. 92-11-4, and its amendments. (Authorized by K.S.A. 79-3236, 79-3297a; implementing K.S.A. 79-3296, 79-3297a; effective Jan. 1, 1966; amended, E-67-14, Aug. 9, 1967; amended Jan. 1, 1968; amended Jan. 1, 1972; amended, E-77-6, March 19, 1976; amended Feb. 15, 1977; amended, E-78-21, Aug. 10, 1977; amended May 1, 1978; amended May 1, 1986.)

92-11-2. Definition of employer. An employer is any person or organization qualifying as an employer for federal income tax withholding purposes and who maintains an office, transacts business or derives income within Kansas for whom an individual performs or performed any services as an employee. (The fact that an employer may not himself or itself be subject to the state income tax is not relevant.) The term also applies to the state of Kansas or any subdivision thereof, or any agency or instrumentality, and the United States or any agency or instrumentality thereof. (Authorized by K.S.A. 79-3236, K.S.A. 1965 Supp. 79-3294; effective Jan. 1, 1966.)

92-11-3. Definition of wages. (a) Payments which are considered wages for federal income tax withholding purposes and which are taxable under the Kansas income tax act shall be considered wages for purposes of Kansas income tax withholding.

(b) A determination by the internal revenue service which relieves an employer from withholding responsibility with respect to payments to an employee shall also apply for Kansas income tax withholding purposes. Where an employer is required to reinstate withholding of federal income tax with respect to an employee, such obligation shall be equally applicable for Kansas withholding purposes. (Authorized by K.S.A. 79-3236, 79-3294; effective Jan. 1, 1966; amended, E-78-21, Aug. 10, 1977; amended May 1, 1978.)

92-11-4. Determining tax to be withheld. (a) *General.* The Kansas income tax to be withheld by an employer shall be determined in accordance with a method prescribed by the director which takes into account the employee's annualized gross wages, allowable federal

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Sent: bill 211
to Council room

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A GEOMETRIC PERSPECTIVE OF HYDRAULIC SAND DREDGING IMPACTS
IN THE KANSAS RIVER

1.35 tons of dry sand fills one cubic yard

300,000 tons of dry sand fills 222,222 cubic yards and is equivalent to the amount proposed for each of two dredging operation permit requests before the Corps. The Corps will permit 750,000 tons of dry sand per year to be extracted from any 15 mile reach of the Kansas River upstream of Bowersock Dam in Lawrence and below the reach worked by the Topeka area dredging companies. Victory Sand and Gravel and Penny's Concrete propose to dredge 600,000 tons from their two sites on the Douglas-Jefferson County line and just south of the community of Newman in Jefferson County. This leaves a potential 150,000 ton site available for development by a third party. A 150,000 ton per year site has been in operation for several years within view of Bowersock Dam to the east.

Both VS+GS and PC sites will be 1.5 miles, or 2640 yards long. The Army Corps of Engineers permits to operate the VS+GC and PC sites will be for five years, during which time each company may extract 1,500,000 tons or 1,111,110 cubic yards of dry sand. An additional 750,000 tons or 555,555 cubic yards can come from the third site, combining for a five year total volume extracted of 2,777,775 cu yards (3,750,000 tons) from the 15 mile reach. 222,222 cubic yards, the amount extracted in one year within a 1.5 mile long permit site, can be visualized as a trench in the river bed with the following dimensions:

2640 yards long x 84 yards wide x 1 yard deep
2640 yards long x 126.4 yards wide x .667 yards deep
1.5 miles long x 126 feet wide x 6 feet deep
1.5 miles long x 252 feet wide x 3 feet deep
1.5 miles long x 378.6 feet wide x 2 feet deep

Over the five year long life of the permit, 5 x 222,222 or 1,111,110 cubic yards of dry sand will be removed. Such a volume can be represented by the following dimensions:

2640 yards long x 421 yards wide x 1 yard deep
2640 yards long x 631 yards wide x .667 yards deep
1.5 miles long x 1893 feet wide x 2 feet deep
1.5 miles long x 1263 feet wide x 3 feet deep
1.5 miles long x 631 feet wide x 6 feet deep

Assuming 750,000 tons/year or 2,777,775 cubic yards are extracted from the 15 mile long reach, the equivalent trench (or pile if inverted) would look like this:

(P.1)

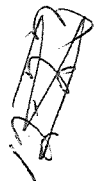
12-20
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39,600 yards long x 70.14 yards wide x 1 yard deep
39,600 yards long x 105.16 yards wide x .667 yards deep
15 miles long x 105.2 feet wide x 6 feet deep
15 miles long x 210.4 feet wide x 3 feet deep
15 miles long x 316.5 feet wide x 2 feet deep

The channel varies in width along the reach forming the boundary between Jefferson and Douglas Counties. Measurements taken from maps and photos in the Soil Survey of Jefferson County reveal a typical bank-to-bank width of 1000 feet at the Victory Sand and Gravel site. At mean flow, much of that 1000 feet contains exposed sand bars, mud flats, and an island. The water does not "fill" the channel, bank to bank, under natural conditions a majority of the time. Through a substantial portion of the Penny site, the bank to bank width is a 1000 feet or less. At the VS+GC site, because of the probability of bank erosion through undermining, dredging may not take place: within 200 feet of the left bank from the downstream limit to within .4 of a mile of their upstream limit, within 100 feet of the island between that point and the upstream limit, nor within 200 feet of the bank stabilization structure running .6 of a mile downstream along the right bank from the upstream limit.

I chose two feet as the minimum depth in the above illustrations because that is the limit of average bed degradation over any five mile reach which would trigger cessation of dredging activities within the reach. Given the fact that Paul Jordan's 1995 USGS report documented approximately 150,000 tons of sand per year carried in suspension by the river at his Topeka measurement site over thirty six consecutive months at medium stream flow rates (5000+ cubic feet per second), one can not assume the 750,000 tons of sand taken from the bed each year in the 15 miles below the measurement site will be "renewed" by sand dropping out of suspension. It will in fact be "renewed" by sand from the bed and banks in the immediate vicinity first and from points upstream later. Engineering studies incorporated into the Corps' Final Regulatory Report and Environmental Impact Statement noted a 1 to 1 ratio of sand moving into and out of this reach under natural conditions, but forecast a natural drop in bed elevation of 1 foot in ten years and 2 or more feet in twenty years ("natural" with the understanding that 3/4 million tons of sand is being mined from the bed each year in the reach immediately upstream in Topeka, a fact which undoubtedly is playing a role in the slow degradation of the bed in the Lawrence-Topeka reach).

Mark Maher
Rt. 1 Box 333
Perry, KS 66073
October, 1995



12-21

SUMMARY OF POTENTIAL IMPACTS FROM CONTINUED DREDGING
(88 DOLLARS)

AUGUST 30, 1988

Structure/Resource with alternatives	Amount of Degradation	Location	Capital Cost	Annual Cost	Comments	Source
1. Bank Stabilization structures	1	RM 8.2-50.4	\$ 774,000			COE calculated; 5 JUNE 86 DF from ED (corrected)
	2		1,592,000			
	3		2,419,000			
	4		3,289,000			
	5		4,184,000			
		RM 84-87.7	212,000			
	1		438,000			
	2		653,000			
	3		901,000			
	4		1,144,000			
2. Erosion	3	RM 8.2-50.4	53,000		COE estimated	
	5		79,000			
		RM 84-87.7	6,400			
	3		6,400			
	5					
3. Sante Fe RR Bridge	-	RM 93.7 (Topeka)	268,000		Needed in the future	Letters from Company: April 2, 1986 July 25, 1986 July 7, 1981
	-	RM 21.2 (Bonner Springs)	403,000		Needed with present condition	
4. Pipeline crossing		RM 14.85				Central States Underwater Contracting, Inc (CSUC) quote via Burns & McDonnell ltr Oct 29, 1986
		Two 20" lines exposed and suspended (Stabilized in 1988)				
	a)	Stabilized with grout bags in 1988		144,000		
					Cost to lower	CSUC proposal, 1987
b)	Lowering of pipeline		273,000	3 feet		
					5 feet	

C-62

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12-22

Structure with alternatives	Source	Amount of Degradation	Location	Cap Cost	Annual Cost	Comments	Source
Pipeline crossing			RM 16.5				
Two 8" and one 10" line currently exposed with parts suspended							
a) Stabilize with grout bags				\$ 94,000			CSUC quote via Burns & McDonnell Itr Oct 28, 1986
b) Lowering of pipeline				332,000 613,000		Cost to lower 3 feet 5 feet	CSUC proposal, 1987
5. Johnson Co. WD No. 1 Intake			RM 15.0				
a) Existing Jetty and weir		1 2 3 4 5			\$21,000 31,000 42,000 52,000 62,000		Burns & McDonnell Report, 1986
b) New Intake				3,195,000			
		1 2 3 4 5			5,200 7,800 10,400 13,000 15,600		
6. Sunflower AAP Water Intake			RM 33				
a) Stone filled wler		1 2 3 4 5		736,000 838,000 948,000 1,070,000 1,203,000	44,000 52,000 60,000 71,000 83,000		Burns & McDonnell Report, 1986
b) Coffin cell		-		2,950,000	10,400		
c) New Intake		-		3,621,000	79,000		
7. Johnson Co. WD Wells			RM 11-12				
Additional pumping energy		1 3 5			200 600 1,000		Burns & McDonnell Report, 1986

63

11-23

Structure/Resource with alternatives	Amount of Degradation	Location	Capital Cost	Annual Cost	Comments	Source
8. Bonner Springs Wells		RM 20				
Additional pumping energy	1 3 5			\$ 100 300 500		Burns & McDonnell Report, 1986
9. Olathe Wells		RM 28				
a) Modify well field operation & additional pumping energy	1 3 5			3,300 8,300 11,800		Burns & McDonnell Report, 1986
b) Replacement well(s) & additional pumping energy	1 3 5		\$119,000 133,000 252,000	400 1,100 1,900		
c) Purchase replacement water & additional pumping energy	1 3 5			34,700 44,700 50,700		
10. City of DeSoto		RM 32				
a) Modify well field operation & additional pumping energy	1 3 5			1,300 2,600 Not Feasible		Burns & McDonnell Report, 1986
b) Replacement well(s) & additional pumping energy	1 3 5		119,000 119,000 119,000	100 200 300		
11. Sunflower AAP Wells		RM 31				
a) Additional pumping energy	1 3 5			300 900 1,600		Burns & McDonnell Report, 1986
12. Industrial and Irrigation wells						
a) Modify well field operation	1 3 5			3,700 5,000 2,500		Burns & McDonnell Report, 1986
b) Replacement well(s)	1 3 5		358,000 358,000 491,000			

C-64

11-24

KANSAS RIVER, LAWRENCE TO KANSAS CITY, MI 50.4-8.2

	Total Structure Length (ft)	Estimated Cost to Repair Potential Damage of Bank Stabilization Structures Due to Degradation				
		1' Degrad	2' Degrad	3' Degrad	4' Degrad	5' Degrad
Riprap, Large Rock	34,325	21,968	44,279	66,247	88,558	110,526
Riprap, Small Rock	17,800	8,010	16,198	23,852	31,862	39,872
Dike and Hardpoint	7,285	4,371 4,225	10,199 8,815	17,411 13,259	25,935 17,702	35,988
Debris, Appliances, Tires, Cars, Concrete	4,300	1,935	3,913	5,762	7,697	9,632
Kellner Jacks	6,100	--	--	--	--	--
Tires	400	--	--	--	--	--
Concrete Slabs	200	--	--	--	--	--
		90	182	268	358	448
Total Tonnage		36,374 36,228	74,771 73,387	113,540 109,388	154,410 146,177	196,466 196,466
Total Cost		727,480 \$724,500	1,495,420 \$1,467,740	2,270,800 \$2,187,760	3,088,200 \$3,023,540	3,929,320 \$3,929,320

C - 65

10-25

KANSAS RIVER, TOPEKA, KANSAS, MI 87.7-84.0

	Total Structure Length (ft.)	Estimated Cost to Repair Potential Damage of Bank Stabilization Structures Due to Degradation				
		1' Degrad	2' Degrad	3' Degrad	4' Degrad	5' Degrad
Riprap, Large Rock	13,800	8,832	17,802	26,634	35,604	44,436
Dike and Hardpoint	1,830	1,128	2,632	4,493	6,693	9,287
		<u>1,090</u>	<u>2,275</u>	<u>3,422</u>	<u>4,568</u>	
Total Tonnage		9,960	20,434	31,127	42,297	53,723
		<u>9,922</u>	<u>20,077</u>	<u>30,056</u>	<u>40,172</u>	
Total Cost		199,200	408,680	622,540	845,940	1,074,460 ✓
		<u>\$198,430</u>	<u>\$401,540</u>	<u>\$601,120</u>	<u>\$803,440</u>	

C - 66

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12-26

Kansas Wildlife Federation, Inc.

P.O. Box 5715
Topeka, Ks. 66605

Affiliate of National Wildlife Federation
913/266-6185

200 S.W. 30th
Suite 106
Topeka, Ks. 66611

TO: Senate Federal and State Affairs Committee

FROM: Steve Montgomery
Secretary, Kansas Wildlife Federation

RE: Senate Bill No. 617

DATE: February 14, 1996

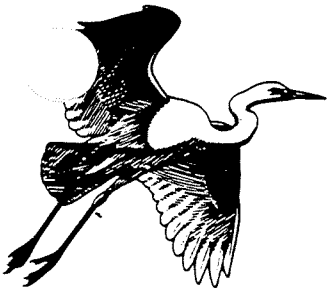
My name is Steve Montgomery. I am testifying in my capacity as Secretary of the Kansas Wildlife Federation (KWF), in support of SB 617. The KWF, an affiliate of the National Wildlife Federation, is a state-wide organization formed in 1950 focused on preserving wildlife and habitat in Kansas for future generations, educating the public and promoting outdoor ethics. Our membership of approximately 4,000 is quite diverse and consists of hunters, trappers, fisherman, campers, bird watchers, bee keepers and gardeners, to name but a few. One of the strengths of our organization is its diversity.

The ongoing Kaw River study by the Department of Wildlife and Parks is consistent with the KWF goal of promoting and preserving access to the outdoors for future generations. The authorization for new dredging activities could conflict with plans the Department may be developing. It is only prudent to allow the Department to complete their study and allow the legislature to review it prior to authorizing new dredging operations on the Kaw. The authorization of such new operations could make the Department study outdated before it is ever completed.

The continued study of the Kaw ecosystem is essential as it has been documented that the construction of current reservoir system on the Kaw drainage traps 95-98% of all suspended sediment and up to 100% of sand-sized particles (Simons, Li and Associates, 1984), thereby substantially decreasing sediment flow. As sediment flow has decreased from upstream, the consequence of dredging in the lower reaches of the Kansas River has resulted in documented river bed degradation, bank erosion and channel widening. (U.S. Army Corp of Engineers, 1990). The decrease in sediment flow is a recent phenomena in terms of the life of the Kaw River. We are only beginning to learn the impacts of these factors on wildlife and the surrounding geography. If we wish to preserve for future generations a legacy rich in wildlife and Kansas' natural beauty, a sound and studied approach is essential.

Kansans have a proud heritage of conservation. Perhaps this arises from our state's reliance on agriculture and the products the earth provides. Our farmers take pride in being the stewards of their land. In the case of the Kaw River, the riverbed is owned by the State of Kansas, rather than by a private entity. The KWF urges the state to adopt the sound principles of stewardship that have long sustained our state.

*Attachment 13 12
Senate Fed State Affairs
2/13/96*



Kansas Audubon Council

February 14, 1996
Senate Federal and State Affairs Committee
Testimony on SB 617

Thank you for giving me the opportunity to appear before you today in support of SB 617. My name is Cynthia Abbott, and I am here on behalf of the Kansas Audubon Council and the approximately 5000 Audubon members throughout the state of Kansas.

Kansas Audubon Council strongly supports the concept of a recreational corridor along the Kansas (Kaw) River. There is currently little public access to this wonderful natural resource and we feel that a recreational corridor would provide increased recreational opportunities here at home for our members as well as for many others.

People tend to join Audubon for one of two reasons: they either love birds and bird-watching, or they are interested in the environment and wildlife in general. Our members often relax and recreate by going to natural areas, nature trails, and other publicly accessible places where there are birds and other wild animals. They may be spending a Sunday afternoon near home, or they may be spending a two week vacation a thousand miles away. Simply put, Audubon members tend to go (and spend money) where the birds and wildlife are.

Kansas has the potential for a lot of birds. The Kansas Ornithological Society's 1989 checklist of Kansas birds includes 425 species known to occur within the state. That is almost half of the 920 species known to occur north of Mexico (including Hawaii). Almost 150 of those 425 Kansas species are waterbirds and a large percentage of the remainder are often found in wooded areas and along creeks and rivers. Rivers, streams and wetlands are among the most productive birding areas in the state.

In fact, given the large number and diversity of bird species that Kansas hosts, and given that rivers and their associated woodlands are the preferred habitat of many of them, a recreational corridor along the Kansas River would have the potential of becoming an attraction for birders across the country. Then some of those travellers who currently zip through Kansas on I-70 might be enticed to spend a day or two enjoying our wildlife and our hotels and restaurants. In 1991, American birders were estimated to spend \$5.2 billion a year on their hobby, according to a study done by the U.S. Fish and Wildlife Service. Ecotourism is a growing business. Capturing some of this market could provide a real boon for our local economies.

However, if the river is degraded by sand dredging before we have the opportunity to study the feasibility of a recreational corridor, let alone develop such a corridor, all of this potential is lost.

In conclusion, Kansas Audubon Council supports a moratorium on new permits for sand dredging in the Kansas River and a serious look at a recreational corridor along the Kansas River. We urge the Committee to vote "yes" on SB 617.

*Attachment # 13
Senate Fed. State Affairs
2/14/96*