

MINUTES OF THE SENATE COMMITTEE ON ENERGY & NATURAL RESOURCES

The meeting was called to order by _____ Senator Merrill Werts _____ at
Chairperson

8:00 a.m./~~p.m.~~ on _____ February 23 _____, 1988 in room 123-S of the Capitol.

All members were present except:
Senator Yost - Excused
Senator Daniels - Absent

Committee staff present:
Don Hayward - Revisor
Nancy Jones - Secretary
Laura Howard - Research
Raney Gilliland - Research

Conferees appearing before the committee:
Karl Mueldener, Director, Bureau of Water Pollution, KDHE
Janet Stubbs, Home Builders Association

A motion was made by Senator Hayden to approve minutes of the February 17 & 18 meetings, seconded by Senator Gordon. Minutes approved.

SB 639 - Concerning use of lead in the construction of public water supply systems

Chairman Werts stated this bill was introduced as SB 287 at the request of KDHE during the 1987 session and referred to the Public Health and Welfare Committee, but it died on the Calendar. KDHE requested re-introduction through this committee this session.

Karl Mueldener testified SB 639 implements requirements of the Federal Safe Drinking Water Act concerning use of lead products in water system construction. Provisions controlling lead content of materials used in water systems and a required notice of lead concentration to users of public water supply systems must be implemented by statute or the state will forfeit up to 5% of the annual \$400,000 EPA grant, a loss of approximately \$20,000. Compliance is required by June, 1988.

Mr. Mueldener discussed the detrimental effects of lead to the human body and stated the major source of lead contamination is household plumbing which has been dissolved by corrosive water and leaching from solder and flux into the water supply. (Attachment I)

During Committee discussion Mr. Mueldener said low lead solders and no lead pipe materials are now being used by contractors and the provisions of this legislation do not apply to systems that have been in place before federal regulations were implemented. Acceptable levels of lead contamination in water systems follow the established standard of 15microliters/decaliter. The EPA arrived at standards established through laboratory testing and some lengthy studies of tap water throughout the world.

Janet Stubbs testified her organization is not opposed to the proposed legislation as contractors are currently using the proposed standards.

A motion was made by Senator Langworthy to recommend favorably SB 639, seconded by Senator Vidricksen. Motion carried.

Discussion of SB 455 will continue at the next meeting.

Meeting adjourned. The next meeting will be February 25, 1988.

Unless specifically noted, the individual remarks recorded herein have not been transcribed verbatim. Individual remarks as reported herein have not been submitted to the individuals appearing before the committee for editing or corrections.

2-23-50

Constitution

James Power	KDHE	296-1535
Karl Muelder	"	296-5508
Dave Cortiss	Co. of Municipalities	
Janet Stebbins	YBAK	233-9853
Lispeth Byer	KNRC	233-6707

STATE OF KANSAS



DEPARTMENT OF HEALTH AND ENVIRONMENT

Forbes Field

Topeka, Kansas 66620-0001

Phone (913) 296-1500

Mike Hayden, Governor

Stanley C. Grant, Ph.D., Secretary

Gary K. Hulett, Ph.D., Under Secretary

Testimony Presented to
Energy and Natural Resources Committee

by

The Kansas Department of Health and Environment

Senate Bill 639

Mr. Chairman and members of the Committee:

This bill implements requirements of the 1986 Amendments to the Federal Safe Drinking Water Act (SDWA) concerning use of lead products in public water systems.

Section 1417 of the Safe Drinking Water Amendments:

- prohibits use of solder or flux containing more than 0.2% lead, or pipe and pipe fittings containing more than 8.0% lead, in new installations and repairs of public water supply systems or in the plumbing of any building providing water for human consumption; and
- requires public water supply systems to give notice to consumers who may be affected by lead contamination, of the potential lead sources, potential lead sources, potential health effects, and possible methods of mitigating lead contamination.

States are required by the SDWA to implement these two provisions of federal law or forfeit up to 5% of the grant received from the Environmental Protection Agency (a loss of approximately \$21,000 to KDHE) for administration of the public water supply supervision program.

This bill amends K.S.A. 65-171r, "Prohibited Acts," to add the lead solder/flux/pipe ban and to prohibit sale of lead solder or flux with more than 0.2% lead unless the product is properly labeled.

ATTACH I
2-23-88

This bill also amends K.S.A. 65-1710, to allow the Secretary of KDHE to require public water suppliers to give notice to their customers whenever lead contamination from the distribution system materials or from the corrosivity characteristics of the water is possible.

This bill will place the State of Kansas in compliance with the requirements of federal law.

Lead has no known useful function in the human body. Lead is a well-known toxin causing damage to the nervous system, blood forming processes, gastrointestinal system and the kidneys. Recent studies have shown that lead also causes cognitive damage, can stunt children's growth and raise blood pressure in adult males, even at low levels. Health effects range from subtle biochemical changes at low doses to severe retardation or death at higher levels. Young children and fetuses are most at risk to damage from exposure to lead.

Lead rarely occurs naturally in Kansas drinking water sources. The major source of lead in drinking water is the plumbing of individual houses dissolved by corrosive water. How much lead leaches from pipes and soldered joints containing lead depends upon the time of contact between the water and the plumbing, the corrosivity of water and the age and condition of the plumbing. New solder, particularly, leaches lead easily.

Kansas waters are not generally aggressive and lead contamination of drinking water has not been determined to be a problem in this state. However, lead contamination can occur with new plumbing and solder, particularly if the water is softened. These changes in Kansas Statute are necessary to place the state in compliance with federal law.

Mr. Chairman and members of the committee, we request your support of this bill.

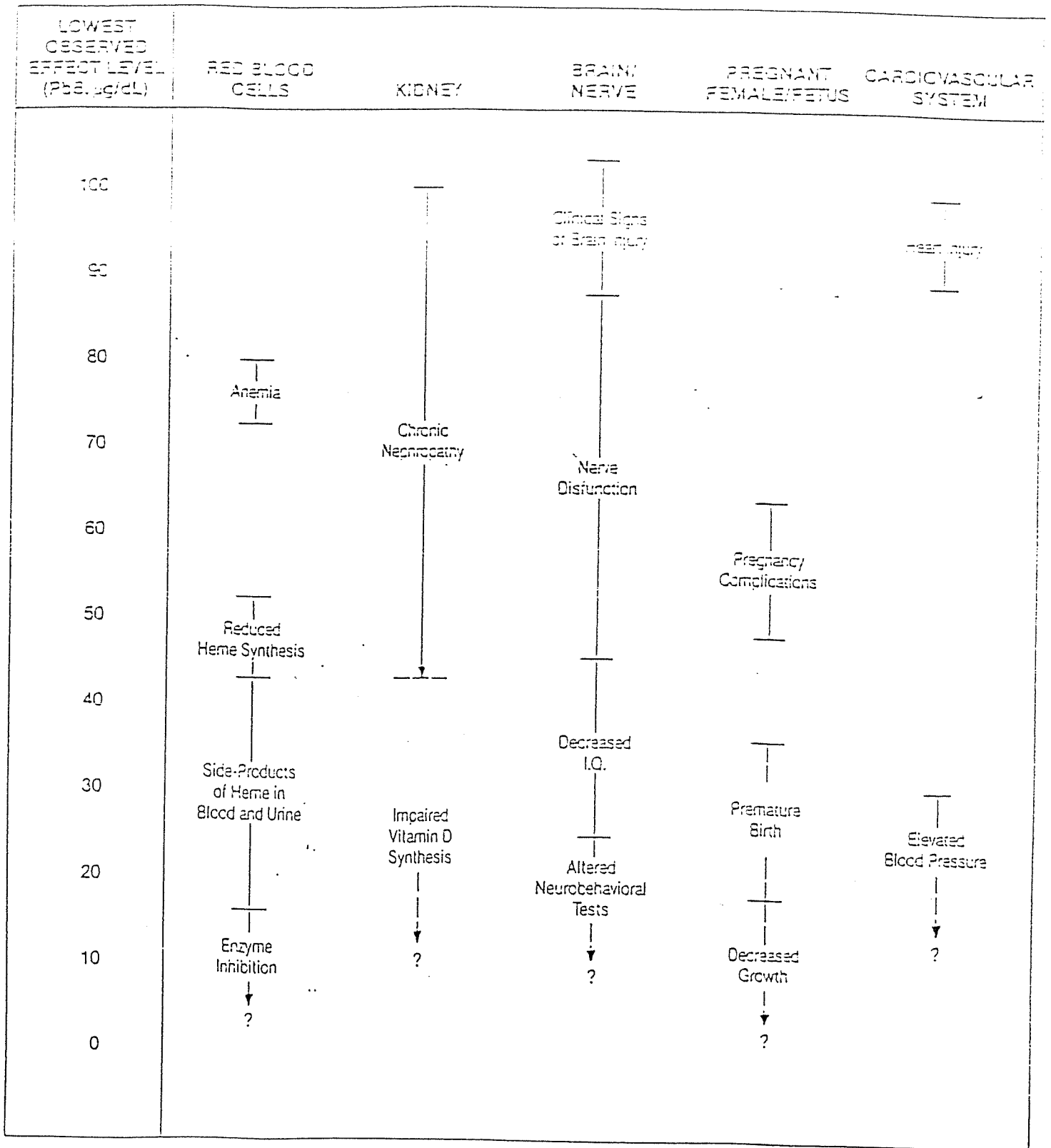
Presented by: Karl Muedener, P.E., Director
Bureau of Water Protection

Date: February 23, 1988

HEALTH EFFECTS AND
RISKS FROM LEAD IN
DRINKING WATER

Edward V. Ohanian, Ph.D.
Chief, Health Effects Branch
Office of Drinking Water
U.S. Environmental Agency

ADVERSE HEALTH EFFECTS OF LEAD



HEALTH EFFECTS OF SHORT-TERM EXPOSURE TO LEAD

- Acute Symptoms of Lead Poisoning Include:
 - Brain Injury (Seizures, Coma)
 - Gastrointestinal Distress (Vomiting, Abdominal Pain)
 - Liver Damage
 - Destruction of Red Blood Cells
 - Kidney Damage
- Acutely Toxic Doses are Usually in Excess of 1,000 mg/day
- Typical Doses in Water are Much Lower (Less Than 0.1 mg/day)
- Therefore, Lead in Drinking Water is not Associated with Significant Risk of Acute Injury

HEALTH EFFECTS OF LONG-TERM EXPOSURE TO LEAD

ORGAN OR TISSUE	ADVERSE EFFECTS
Red Blood Cells	<ul style="list-style-type: none"> • Inhibition of Heme Production • Decreased Hemoglobin • Destruction of Red Cells • Anemia
Kidney	<ul style="list-style-type: none"> • Cell Damage/Death • Failure to Retain Useful Nutrients (Glucose, Amino Acids, Proteins, Calcium) • Failure to Excrete Waste Products (Urea, Uric Acid)
Brain and Nerves	<ul style="list-style-type: none"> • Impaired Nerve Function • Interference with Brain Development (Infant, Child) • Decreased I.Q. • Altered Behavior and Development
Fetus	<ul style="list-style-type: none"> • Pregnancy Complications • Premature Birth • Reduced Birth Weight • Growth Retardation
Heart and Blood Vessels	<ul style="list-style-type: none"> • Heart Damage • Increased Blood Pressure • Increased Risk of Stroke, Heart Attack

STEP 1:
SELECTION OF NO-EFFECT LEVEL

TIME PERIOD	PbB ($\mu\text{g/dL}$)	DESCRIPTION	PbB NO-EFFECT LEVEL
1940-1960s	Above 80	<ul style="list-style-type: none"> • Frank Lead Poisoning • Clear Clinical Symptoms (Brain, Blood, Kidney) 	—
1972-1976	Above 50	<ul style="list-style-type: none"> • No Clear Clinical Signs • Biochemical Evidence of Impaired Heme Synthesis • Early Signs of Kidney Effects 	40 $\mu\text{g/dL}$
1976-1984	Above 25	<ul style="list-style-type: none"> • Decreased Nerve Function • Impaired Brain Development • Decreased IQ 	15 $\mu\text{g/dL}$
1984-1986	Above 10	<ul style="list-style-type: none"> • Increased Blood Pressure • Altered Behavior and Development of Infants 	?

SUMMARY

- Lead is a Major Concern in Drinking Water
- Long-Term Lead Exposure Has Numerous Adverse Effects
- Children, Infants and Fetuses are Especially Sensitive
- "Safe" Blood Lead Level is Difficult to Judge
- Present Concensus "No-Effect" Level is 15 $\mu\text{g}/\text{dL}$
micrograms *1000,000* *10 grams*
deca liter
- This Corresponds to an MCLG of 20 $\mu\text{g}/\text{L}$ (Protective for Infants)
natural contaminant level
good *micrograms per liter*
- As Testing Becomes More Sophisticated, Subtle Effects Detected at Lower Concentrations