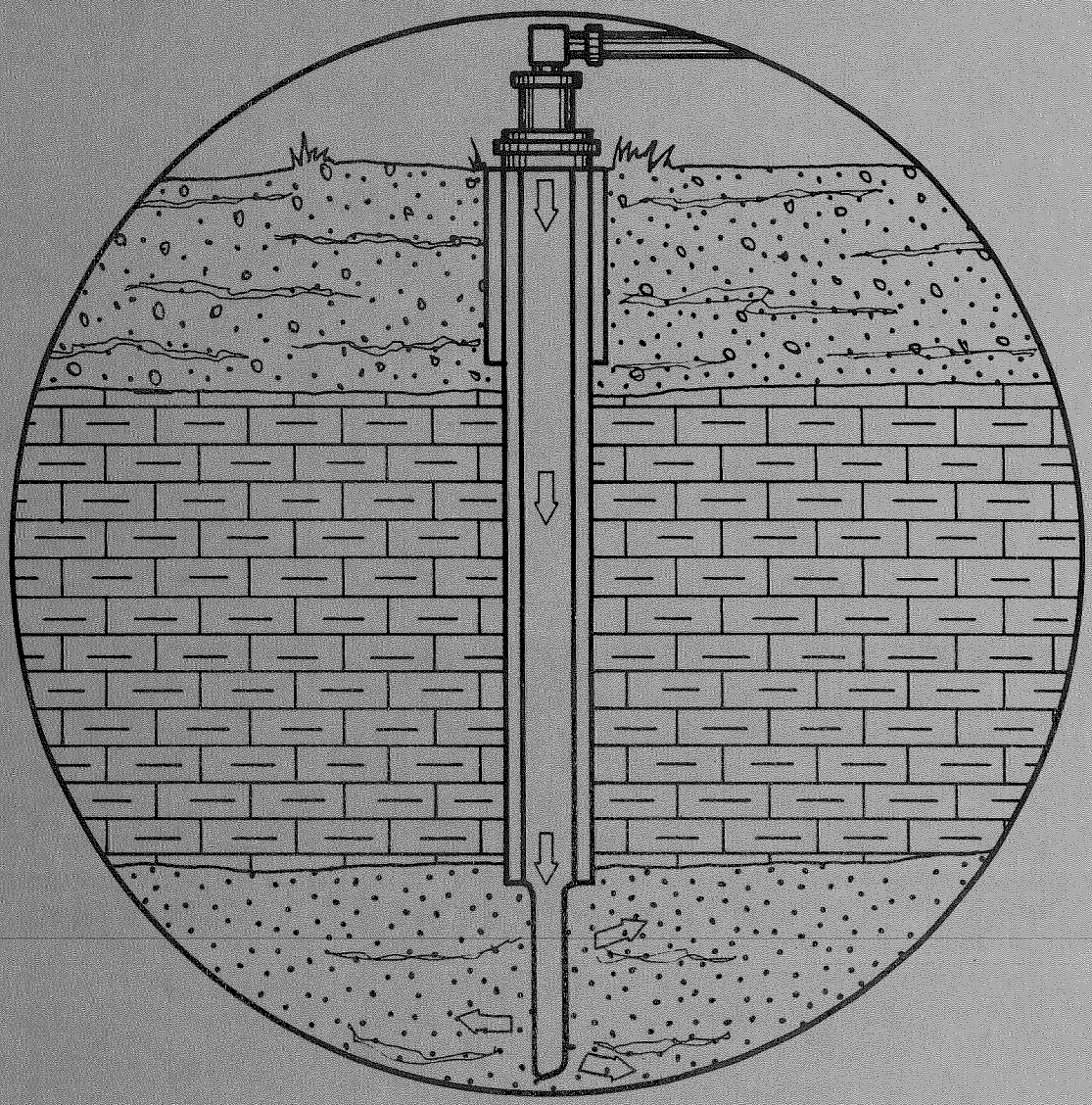
HAZARDOUS WASTE INJECTION WELL TASK FORCE RECOMMENDATIONS



OCTOBER, 1984

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Forbes Field Topeka, KS 66620

TABLE OF CONTENTS

1. Background

2. Letter of Transmittal From the Hazardous Waste Injection Well Task Force to Secretary Sabol

3. Task Force Recommendations

4. Minority Statements

- Kansas Natural Resource Council

- League of Women Voters of Kansas

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

Hazardous Waste Injection Well Task Force

BACKGROUND

On June 7, 1984, Barbara J. Sabol, Secretary of the Kansas Department of Health and Environment announced the formation of a task force to review deep well injection of hazardous wastes and develop, if necessary, new hazardous waste injection well policies. The formation of the task force was initiated at the request of Governor John Carlin, who indicated that he was interested in having a task force study the issue of deep well injection of hazardous wastes as a separate issue from his legislative initiative for a prohibition of land burial of hazardous waste.

In forming the Hazardous Waste Injection Well Task Force (HWIWIF), Secretary Sabol charged the task force with four duties: (1) to determine the appropriateness of prohibition of liquid hazardous waste injection; (2) to determine if injection to certain geologic formations would be environmentally acceptable; (3) to review existing requirements and develop new criteria, if necessary, by which future applications for hazardous waste injection may be judged; and (4) to develop a document outlining findings of the task force and recommendations on statutory, regulatory, and/or policy changes.

In forming the HWIWIF, the following organizations were invited to designate a representative: Kansas Geological Survey, Kansas Engineering Society, Kansas Chamber of Commerce and Industry, Kansas Independent Oil and Gas Association, Kansas Natural Resource Council, Kansas Corporation Commission, League of Women Voters of Kansas, Association of Engineering Geologists, Kansas Water Pollution Control Association, League of Kansas Municipalities, Kansas Petroleum Council, Kansas Public Health Association, and Mid-Continent Oil and Gas Association. Secretary Sabol also appointed Dr. Allan S. Abramson, Director of the Division of Environment for the Department of Health and Environment, to serve as chairperson for the task force. All of the invited organizations accepted Secretary Sabol's invitation and appointed the following members:

Norman W. Biegler.....	Association of Engineering Geologists
Mary Ann Bradford.....	League of Women Voters of Kansas
Janis Butler.....	Kansas Engineering Society
David C. Clark.....	Kansas Water Pollution Control Assoc.
James W. Collins.....	Mid-Continent Oil & Gas Association
Michael Everhart.....	Environmental Section of the Kansas Public Health Association
Rob Hodges.....	Kansas Chamber of Commerce and Industry
Manoutchehr Heidari.....	Geohydrology Section of the Kansas Geological Survey
Ross Martin.....	Kansas Petroleum Council
Jack McCord.....	Conservation Division of the Kansas Corporation Commission
E. A. Mosher.....	League of Kansas Municipalities
Mari Peterson.....	Kansas Natural Resource Council
Donald P. Schnacke.....	Kansas Independent Oil & Gas Association

The task force was instructed by Secretary Sabol to submit its findings to her by early Fall, 1984.

The task force convened on five occasions: July 6th, July 25th, August 3rd, September 7th, and October 2nd, 1984. At their second meeting on July 25th, the task force held a technical workshop during which the conferees expressed pros and cons on the hazardous waste injection well issue. The information gained during this technical workshop was very helpful to the task force in forming the recommendations included in the attached report.

Conferees at the July 26th workshop and their topics of discussion included (in the order they appeared at the workshop):

Suzi Ruhl -	Legal Environmental Assistance Foundation, Tallahassee, Florida.... Topic: Federal and State Policies Regarding Hazardous Waste Injection Wells.
Richard Tinlin -	Engineering Enterprises, Inc., Norman, Oklahoma....Topic: The Meaning of the Term, 'Area of Endangering Influence'.
Ernest Angino -	Chairman, Department of Geology, the University of Kansas, Lawrence, Kansas ....Topic: Hazardous Waste Disposal Alternatives.
Ross Brower -	Illinois Geological Survey, Champaign, Illinois....Topic: The Illinois Experience with Hazardous Waste Injection Wells.
Jim Boyd -	Plant Manager, Vulcan Materials Company, Wichita, Kansas...Topic: Vulcan's Experience with Deep Well Injection.
Robert Selm -	Wilson & Company, Salina, Kansas....Topic: Injection Well Design and Liquid Pretreatment.
Doyle Fair -	Consulting Engineer, Wichita, Kansas....Topic: Construction and Monitoring of Injection Wells.
Jerry Carr -	U.S. Geological Survey, Lawrence, Kansas....Topic: The Arbuckle Formation.
Howard O'Connor -	Kansas Geological Survey, Lawrence, Kansas....Topic: Siting Criteria.

The HWIWIF found that a complex set of issues is involved in discussing hazardous waste injection wells. Many of these issues relate to technical processes, monitoring and pretreatment requirements as well as to the public perception of the destiny of the wastes, once injected into a well. Because of the complexity of the issues and the short timeframe within which they had to fulfill their duties, the task force decided to concentrate on making policy recommendations, rather than specific proposals for rewording of existing statutes and regulations.

It should be noted that the accompanying recommendations represent the results of a truly open and participatory process by which the wording has been carefully considered to reflect the consensus of all of the task force members.

Finally, the staff assisting the Hazardous Waste Injection Well Task Force included the following Department of Health and Environment Personnel:

William Bryson -	Manager, Bureau of Oil Field and Environmental Geology and Chief of Staff for the task force.
Jeffrey Beach -	Environmental Planner, Division of Policy and Planning.
Larry Knoche -	Environmental Geologist, Bureau of Oil Field and Environmental Geology.
Dennis Murphey -	Manager, Bureau of Waste Management.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

MEMORANDUM

TO: Barbara J. Sabol, Secretary
Kansas Department of Health and Environment

FROM: Members of The Hazardous Waste Injection Well Task Force

DATE: October 2, 1984

SUBJECT: Final Recommendations

The Task Force convened four times between July 6, 1984 and September 7, 1984 and discussed the issue of hazardous waste injection wells within the scope of the following responsibilities:

(1) To determine the appropriateness of prohibition of liquid hazardous waste injection, (2) To determine if injection to certain geological formations would be environmentally acceptable, (3) To review existing requirements and develop new criteria, if necessary, by which future applications for hazardous waste injection may be judged, and (4) To develop a document outlining findings of the Task Force and recommendations on statutory/regulatory changes and policy.

The Task Force held a workshop on July 25 in Wichita where conferees expressed pros and cons on the hazardous waste injection well issue which were helpful to the task force in forming the recommendations included in the report.

The Task Force found that a complex set of issues are involved in discussing hazardous waste injection wells and their viability as a disposal method. Many of these issues related to physio-chemical processes that involve the waste characteristics, formation properties, and pretreatment opportunities and the public perception of the future destiny of the wastes, once injected into a well.

We hereby submit our recommendations to you for your consideration.

Hazardous Waste Injection Well Task Force Members

Allan S. Abramson

Allan S. Abramson, Chairman
Hazardous Waste Injection Well Task Force

Norman W. Biegler

Norman W. Biegler
Association of Engineering Geologists

M. Heidari

Dr. Manoutchehr Heidari, Chief
Geohydrology Section
Kansas Geological Survey

(continued)

Hazardous Waste Injection Well Task Force Members (Cont.)

Mary Ann Bradford
League of Women Voters of Kansas

Ross Martin
Kansas Petroleum Council

Janis Butler
Kansas Engineering Society

Jack McCord, Administrator
Conservation Division
Kansas Corporation Commission

David C. Clark
Kansas Water Pollution Control Assoc.

E. A. Mosher, Executive Director
League of Kansas Municipalities

James W. Collins
Mid-Continent Oil & Gas Association

Mari Peterson, Executive Director
Kansas Natural Resource Council

Michael Everhart, Chairman
Environmental Section
Kansas Public Health Association

Donald P. Schnacke
Kansas Independent Oil & Gas Assoc.

Rob Hodges
Kansas Chamber of Commerce
and Industry

NOTE: The signing of this document by individual task force members indicates that the task force member, as an individual, acknowledges participation with the task force. Their individual signatures do not necessarily signify endorsement of this document by the organization they represent.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

HAZARDOUS WASTE INJECTION WELL TASK FORCE

RECOMMENDATIONS

General Policies

1. Permitting: A hazardous waste injection well should be permitted only if it is deemed the most reasonable method after consideration of all other options. Factors to be considered in determining the most reasonable method may include, but are not limited to, health and environmental effects, alternate treatment and disposal technologies, potential for reuse, and economic impacts.

2. Pretreatment: Prior to injection, the fluids must meet minimum pretreatment requirements that are set by the Secretary. The purposes of the pretreatment requirements include protecting public health and the environment if the injection well fluids were to inadvertently enter useable aquifers or surface waters, and encouraging adoption of alternatives to the injection of hazardous waste. In addition, pretreatment should render the injected fluid compatible with the well string and with the disposal formation.

   In setting these requirements, the Secretary shall consider values 100 times applicable drinking water standards and values 100 times applicable 10^{-5} cancer risk levels, or other values necessary to prevent contamination of underground drinking water supplies, to protect the public health, and to take into account environmental and compatibility considerations.

3. Pressure Injection: All systems other than zero or negative well head pressure injection of hazardous wastes should be prohibited in the State of Kansas.

4. External Review: A hazardous waste injection well review board should be established in order to recommend approval, denial or conditions for approval of all hazardous waste injection well applications.

   The review board should consist of up to 7 members. The review board should have expertise represented in the following areas: geology, hydrology, chemistry, toxicology, process engineering and well construction engineering. The members of the review board may be compensated for their work in reviewing applications. The deliberations of the review board should be open to the public.

   It also is recommended that this review board may be used by the Secretary, for review of applications for other types of hazardous waste disposal facilities.

Application Requirements

5. Necessary Information: The applicant should be responsible for providing the information necessary for the Secretary to determine that well injection of the hazardous waste in question is the most reasonable method after consideration of all other options.

6. Area of Review: The area of review for all hazardous waste injection wells should be one-half (½) mile or shall extend to the limits of the estimated zone of endangering influence, whichever is greater. The estimated zone of endangering influence shall be defined as that area where the cone of "impression" intercepts the boundaries of a useable aquifer.

7. Field Verification: The location of all holes and abandoned wells within the area of review should be ascertained by means of a record search and a field survey, including interviews. The results of the survey should be documented in a report, with a portion of the report including a map to geographically document the location of all holes and abandoned wells within the area of review.

8. Application Fee: In order to defray the costs to the Department for initial review of an application for a hazardous waste injection well facility, the applicant should submit an application fee of $25,000 with the permit application. In cases of a permitted facility submitting an application for the construction and operation of a new well on the permitted site, the permit fee shall not exceed $10,000.

Permit Conditions

9. Liability Coverage: Insurance requirements should be modified to require not less than $1,000,000 per person and $1,000,000 per occurrence for bodily injury or death and $3,000,000 for all damages to the property of others. Minimum amount of coverage should be $3,000,000.

   In lieu of insurance, a financial equivalency requirement which is consistent with the federal requirement (40 CFR 264.147(f)) may be allowed. Higher amounts for insurance, bonds or equivalent may be required by the Secretary.

10. Long-term Assurances: Closure and post-closure requirements will be met by compliance with the federal regulations (40 CFR 264.111 through 40 CFR 264.120) as effective September 1, 1984.

    Financial requirements will be met by compliance with the federal regulations (40 CFR 264.141 through 40 CFR 264.151) as effective September 1, 1984.

11. Monitoring:

a. Injection fluids received from multiple generators by a hazardous waste facility, even if treated at the hazardous waste facility before injection, should be batched tested and the chemical composition confirmed by laboratory analyses prior to injection. However, laboratory analysis of the composition of homogeneous and continuously generated injection fluids generated and disposed at a single site may be permitted on a monthly basis. The results of such laboratory analyses should be the basis upon which the Secretary will determine whether injection of the fluids may occur.

Monitoring should be required only for constituents which were approved for injection. The Secretary may allow for monitoring of indicator constituents rather than the full approved list of constituents, and for other constituents as deemed necessary.

b. Monitoring wells should be required in appropriate geologic zones as determined by the Secretary to be necessary to protect usaeble aquifers.

c. Records of the continuously monitored injection pressure, flow rate, injection volume and annular pressure should be maintained, in addition to the weekly average, maximum and minimum values of these parameters.

d. Monitoring results should be reported to the Department on a monthly basis.

12. Permit Review Term: The Secretary should review each permit for a class I hazardous waste injection well at least every year, to determine whether it should be modified, revoked or reissued.

13. Permit Renewal Fee: In order to defray the costs to the Department for renewal of a class I hazardous waste injection well permit, as identified in 28-46-10-a, the applicant should submit a permit renewal fee not to exceed $10,000, the amount of which will be determined by the Secretary.

On-going Oversight

14. Monitoring Fees: In order to defray the costs to the Department of monitoring a hazardous waste injection well, the fee schedule should be increased from a quantity of not to exceed $10,000 annually to a quantity of not to exceed $25,000 annually. The higher amount is intended to provide for on-site witnessing of injection well operations, if determined appropriate by the Secretary. The amount of the fee will be determined by the Secretary.

15. Integrity Tests: The mechanical integrity of hazardous waste injection wells should have to be demonstrated by the permittee every two years. The Secretary shall provide for a qualified state inspector to witness all mechanical integrity tests performed.

16. Inspections: As a minimum, the Secretary should direct that a monthly, unannounced site inspection be conducted in order to ensure full compliance with permit requirements.

17. Task Force: The Hazardous Waste Injection Well Task Force should be reconvened annually to evaluate program policies and implementation, and to provide its recommendations to the Secretary.

LEAGUE OF WOMEN VOTERS OF KANSAS

909 Topeka Avenue-Annex Topeka, Kansas 66612 (913) 354-7478

STATEMENT ON THE USE OF UNDERGROUND INJECTION WELLS
FOR THE DISPOSAL OF HAZARDOUS WASTES

During 1982, the members of the League of Women Voters of Kansas studied and discussed the many aspects of hazardous waste management in general and also focused on the situation in Kansas. Member agreement on waste generation, transportation, facility siting and management options was reached through a consensus process and serves as the basis of the League's position on hazardous waste management in Kansas.

It is the League's position that the use of underground injection wells for disposal of hazardous wastes is an unacceptable procedure. Consequently, the League urges the prohibition of new wells and an expeditious phase out of existing wells.

Should a prohibition on the disposal of hazardous wastes by underground injection wells not occur, the League would support the recommendations of the Task Force as they could provide for a better defined and more stringent program for hazardous waste disposal by underground injection wells.

September 7, 1984

Kansas Natural Resource Council

HAZARDOUS WASTE INJECTION WELL TASK FORCE

Minority Statement

We recognize that the policies recommended by the Hazardous Waste Injection Well Task Force represent a significant improvement over current policies, and we recommend, at a minimum, that these policies be implemented.

We still hold serious reservations about the ability to contain hazardous chemicals underground and to monitor their containment. We also believe it is the responsibility of the state and the Department of Health and Environment to address the source of environmental problems, not merely their symptoms.

We recognize the interest and concern of the Kansas Legislature in reducing hazardous waste generation and enhancing hazardous waste treatment. We do not intend for these policy recommendations to preclude the legislature from taking stronger action in this area.

Therefore, we recommend that these proposed policies be viewed as only the first step toward an ultimate goal of banning underground injection of hazardous wastes.

P.O. Box 2128 • Topeka, KS 66603 • 913/233-6707