Kansas Water Plan
Water Quality Policy and Institutional Framework
January 2009

This *Kansas Water Plan* Section describes the current policy and institutional framework through which water quality protection and restoration is addressed in Kansas and provides an overview of progress towards meeting established goals and objectives.

Basin sections of the *Kansas Water Plan* provide additional detail regarding basin priority issues, including water quality.

Overview

Water quality management falls into two general categories: surface water quality and ground water quality. Differing laws and policies govern each category.

The federal *Clean Water Act*[1] (CWA) provides the framework for management of water quality in the nation's surface waters. Kansas compliance with CWA provisions has allowed the U.S. Environmental Protection Agency (EPA) to grant "primacy" to Kansas for CWA administration and enforcement in the state.

The Kansas Department of Health and Environment (KDHE) oversees administration of the CWA, although other state agencies play important roles. This compliance includes enactment of state statutes and administrative regulations consistent with federal policy and the various assessment and reporting requirements involved. Kansas has also: 1) established an extensive surface water quality monitoring program; 2) developed numerous Total Maximum Daily Loads (TMDLs) to restore impaired waters; 3) implemented an innovative Watershed Restoration and Protection Strategy (WRAPS); and 4) developed a nutrient reduction plan.

Federal legislation of significance primarily to ground water quality includes the *Resource Conservation and Recovery Act of 1976* (RCRA),[4] the associated *Comprehensive Environmental Response*, *Compensation and Liability Act (Superfund) of 1980* (CERCLA),[5] and the *Superfund Amendments and Reauthorization Act of 1986*.[6] These Acts address solid and hazardous wastes and storage tanks.

The 1996 amendments to the federal *Safe Drinking Water Act* (SDWA),[7] while focused on finished drinking water at the tap, also calls for source water assessments of public water systems treating raw water. Sources of raw water may be either surface water or ground water. These assessments identify potential sources of drinking water contaminants.

The Kansas Corporation Commission (KCC) has authority to regulate and remediate oil and gas exploration and extraction activities that may affect water quality.

Kansas Water Plan Guidance

The *Kansas Water Resources Planning Act*[8] provides the statutory authorization for addressing water quality management in the *Kansas Water Plan*. This Act established long-range goals for the management, conservation and development of the waters of the state, including:

- Protection and the improvement of the quality of the water supplies of the state; and
- Prevention of the pollution of the water supplies of the state.

Objectives - Three Objectives, added to the *Kansas Water Plan* in 1998, provide targets for quantifying progress in implementing *Kansas Water Plan* water quality protection and restoration policy recommendations. These objectives are as follows:

- Reduce the average concentration of bacteria, biochemical oxygen demand, dissolved solids, metals, nutrients, pesticides, and sediment that adversely affect the water quality of Kansas lakes and streams.
- Reduce the average concentration of dissolved solids, metals, nitrates, pesticides, and volatile organic chemicals that adversely affect the quality of Kansas ground water.
- Ensure that water quality conditions are maintained at a level equal to or better than year 2000 conditions.

While an assessment of each of these objectives was conducted, assessment of water quality monitoring data collected by the KDHE as required by the CWA is now considered to provide a better basis upon which to identify trends and target funding and program assistance to areas of greatest need.

Watershed Approach

The *Kansas Water Plan* has promoted a voluntary, incentives-based approach to surface water quality management that is focused on individual watersheds.

Kansas Water Plan
Water Quality Policy and Institutional Framework
January 2009

Active Policy Recommendations – There are no active Water Quality Management policy recommendations. See the Wetland and Riparian Management Policy and Institutional Framework for recommendations in the *Kansas Water Plan* Policy Section: *Enhanced Stream Corridor and Wetland Management to Address Reservoir Sedimentation*. This Policy Section, approved by the Kansas Water Authority (KWA) in January 2009, addresses the following four issues:

- Wetland and Forested Riparian Area Protection
- Stream Stabilization Planning and Implementation to Address Sedimentation in Public Water Supply Reservoirs
- Riparian and Wetland Protection
- Stream Stabilization

Contaminant levels in a stream or lake usually represent the combined impact of all upstream inputs. These contaminant inputs originate from either point or nonpoint sources. Point sources are those that can be tied to a specific point of discharge such as a factory, wastewater treatment plant, or a livestock feeding operation. Nonpoint sources generally involve contaminants carried overland in storm runoff from large land areas such as agricultural fields or paved areas.

Wetland and riparian areas are important elements of a properly functioning watershed. Benefits derived from riparian or streamside areas include erosion and sediment control, timber production, wildlife habitat, water quality protection, recreation, and aesthetic values. Wetlands in Kansas provide unique wildlife habitat, floodwater detention, ground water recharge, and water quality benefits.

Reservoir Sustainability Initiative – The long-term ability of Kansas reservoirs to provide public water supply and other benefits has become a concern. Loss of water supply storage space in reservoirs due to sediment deposition is a primary issue. In November 2007, the KWA adopted a strategic plan for sediment and surface water management policy. Development of policies to provide enhanced stream corridor and wetland management tools are part of this initiative as indicated in the above active policy recommendations summary.

Please see the *Kansas Water Plan* Wetland and Riparian Management Policy and Institutional Framework Section for a comprehensive description of the policies and institutional framework upon which wetland and riparian area management efforts are undertaken.

Surface Water Quality: Clean Water Act Compliance

The CWA provides the framework for management of water quality in the nation's surface waters. Initially enacted in 1948 as the *Federal Water Pollution Control Act*, the CWA, as it has come to be known, was significantly expanded and strengthened in 1972, amended in 1977 and reauthorized in 1987. Two fundamental goals of the CWA are to: 1) eliminate the discharge of pollutants into the nation's waters, and 2) achieve water quality standards such that all waters are fishable and swimmable. No such umbrella federal legislation exists for ground water.

At first, the CWA focused on point sources of pollution. The primary management tool was discharge permits issued by the states as part of the National Pollutant Discharge Elimination System (NPDES). Section 319 of the 1987 CWA reauthorization added a focus on nonpoint pollutant sources.

State-established surface water quality standards, approved by the EPA are the keystone of the CWA. States are required to submit an assessment of surface water quality conditions to the EPA every two years. A list of impaired waters not meeting water quality standards must also be submitted every two years for EPA approval. TMDLs must be developed for waters that are chronically impaired.

Water Quality Standards

Section 303 of the CWA requires the states to set surface water quality standards for waters within their jurisdictions. Water quality standards define uses for water bodies and identify specific water quality criteria to support those uses. These standards also contain antidegradation policies designed to protect improvements in water quality and existing high quality waters.

Once surface water quality standards have been adopted by the states and approved by the EPA, they are used in determining NPDES permit limits, water body impairment status and TMDL endpoints.

Other policies and provisions explaining how the standards are to be implemented etc. may also be part of water quality standards.

Kansas Surface Water Quality Standards - All Kansas surface waters have been determined to be either classified, meaning they are subject to meeting Kansas Surface Water Quality Standards[9] or unclassified. The

designated uses of classified surface waters are listed in the Kansas Surface Water Register. These designated use categories are:

- Aquatic Life Use (special, expected or restricted);
- Contact Recreational Use (five subcategories);
- Domestic Water Supply Use;
- Food Procurement Use;
- Ground Water Recharge;
- Industrial Water Supply Use;
- Irrigation Use; and
- Livestock Watering Use.

If a designated use for a specific water body is contested, a Use Attainability Analysis may be conducted.

Water Quality Monitoring and Assessment

The KDHE's Bureau of Environmental Field Services (BEFS) Section monitors water quality conditions in streams and publicly owned lakes and wetlands throughout Kansas. This is accomplished through these long-term monitoring programs: 1) Lake and Wetland, 2) Stream Chemistry, 3) Stream Biology, 4) Stream Probabilistic, and 5) Fish Tissue Contaminant. KDHE also conducts special investigations, often in cooperation with other state or federal agencies.

These monitoring and assessment programs are designed to meet the environmental surveillance and reporting requirements of the CWA and other applicable federal and state laws. Among these requirements are the state's biennial water quality assessment (Section 305(b) Report)[10] and the list of water-quality limited surface waters (Section 303(d) List).[11] These water quality data are also applied in the formulation of TMDLs for Section 303(d)-listed water bodies.

In addition to these KDHE programs, the Kansas Department of Wildlife and Parks (KDWP) Stream Assessment and Monitoring Program surveys fish and macroinvertebrate populations in streams. These populations may serve as good surrogate indicators of water quality.

2008 Integrated Assessment – The 2008 *Kansas Integrated Water Quality Assessment*[3] fulfills water quality reporting requirements contained in sections 303(d), 305 (b) and 314(a) of the federal CWA.

Requirements related to Section 305(b) of the CWA were addressed, in part, by using data from the newly implemented Stream Probabilistic Monitoring Program to estimate stream mileage that fails to support those uses (aquatic life support, food procurement and recreation) recognized in Section 101(a) of the CWA. Sampling was targeted to those classified streams that contained water during the summer low-flow periods of 2006 and 2007. Due to severe drought extending into 2006, only 18,679 miles or about 67% of the state's classified stream mileage was sampled.

Cheyenne Bottoms. Photo courtesy Dennis Schwartz

Results indicated that some 6,903 miles of the total assessed stream mileage supported all three designated uses, while 11,776 miles failed to support one or more designated uses.

Major causes for non-support for streams, in order of prevalence, were nutrient enrichment, natural climatic impacts, sedimentation, elevated *E. coli* concentrations and hydrological modifications. Sources primarily responsible for pollutant loadings and/or use impairments included agriculture (irrigated and non-irrigated crop production, livestock grazing and feeding operations and unrestricted cattle access), natural phenomena such as weather-related impacts and physical habitat degradation.

Of the 190,982 acres assessed in targeted lakes, some 155,340 acres were impaired for one or more designated uses. These lake assessment results were very similar to past assessments. Nutrient and eutrophication-related impacts dominated the list of water quality problems, with agriculture, urban runoff, natural sources and non-point source nutrient loads being the most dominant sources.

Kansas Water Plan
Water Quality Policy and Institutional Framework
January 2009

Water bodies consistently failing to meet water quality standards for their designated use(s) are identified on the Section 303(d) list of water quality limited surface waters. The CWA requires states to identify such waters every two years. The 303(d) list is used to identify those waters targeted for the development of TMDLs. The 2008 Kansas list identified water quality impairments requiring the development of TMDLs.

Other Assessment Information – A *Kansas Unified Watershed Assessment*[12] was conducted by KDHE and the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) in 1998. Water quality monitoring data and other natural resource condition information were used in the assessment. These Assessments were a key part of the Clean Water Action Plan which also included watershed restoration action strategies. These strategies were a predecessor to the current watershed restoration and protection strategies (WRAPS).

Of 92 HUC-8 level watersheds examined in Kansas, 71 were classified as in need of restoration (Category I). Nine watersheds were classified as needing protection (Category II).

Watershed Condition Reports prepared by KDHE provide information with which to assess conditions within a watershed. Also, a joint effort is being made by the NRCS and KDHE to conduct Rapid Watershed Assessments which include estimates of conservation needs within the watershed. Rapid assessments have been completed in 14 HUC-8 level watersheds and are in-progress in an additional 10 HUC-8 level watersheds.

National Pollutant Discharge Elimination System

As authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge directly into waters of the United States. Point sources include any discernable, confined and discrete conveyance such as a pipe or ditch. Confined Animal Feeding Operations (CAFOs) are also included.

An NPDES permit is a license for a facility to discharge a specific amount of a pollutant into a waterbody under certain conditions to protect human health and the integrity of aquatic life. The KDHE is the EPA delegated permitting authority for NPDES permits in Kansas. Permits are issued for a specific period of time not to exceed five years.

Municipal – The Municipal Programs Section of KDHE regulates discharge from municipal waste treatment facilities. Municipal wastewater treatment infrastructure plays an important role in meeting established water quality goals. Replacement and routine maintenance of this infrastructure can present a significant financial challenge for communities. Construction grants were available until the early 1990s under the CWA and were administered by KDHE. The grants provided 50% to 75% of eligible project costs. The CWA amendments of 1987 phased-out the Construction Grants Program and replaced it with a revolving loan program to assist municipalities in the construction of wastewater collection and treatment systems by providing low interest loans. The State Revolving Loan Program is administered by KDHE and has been in-place since the early 1990s.

Industrial - The Industrial Programs Section of KDHE administers regulatory permitting programs for the handling, treatment and disposal of industrial wastewater and the pre-treatment of industrial wastes directed to municipal wastewater collection and treatment systems subject to federal CWA provisions or Kansas surface water quality standards.

Stormwater – The CWA amendments of 1987 required the EPA to adopt regulations to require NPDES permits for stormwater dischargers. The Kansas Municipal Stormwater Program has designated 39 entities within five urbanized areas and 19 municipalities outside of these urbanized areas as regulated municipal separate storm sewer systems requiring individual stormwater NPDES permits. In addition, two general permits have been developed; one for small municipal separate storm sewer systems in urbanized areas and the other for small systems outside urbanized areas. Urbanized areas include Wichita; Topeka; Lawrence, St. Joseph, MO-KS and Kansas City, MO-KS.

The Industrial Programs Section manages permits for stormwater discharges associated with construction and industrial activities.

Confined Animal Feeding Operations - In Kansas, the Livestock Waste Management Section of KDHE's Bureau of Water administers Kansas laws regarding livestock waste. All CAFOs with an animal unit capacity of 300 or more must register with KDHE. Any facility with an animal unit capacity of 1,000 or more must obtain a Livestock Waste Management Permit. Additionally, any facility that represents a significant water pollution potential must register with KDHE.

Total Maximum Daily Loads

The CWA requires states to develop TMDLs for water bodies identified on the state's List of Impaired Waters. [11] TMDLs are quantitative plans and strategies for pollutant load reduction needed to achieve the state's surface water quality standards.

In 1995, a complaint was filed against the EPA, compelling enforcement of Section 303(d) of the CWA by establishing TMDLs in Kansas. The State intervened in the litigation and a settlement was reached; the court decree approving the settlement was made on April 13, 1998. The Court Decree included a schedule for TMDLs to be developed and submitted in each of the state's 12 major river basins by 2006.

As of June 30, 2006, Kansas had completed its obligation to develop TMDLs in the 12 river basins of the state. The Court Decree was dismissed on January 22, 2007. The Kansas TMDL Program is now proceeding on a five-year cycle, rotating through each river basin to develop and revise TMDLs for selected impairments identified in the current Section 303(d) List.

The KDHE Watershed Planning Section is responsible for the state's TMDL Program. Selection of impairments to be addressed will be made jointly by KDHE and the basin advisory committees. Implementation of high priority TMDLs is included in each *KWP* basin section as a basin priority issue.

Surface Water Quality: Other Plans, Programs and Strategies

While not necessarily tied directly to compliance with the CWA, the following plans, programs or strategies enhance achievement of its goals. Also, while primarily addressing surface water quality, these efforts may address ground water quality as well.

Surface Water Nutrient Reduction Plan

Nutrients including phosphorus and nitrogen are one of the greatest impediments to achieving improved quality of surface waters in Kansas. Additionally, nutrients exported beyond Kansas contribute to water quality problems elsewhere, such as development of a "dead zone" within the Gulf of Mexico where many bottom-dwelling organisms have been killed or forced to move.

The EPA has requested that all states develop plans to establish water quality criteria for nutrients in surface waters. Kansas has focused on nutrient reduction rather than nutrient criteria as proposed in the *Kansas Surface Water Nutrient Reduction Plan*.[2] Reduction targets have proven to be effective elsewhere in the United States, notably in Connecticut and North Carolina.

As indicated in the Nutrient Reduction Plan, approximately 51,000 tons of total nitrogen (TN) and 7,700 tons of total phosphorus (TP) are exported from Kansas annually. Point source contributions to this export are 18 % for TN and 25% for TP. While small, these point source contributions are significant. Analysis indicates that discharges from the relatively small number of large wastewater treatment facilities are responsible for the vast majority of the point source contribution.

An overall 30% reduction in the total export of both TP and TN from Kansas is proposed. The 30% overall reduction in TN export is expected to be accomplished by a 55% reduction in contributions from point sources combined with a 24% reduction from nonpoint sources. For the 30% reduction in TP exports, component reductions from point and nonpoint sources are projected to be 55% and 22%, respectively.

Percentage reductions needed to achieve this overall 30% export target will vary by river basin. Figures 1 and 2 show a county-level improvement potential index for TP in surface waters and for TN in surface waters, respectively. This index was devised to screen counties based on the relative potential improvement that could be expected from implementation of nonpoint source best management practices (BMPs). Higher index values indicate a greater potential for improvement.

The proposed Kansas approach emphasizes specific controls for large sewage treatment plants along with targeted practices for controlling nonpoint nutrient sources.

Specific actions necessary to meet the 30% reduction target are expected to be developed through WRAPS and establishment of high priority TMDLs. The policy infrastructure for both approaches is in place.

Kansas Watershed Restoration and Protection Strategy (WRAPS)

Kansas WRAPS is a planning and management framework that engages stakeholders within a watershed in a process to:

Kansas Water Plan
Water Quality Policy and Institutional Framework
January 2009

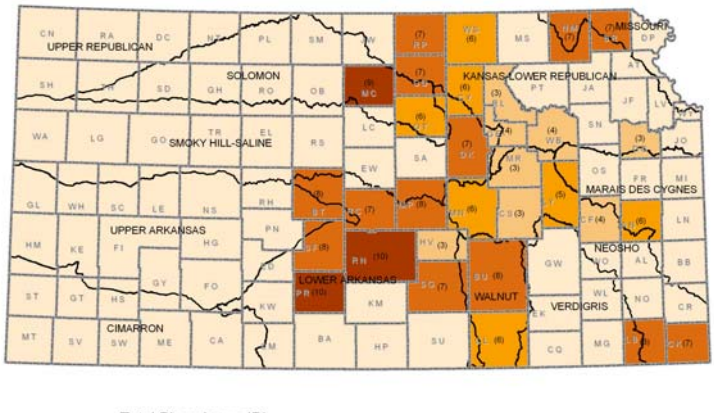

Figure 1.

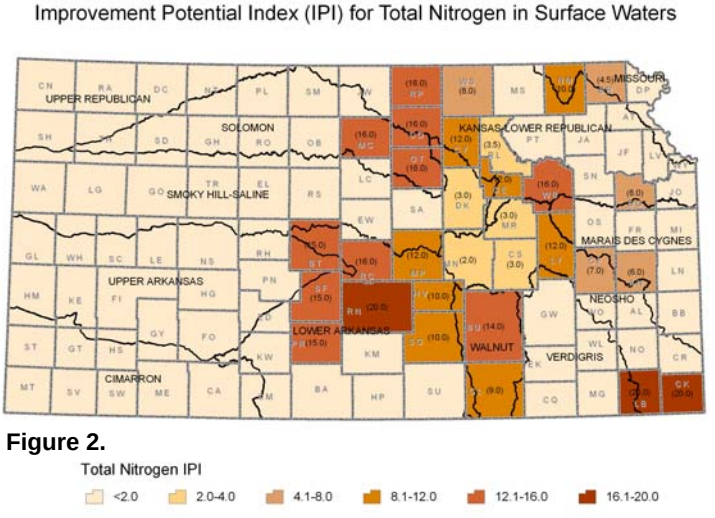

Figure 2.

- Identify watershed restoration and protection needs.
- Establish watershed management goals.
- Create a cost-effective action plan to achieve goals.
- Implement the strategic action plan.

The WRAPS[13] is the result of a long history of Kansas water resources management programs and activities dating back to the 1950s. WRAPS was adopted in 2004 through a Memorandum of Agreement among member agencies of the Governor's Natural Resources Subcabinet. The strategy provides the general program framework and guidance for development and implementation of WRAPS in priority watersheds.

A special WRAPS fund has been established through the KDHE with federal funding through the EPA CWA Section 319 Program and state funding through the State Water Plan Fund. Other state and federal programs may be used to support various components of a WRAPS, particularly implementation projects. Local resources may also be used. Four categories of projects are eligible for funding; development, assessment, planning and implementation.

Proposals for WRAPS projects are evaluated based on criteria established by the interagency WRAPS work group. Watersheds above federal reservoirs (Figure 3) that serve public water supply needs have been identified as initial state interest priority areas.

As of March 2008, there were 44 active WRAPS projects located throughout Kansas as shown in Figure 4.

Nonpoint Source Pollution Control Programs – Implementation of WRAPS projects is often accomplished through nonpoint source (NPS) pollution control programs. NPS programs are delivered through coordinated efforts at the federal, state and local levels.

At the federal level, two key programs are delivered by the NRCS. The Conservation Reserve Program (CRP) is a voluntary program that provides annual rental payments to agricultural producers to safeguard environmentally sensitive lands by planting long-term, resource conserving vegetation to control soil erosion, improve water quality and enhance wildlife habitat. Program signups are held periodically. A continuous signup provision of the CRP provides funding for installing vegetative buffers and other practices to protect rivers and streams and other environmentally sensitive areas.

As of July 31, 2008, over 3.1 million acres were enrolled in the CRP in Kansas; approved contracts for all continuous programs, including Conservation Reserve Enhancement Program (CREP), covered nearly 97,000 acres. Additional contracts were pending approval at that time. Contract periods vary from 10-15 years.

The NRCS Environmental Quality Incentive Program (EQIP) provides technical and financial assistance to eligible farmers and ranchers to address soil, water, air and related natural resource concerns on their agricultural land. State water quality priority areas, such as high priority TMDL watersheds, source water assessment areas and federal multipurpose reservoirs are considered in the evaluation criteria for ranking and funding EQIP applications.

The U.S. Geological Survey (USGS) is involved with a variety of water quality monitoring and assessment pro-

Kansas Water Plan
Water Quality Policy and Institutional Framework
January 2009

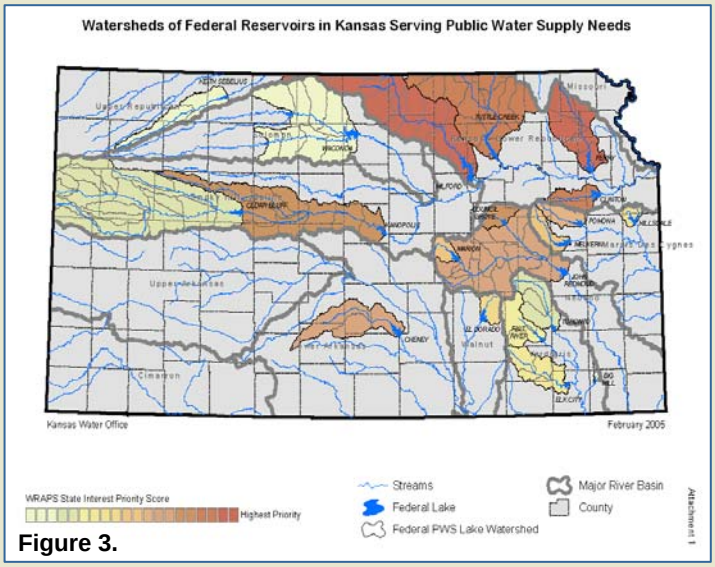

Figure 3.

jects that assist cooperators in addressing water quality related issues.

At the state level, the State Conservation Commission (SCC) has several programs that provide cost-share assistance to agricultural producers and other landowners for implementing BMPs that enhance water quality, reduce soil erosion and protect or restore riparian and wetland resources.

Notable among these are the NPS Program and the Kansas Water Quality Buffer Initiative. The NPS Program provides funding for BMPs through county conservation districts that have developed and adopted a Local Nonpoint Source Pollution Management Plan. Currently, 105 counties have adopted plans. The Buffer Initiative provides per acre rental payments supplementing federal rental payments received through the continuous CRP to install vegetative buffers along rivers and streams in priority watersheds to improve water quality.

The KDHE Watershed Management Section administers the EPA Section 319 Grant Program which provides funding for a variety of water quality and watershed related projects. The Local Environmental Protection Program (LEPP) provides funding to local units of government for adoption and implementation of county environmental codes.

University affiliated programs play an important role in water quality restoration and protection. The Kansas State University Research and Extension Program encompasses a variety of water quality related research projects as well as supporting watershed assessment and planning activities through county extension agents and watershed specialists. The Kansas Biological Survey (KBS) and the Kansas Geological Survey (KGS) at the University of Kansas are also engaged in water quality related research and watershed assessment and management projects.

The Kansas Department of Agriculture (KDA) administers programs relating to the use and regulation of pesticides and fertilizers.

Most of the state's water quality programs ultimately involve local entities such as the county conservation districts or watershed districts for implementation of on-the-ground projects.

Please see the *Kansas Water Plan Wetland and Riparian Management Policy and Institutional Framework* Section for additional information about NPS programs.

Source Water Assessment

Enacted in 1972, the federal SDWA originally focused primarily on raw water treatment as the means of providing safe drinking water at the tap. Amendments in 1986 broadened the scope of the SDWA, recognizing the importance of source water protection. As is the case with the CWA, the EPA has designated the KDHE as having primary responsibility for administering and enforcing the SDWA in Kansas.

Each state is required to develop a Source Water Assessment Program (SWAP). Wellhead protection is included. Additionally, states are required to develop a source water assessment for each public water system that treats raw source water.

KDHE has completed source water assessments for all 763 Kansas public water systems required to have them. As indicated in *Kansas Source Water Assessment*,[16] 54% of the 677 systems utilizing a ground water source received a low susceptibility analysis score; 45% were scored moderate and one percent high. Fifty-one percent of surface water systems received low susceptibility scores, with 43% scoring moderate and six percent high. Communities are being encouraged by KDHE to use these assessments as the foundation for development of a local source water protection plan.

Spillage of solvents, pesticides and other chemicals; illegal dumping of wastes: abandoned industrial facilities and landfills; leaking storage tanks, oil and gas explora-

tion and production; and surface mining are each examples of potential source water contamination sources.

Other Water Quality Management Tools

Mechanisms existing under state authority to manage pollutant loadings, particularly those of a nonpoint nature are described below.

Critical Water Quality Management Areas - KDHE has authority to establish Critical Water Quality Management Areas (CWQMAs) under the authority of K.S.A. 65-171a and 171d, and K.S.A. 65-3301 *et seq.* Watersheds may be designated as a CWQMA because of pollutant sources that may cause damage to resources of the state; public nuisance or health hazards; destruction of fishery habitat; excessive deposition of sediment; additional risk to threatened or endangered species; or violation of water quality standards. Pollutant sources within a CWQMA are evaluated and a management plan is developed.

Pesticide Management Areas - The KDA has authority to develop Pesticide Management Areas (PMAs) when notified by the EPA or KDHE that a pesticide poses a serious threat to the public health, safety and welfare or to the natural resources of the state. A technical advisory committee is used in establishing the PMA boundaries and in developing a management plan.

Sanitation Zones - K.S.A. 65-187 gives the secretary of health and environment authority to adopt rules and regulations designating and establishing Sanitation Zones to regulate and control development of areas around certain water impoundments to prevent pollution, assure sound and economical development and maintain healthy and sanitary conditions.

Source Water Protection Planning – The SDWA requires KDHE to provide assistance and coordinate the completion of public water system source water assessments as described previously. While the SDWA doesn't require source water protection plans to be developed, KDHE encourages public water suppliers and their surrounding communities, on a voluntary basis, to use the source water assessments as the foundation for future protection planning efforts.

Ground Water Quality: Overview

As indicated previously, no umbrella federal ground water quality legislation comparable to the CWA has been enacted. Emphasis at both the federal and state levels has been on regulation of solid and hazardous waste disposal, storage tanks, and remediation of previously contaminated sites. Much of this emphasis has its roots in concerns about drinking water quality and enhances attainment of federal SDWA goals.

State initiatives related to ground water quality include a Governor's Executive Order covering the Equus Beds aquifer and identification of sensitive areas for wastewater lagoons. Executive Order 00-04, executed by Governor Graves on March 15, 2000, ordered the Secretary of the KDHE to identify all known sources of existing and potential pollution in the Equus Beds aquifer of south central Kansas.

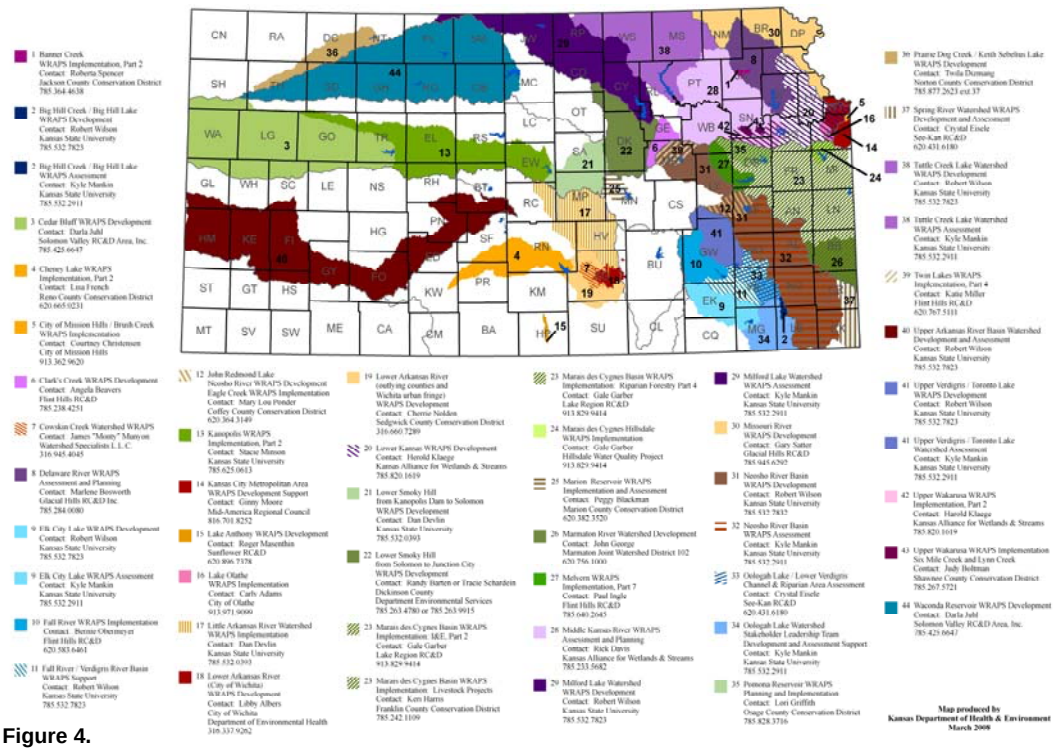

Figure 4.

Regulations adopted by the KDHE in 2004 (K.A.R. 28-16 -160 through K.A.R. 28-16-174) cover municipal, commercial and industrial wastewater lagoon requirements. Sensitive groundwater areas have been delineated in regard to implementing these regulations.

While the following certainly may have surface water implications, ground water aspects tend to take precedence in Kansas.

Resource Conservation and Recovery Act and Related Federal Statutes

The federal Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to ensure that the huge volume of municipal and industrial solid wastes generated nationwide were managed properly. Four goals were set by RCRA including protection of human health and the environment from the hazards posed by waste disposal. Three interrelated programs were established to meet these goals:

- Solid Waste Program
- Hazardous Waste Program
- Underground Storage Tank Program

Although RCRA created the framework for proper management of solid waste, it does not address the problems of hazardous waste found at inactive or abandoned sites or those resulting from spills that require emergency response. These problems are addressed by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly called Superfund, which was enacted in 1980. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986.

Kansas Compliance and Implementation - As with most federal environmental legislation, RCRA and CERCLA encourage the states to develop their own waste management programs that meet federal standards in lieu of direct implementation of the federal program by the EPA. The Kansas Environmental Response Act[14] of 1988 provides authority and guidance for implementation of CERCLA in this state.

Federal and state law requires reporting of accidental spillage of any materials that may pollute water, air or soil. An exception is made for very minor spills and escapes occurring at oil and gas exploration and production sites. Cleanup of these spills is required.

KDHE's Bureau of Environmental Remediation (BER) is charged with responding to environmental emergencies and with managing environmental contamination through pollution source control, containment or remedial action. The BER is responsible for assessment and remediation of contaminated sites, with the exception of those related to oil and gas activities which are the responsibility of the Kansas Corporation Commission.

Ground Water Quality Monitoring

The Kansas Ground Water Monitoring Program was managed and operated by the KDHE from 1990 through 2001. However, the ground water quality network was discontinued in fiscal year 2002 due to budget cuts. The 1990-2001 data includes 1,736 analyses from a maximum of 200 wells used for public water supply, rural/ domestic water supply, irrigation, livestock watering, industrial water supply, ground water monitoring, or a combination of these uses that were sampled for inorganic chemistry, pesticides, volatile organic compounds, radionuclide and radon samples.

The primary objective of this monitoring program was to provide reliable information on ground water quality for use in the identification of any temporal and spatial trends in aquifer chemistry. These trends could be associated with alterations in land use patterns, advances in land treatment methods and other resource management practices, changes in ground water availability or withdrawal rates, and regional climatic variations.

Ground water quality is also monitored for specific projects or areas by state and local agencies including the KDHE, KGS; KCC; KDA and the groundwater management districts.

Remediation of Contaminated Sites

State agency responsibility for contaminated site remediation depends upon the source of the contamination. Where contamination is related to oil or gas production at the production site, the KCC is responsible; otherwise, remediation is the responsibility of the KDHE.

Remediation involves the assessment, investigation, cleanup and monitoring of contaminated sites. Once reported, potentially contaminated sites are inspected to assess the immediate and long-term health and environmental risks. If the site poses an immediate risk, emergency response actions are taken. If the site is determined to pose a treat to human life or the environment,

an investigation is conducted to characterize the magnitude and extent of contamination and to evaluate whether remediation may be needed.

Remediation of a site may require removal (excavation of soil, drum removal), on-site clean up, off-site treatment or containment of contaminants. Where human health is threatened, alternate drinking water supplies may be provided.

KDHE encourages those responsible for the contamination to work cooperatively to achieve an appropriate cleanup. However, at so-called orphan sites a responsible party can't be identified, or is unable or unwilling to participate in remedial actions. The State Water Plan Contamination Remediation Program was developed specifically to provide a means of addressing such sites which, for whatever reason, fall outside the scope of other programs. Funding is provided through the SWPF.

State Water Plan Program - Contamination sites in the KDHE State Water Plan Remediation Program are prioritized based upon health risk to identify those sites requiring immediate attention. The majority of sites are being addressed in response to ground water impacts that have affected public and/or private drinking water wells.

During 2007, four sites were added to the program and two sites were removed, resulting in a total of 94 program sites as of December 31, 2007. Of these sites, 37 were in the investigation phase, 36 were being monitored and seven were in active remediation. Site summaries for all sites currently being managed through this program are available. Information regarding all contaminated sites managed by KDHE, regardless of program, is available in the Identified Sites List.

Oil and Gas Related Sites - Abandoned oil and gas wells present a significant public safety and water contamination potential unless properly plugged. The KCC: Abandoned Oil and Gas Well/Site Remediation Program uses monies from the Abandoned Oil and Gas Well/Site Remediation Fund established in 1996 to plug abandoned wells and remediate surface and ground water contamination related to oil and gas activities. An annual revenue transfer from the SWPF helps provide funding.

Resources

1. Clean Water Act. http://www.epa.gov/lawsregs/laws/

2. Kansas Department of Health and Environment, Bureau of Water. *Surface Water Nutrient Reduction Plan*. December 29, 2004.

3. Kansas Department of Health and Environment. April 1, 2008. *Kansas Integrated Water Quality Assessment.*

4. Resource Conservation Recovery Act of 1976. http://www.epa.gov/lawsregs/laws/rcra.html

5. Comprehensive Environmental Response Compensation Liability Act (Superfund) of 1980. http://www.epa.gov/superfund/policy/cercla.htm

6. Superfund Amendments Reauthorization Act of 1986. http://www.epa.gov/superfund/policy/sara.htm

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