28-15

Kansas Administrative Regulations
Kansas Department of Health and Environment

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Office of Public Information
Kansas Department of Health & Environment

Notes

The *Kansas Register* notes the following changes:

28-15-50
through
28-15-65 New V. 16, p. 1596-1599

28-14-3 and 28-14-4. (Authorized by K.S.A. 1978 Supp. 65-156; effective Jan. 1, 1966; revoked, E-79-13, June 15, 1978; revoked May 1, 1979.)

Article 15.—APPLICATION FOR PERMITS; DOMESTIC WATER SUPPLY

28-15-1 to 28-15-10. (Authorized by K.S.A. 65-162, 65-163; effective Jan. 1, 1966; revoked May 1, 1982.)

28-15-11. **Definitions.** (a) ''Public water supply system'' or ''system'' means a system for delivery to the public of piped water for human consumption, that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. This term shall include any source, treatment, storage or distribution facilities used in connection with the system.

(b) ''Community water supply system'' means a public water supply system which has at least 10 service connections used by year-round residents or that regularly serves 25 year-round residents.

(c) ''Non-community water supply system'' means a public water supply system which is not a community water supply system.

(d) ''Non-transient non-community water supply system'' means a public water supply system that is not a community water supply system and that regularly serves at least 25 of the same persons at least six months per year.

(e) ''Department'' means the Kansas department of health and environment.

(f) ''Secretary'' means the secretary of health and environment.

(g) ''Laboratory tests'' means all bacteriological, chemical, physical or radiological tests made by either the departmental laboratory or an approved laboratory on water samples which were submitted by the operator of a system to confirm the quality of the water.

(h) ''Operating records and reports'' means the daily record and the monthly report of data connected with the operation of the system facilities.

(i) ''Sanitary survey'' means an on-site appraisal of a public water supply system for the purpose of evaluating the adequacy of the water source, facilities, equipment, operation and maintenance.

(j) ''Approved laboratory'' means a laboratory certified and approved by the department to analyze water samples to determine compliance with maximum contaminant levels, or to perform other required analyses.

(k) ''Maximum contaminant level'' (MCL) means the maximum permissible level of a contaminant in water which is delivered to any user of a public water supply system, or measured at other locations specified in these regulations.

(l) ''Distribution system'' means the system of conduits and appurtenances by which a water supply is distributed to consumers.

(m) ''Turbidity'' means the cloudy condition of water caused by the presence of finely suspended matter such as clay, silt, plankton, and microscopic organisms, resulting in the scattering and absorption of light rays. Measured in nephelometric turbidity units (NTU).

(n) ''Point-of-entry treatment device'' means a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

(o) ''Point-of-use treatment device'' means a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that particular tap.

(p) ''Confluent growth'' means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

(q) ''Domestic or non-distribution system plumbing problem'' means a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.

(r) ''System with a single service connection'' means a system which supplies drinking water to consumers via a single service line.

(s) ''Too numerous to count'' means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

(t) ''Coagulation'' means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

(u) ''Conventional filtration treatment'' means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

(v) (1) ''CT or CT Calc'' means the product of ''C'' 2 ''T,'' where:

(A) ''C'' equals the residual disinfectant concentration measured in mg/l and determined before or at the first customer; and

(B) ''T'' equals the corresponding disinfectant contact time measured in minutes.

(2) If a public water system applies disinfectants at more than one point prior to the first customer, it shall determine the CT of each disinfectant sequence before or at the first customer to determine the total percentage of inactivation or ''total inactivation ratio.'' In determining the total inactivation ratio, the public water system shall determine the residual disinfectant concentration of each disinfection sequence and corresponding disinfectant contact time before any subsequent disinfection application point.

(3) ''$CT_{99.9}$'' means the CT value required for 99.9 percent, or 3-log, inactivation of Giardia lamblia cysts. $CT_{99.9}$ for a variety of disinfectants and conditions appears in Tables 1.1-1.6, 2.1 and 3.1 of 40 CFR 141.74(b)(3) as in effect on July 1, 1992.

(4) $CT_{calc}/CT_{99.9}$ is the inactivation ratio.

(5) The sum of the inactivation ratios, or ''total inactivation ratio,'' shown as $S(CT_{calc})/(CT_{99.9})$, is calculated by adding together the inactivation ratio for each disinfection sequence. A total inactivation ratio equal to or greater than 1.0 shall be assumed to provide a 3-log inactivation of Giardia lamblia cysts.

(w) ''Diatomaceous earth filtration'' means the process resulting in substantial particulate removal in which:

(1) a precoat cake of diatomaceous earth filter media is deposited on a support membrane called a septum; and

(2) additional filter media known as body feed are continuously added to the feed water to maintain the permeability of the filter cake while the water is filtered by passing through the cake on the septum.

(x) ''Direct filtration'' means a series of processes, including coagulation and filtration but excluding sedimentation, resulting in substantial particulate removal.

(y) ''Disinfectant contact time,'' which is referred to as ''T'' in CT calculations, means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration ''C'' is measured. Where only one ''C'' is measured, ''T'' shall be the time in minutes that it takes for water to move from the point of disinfectant application to a point before or at the point where ''C'' is measured. Where more than one ''C'' is measured, ''T'' shall be:

(1) for the first measurement of ''C,'' the time in minutes that it takes for water to move from the first or only point of disinfectant application to a point before or at the point where the first ''C'' is measured; and

(2) for subsequent measurements of ''C,'' the time in minutes that it takes for water to move from the previous ''C'' measurement point to the ''C'' measurement point for which the particular ''T'' is being calculated.

Disinfectant contact time in pipelines shall be calculated based on ''plug flow'' by dividing the internal volume of the pipe by the maximum hourly flow rate through the pipe. Disinfectant contact time within mixing basins and storage reservoirs shall be determined by tracer studies or an equivalent demonstration.

(z) ''Disinfection'' means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

(aa) ''Filtration'' means a process for removing particulate matter from water by passage through porous media.

(bb) ''Flocculation'' means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

(cc) ''Ground water under the influence of surface water'' means any water beneath the surface of the ground with:

(1) significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as Giardia lamblia; or

(2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

Direct influence shall be determined for individual sources in accordance with criteria established by the department. The department determination of direct influence may be based on site-specific measurements of water quality, documentation of well construction characteristics and geology, or both, with field evaluation.

(dd) ''Legionella'' means a genus of bacteria, some species of which have caused a type of pneumonia called legionnaires disease.

(ee) ''Point of disinfectant application'' means the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

(ff) ''Residual disinfectant concentration,'' which is referred to as ''C'' in CT calculations, means the concentration of disinfectant measured in mg/l in a representative sample of water.

(gg) ''Sedimentation'' means a process for removal of solids before filtration by gravity or separation.

(hh) ''Slow sand filtration'' means a process involving passage of raw water through a bed of sand at a low velocity of generally less than 0.4 m/h, resulting in substantial particulate removal by physical and biological mechanisms.

(ii) ''Surface water'' means all water which is open to the atmosphere and subject to surface runoff.

(jj) ''Waterborne disease outbreak'' means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the appropriate local or state agency.

(kk) ''Virus'' means a virus of fecal origin which is infectious to humans by waterborne transmission.

(ll) ''Action level'' means the concentration of lead or copper in water specified in 40 CFR 141.80(c) as in effect on July 1, 1993, which determines, in some instances, the treatment procedures contained in 40 CFR 141.80 through 141.91 as in effect on July 1, 1992, that a public water supply system is required to complete.

(mm) ''Corrosion inhibitor'' means a substance capable of reducing the corrosivity of water towards metal plumbing materials by forming a protective film on the interior surface of those materials.

(nn) ''Effective corrosion inhibitor residual'' means a concentration sufficient to form a passivating film on the interior walls of a pipe.

(oo) ''First draw sample'' means a one-liter sample of tap water, collected in accordance with 40 CFR 141.86(b)(2) as in effect on July 1, 1992, that has been standing in plumbing pipes at least six hours and is collected without flushing the tap.

(pp) ''Large water system'' means a public water supply system which serves more than 50,000 persons when used in 40 CFR 141, as adopted in K.A.R. 28-15-22.

(qq) ''Lead service line'' means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to the lead line.

(rr) ''Medium-sized water system'' when used in 40 CFR 141, as adopted in K.A.R. 28-15-22, means a public water supply system that serves greater than 3,300 persons and less than or equal to 50,000 persons.

(ss) ''Optimal corrosion control treatment'' when used in 40 CFR 141, as adopted in K.A.R. 28-15-22, means the corrosion control treatment that minimizes the lead and copper concentrations at the users' tap while insuring that the treatment does not cause the system to violate any national primary drinking water regulation.

(tt) ''Service line sample'' means a one-liter sample of water collected in accordance with 40 CFR 141.86(b)(3) as in effect on July 1, 1992, that has been standing at least six hours in a service line.

(uu) ''Single family structure,'' for the purpose of K.A.R. 28-15-22 only, means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

(vv) ''Small water system,'' for the purpose of K.A.R. 28-15-22 only, means a public water supply system that serves 3,300 persons or less.

(ww) ''Compliance cycle'' means the nine-year calendar cycle during which public water supply systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle begins January 1, 1993 and ends December 31, 2001; the second begins January 1, 2002 and ends December 31, 2010; and the third begins January 1, 2011 and ends December 31, 2019.

(xx) ''Compliance period'' means the three-year calendar year period within a compliance period. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993 to December 31, 1995; and the second from January 1, 1996 to December 31, 1998; and the third from January 1, 1999 to December 31, 2001.

(yy) ''Initial compliance period'' means the first full three-year compliance period which begins at least 18 months after promulgation, except for contaminants listed in 40 CFR 141.61(a) (19) to (21), 141.61(c) (19) to (33) and 141.62(b) (11) to (16) as in effect on July 1, 1993, initial compliance

period means the first full three-year compliance period after promulgation for systems with 150 or more service connections, January 1993-December 1995, and the first full three-year compliance period after the effective date of the regulation for systems having fewer than 150 service connections, January 1996-December 1998.

(zz) ''Repeat compliance period'' means any subsequent compliance period after the initial compliance period. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982; amended Sept. 21, 1992; amended June 21, 1993; amended Sept. 26, 1994; amended Jan. 9, 1995.)

28-15-12. **Public water supply fee fund.** On and after January 1, 1993, each public water supply shall pay a fee of $0.002 per 1,000 gallons of water sold at retail and delivered through mains, lines or pipes.

(a) The fee shall be paid to the Kansas department of revenue on forms supplied by the director of taxation in the same manner as the water protection fee authorized by K.S.A. 82a-954 and amendments thereto.

(b) The public water supplier may collect the fee directly from each customer to which water is sold at retail or may pay the amount owed from moneys in its operating fund or other fund available for that purpose. (Authorized by and implementing K.S.A. 1991 Supp. 65-163, as amended by L. 1992, Ch. 188, sec. 1; effective, T-28-12-31-92, Dec. 31, 1992; effective Feb. 15, 1993.)

28-15-13. **Standards for bacteriological, chemical, physical and radiological quality.** (a) Maximum contaminant microbiological levels (MCL).

(1) A public water supply system which collects 39 or fewer samples per monitoring period shall be considered to be in compliance with the MCL if total coliforms are not detected in more than one sample.

(2) A public water supply system which collects 40 or more samples per monitoring period shall be considered to be in compliance with the MCL if total coliforms are not detected in more than 5% of the samples.

(3) A public water supply system which collects any fecal coliform positive or E. coli positive repeat sample, or any total coliform positive repeat sample following a fecal coliform positive or E. coli positive routine sample shall be considered to be in violation of the MCL and may be considered to pose an acute health risk for the purposes of public notification.

(4) Each public water supply shall, for every monitoring period, determine whether it is in compliance with the applicable microbiological MCL.

(5) Variances and exemptions from the maximum contaminant level for coliform bacteria shall not be granted, unless the public water supply system demonstrates to the department that the violation of the maximum contaminant level is due to a persistent growth of total coliforms in the distribution system rather than:

(A) fecal or pathogenic contamination;

(B) a treatment lapse or deficiency; or

(C) a problem in operation or maintenance of the distribution system.

(b) (1) Maximum contaminant levels for inorganic chemicals shall be:

Constituent	*Level, in milligrams, per liter*
Arsenic	0.05
Antimony	0.006
Asbestos	7MFL
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.05
Cyanide (as free Cyanide)	0.2
Mercury	0.002
Nickel	0.1
Nitrate (as N)	10
Nitrite (as N)	1
Total Nitrate/Nitrite (as N)	10
Thallium	0.002
Selenium	0.05
Fluoride	4.0

(2) The nitrate MCL shall apply to all public water supply systems except that non-community public water supply systems may be allowed an MCL for nitrate of 20 mg/l if:

(A) the water is not available to persons under 6 months of age;

(B) there is continuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure;

(C) local health authorities are notified annually that nitrate levels exceed 10 mg/l; and

(D) there are not adverse health effects.

(3) The MCL for asbestos shall be 7 million fibers per liter (MFL) with fiber length . 10 microns.

(4) The MCL for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, mer-

cury, nickel, selenium and thallium shall apply only to community and non-transient, non-community public water supply systems. The MCL for fluoride shall apply only to community water supply systems.

(c) Maximum contaminant levels for organic chemicals shall be:

		Level, in milligrams, per liter
(1)	Pesticides and polychlorinated biphenyls:	
(A)	Alachlor (C.A.S. 15972-60-8)	0.002
(B)	Atrazine (C.A.S. 1912-24-9)	0.003
(C)	Carbofuran (C.A.S. 1563-66-2)	0.04
(D)	Chlordane (C.A.S. 57-74-9)	0.002
(E)	Dibromochloropropane	0.0002
(F)	Endrin (C.A.S. 72-20-8)	0.002
(G)	Ethylene dibromide (C.A.S. 106-93-4)	0.00005
(H)	Heptachlor (C.A.S. 76-44-8)	0.0004
(I)	Heptachlor epoxide (C.A.S. 1024-57-3)	0.0002
(J)	Lindane (C.A.S. 58-89-9)	0.0002
(K)	Methoxychlor (C.A.S. 72-43-5)	0.04
(L)	Polychlorinated biphenyls (C.A.S. 1336-36-3)	0.0005
(M)	Pentachlorophenol (C.A.S. 87-86-5)	0.001
(N)	Toxaphene (C.A.S. 8001-35-2)	0.003
(O)	2,4-D (C.A.S. 94-75-7)	0.07
(P)	2,4,5-TP Silvex (C.A.S. 93-72-1)	0.05
(Q)	Benzo(a)pyrene (C.A.S. 50-32-8)	0.0002
(R)	Dalopon (C.A.S. 75-99-0)	0.2
(S)	Di(2-ethylhexyl) adipate (C.A.S. 103-23-1)	0.4
(T)	Di(2-ethylhexyl) phthalate (C.A.S. 117-81-7)	0.006
(U)	Dinoseb (C.A.S. 88-85-7)	0.007
(V)	Diquat (C.A.S. 85-00-7)	0.02
(W)	Endothall (C.A.S. 145-73-3)	0.1
(X)	Glyphosate (C.A.S. 1071-53-6)	0.7
(Y)	Hexachlorobenzene (C.A.S. 118-74-1)	0.001
(Z)	Hexachlorocyclopentadiene (C.A.S. 77-47-4)	0.05
(AA)	Oxamyl(Vydate) (C.A.S. 23135-22-0)	0.2
(BB)	Picloram (C.A.S. 1918-02-1)	0.5
(CC)	Simazine (C.A.S. 122-34-9)	0.004
(DD)	2,3,7,8-TCDD (Dioxin) (C.A.S. 1746-01-6)	32 10^{8}
(EE)	Aldicarb (C.A.S. 116-06-3)	0.003
(FF)	Aldicarb Sulfoxide (C.A.S. 1646-87-3)	0.003
(GG)	Aldicarb Sulfone (C.A.S. 1646-87-4	0.003
(2)	Total trihalomethanes consisting of the sum of trichloromethane (chloroform), bromodichloromethane, dibromochloromethane and tribromomethane (bromoform).	0.10
(3)	Volatile Organic Compounds:	
(A)	Benzene	0.005
(B)	Carbon Tetrachloride	0.005
(C)	o-Dichlorobenzene	0.6
(D)	p-Dichlorobenzene	0.075
(E)	1,2-Dichloroethane	0.005
(F)	cis-1,2-Dichloroethylene	0.07
(G)	trans-1,2-Dichloroethylene	0.1
(H)	1,1-Dichloroethylene	0.007
(I)	1,2-Dichloropropane	0.005
(J)	Ethylbenzene	0.7
(K)	Monochlorobenzene	0.1
(L)	Styrene	0.1
(M)	Tetrachloroethylene	0.005
(N)	Trichloroethylene	0.005
(O)	1,1,1-Trichloroethane	0.2
(P)	Toluene	1
(Q)	Vinyl Chloride	0.002
(R)	Xylenes	10
(S)	Dichloromethane (C.A.S. 75-09-2)	0.005
(T)	1,2,4-Trichlorobenzene (C.A.S. 120-82-1)	0.07
(U)	1,1,2-Trichloroethane (C.A.S. 79-00-5)	0.005

(4) BAT for organic chemicals listed in K.A.R. 28-15-13(1)(A) through (1)(DD) and VOC's listed in K.A.R. 28-15-13(3)(A-U) shall be as listed in 40 CFR 141.61(b) as in effect on July 1, 1993.

(d) (1) Maximum contaminant levels for radiological contaminants shall be:

Constituent	*Level, in pCi per liter*
Combined radium-226 and radium-228	5
Gross alpha particle activity (including radium-226 but excluding radon and uranium)	15
Tritium	20,000
Strontium-90	8
Gross beta radioactivity	50

(2) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or to any internal organ greater than four millirem per year.

(e) Maximum contaminant levels for turbidity shall apply only to public water supply systems which use surface water or groundwater under the influence of surface water in whole or in part.

(1) Prior to the date set out in paragraph (2) of this subsection, the maximum contaminant levels for turbidity in drinking water, measured daily at representative entry points to the distribution system, shall be:

(A) one nephelometric turbidity unit (NTU), as determined by a monthly average, except that five or fewer turbidity units may be allowed if the supplier of water can demonstrate to the department that the higher turbidity does not:

(i) interfere with disinfection;

(ii) prevent maintenance of an effective disinfectant agent throughout the distribution system; or

(iii) interfere with microbiological determinations; and

(B) five turbidity units based on an average for two consecutive days. Daily turbidity readings shall be taken and recorded. If the maximum turbidity level exceeds one NTU for two consecutive days, the supplier of water shall notify the department within 48 hours after the turbidity readings are taken. Daily turbidity readings shall be reported to the department by the 10th day of the month following the month in which the readings were taken.

(2) K.A.R. 28-15-13(e)(1) and (2) shall be effective until filtration treatment equipment is installed for public water supply systems using ground water under the influence of surface water, after which date the requirements of K.A.R. 28-15-21 shall apply.

(f) (1) Inorganic analyses for the following constituents shall be required from each community water supply system with its own source of supply.

Calcium	Iron
Magnesium	Manganese
Sodium	pH
Potassium	Specific conductance
Total Phosphorus	Total dissolved solids
Chloride	Total alkalinity
Sulfate	Total hardness
Silica	

(2) An inorganic chemical analysis for the above constituents may be required by the department from a non-community water supply system with its own source of supply.

(3) The above analyses shall be required to determine the potability of the source of supply and to monitor the corrosivity characteristics of the water. The corrosive indices shall be calculated in accordance with 40 CFR 141.42, as in effect on July 1, 1992, which is adopted by reference.

(g) Each analysis to determine compliance shall be done in an approved laboratory according to methods established by ''Standard Methods for the Examination of Water and Wastewater,'' 16th edition, 1985, or as specified in 40 CFR 141.21-141.25 and 141.30, as in effect on July 1, 1992, or the equivalents outlined in 40 CFR 141.27, as in effect on July 1, 1992. Each analysis shall be made on treated water as furnished to the consumer to insure potability or at specified locations as prescribed in K.A.R. 28-15-14. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982; amended Sept. 21, 1992; amended June 21, 1993; amended Sept. 26, 1994; amended Jan. 9, 1995.)

28-15-14. **Monitoring requirements for laboratory tests.** (a) Monitoring requirements for microbiological determination.

(1) The sampling period for microbiological compliance shall be one calendar month for all public water supply systems.

(2) Number of required samples.

(A) Each public water supply system which uses surface water as its source of supply and serves a population of 4,100 or less shall take a minimum of four water samples each sampling period.

(B) Each public water supply system which uses surface water as its source of supply and serves a population greater than 4,100 shall take water samples according to the schedule prescribed in subsection (a)(4).

(C) Each public water supply system which uses ground water as its source of supply and each public water supply system which purchases water from another public water supply system shall take water samples according to the schedule prescribed in subsection (a)(4).

(3) Each public water supply system shall sample for coliform bacteria to determine compliance with K.A.R. 28-15-13(a) as follows.

(A) Each public water supply system shall determine the presence or absence of total coliforms in a standard 100 ml sample. A determination of total coliform density is not required.

(B) Each public water supply system using the multiple-tube fermentation (MTF) technique shall comply with the provisions of 40 CFR 141.21(f)(3)(i), as in effect on July 1, 1990.

(C) Each public water supply system using the membrane filter (MF) technique shall comply with the provisions of 40 CFR 141.21(f)(3)(ii), as in effect on July 1, 1990.

(D) Each public water supply system using the presence-absence (P-A) coliform test shall comply with the provisions of 40 CFR 141.21(f)(3)(iii), as in effect on July 1, 1990.

(E) Each public water supply system using the minimal medium ONPG-MUG (MMO-MUG) test shall comply with the provisions of 40 CFR 141.21(f)(3)(iv), as in effect on July 1, 1990.

(F) In lieu of the 10-tube MTF technique specified in paragraph (3)(B) of K.A.R. 28-15-

14(a), any public water supply system may use the MTF technique described in 40 CFR 141.21(f)(4), as in effect on July 1, 1990.

(G) Each fecal coliform test shall be performed according to the provisions of 40 CFR 141.21(f)(5), as in effect on July 1, 1990.

(H) Each E. coli test shall be performed according to the provisions of 40 CFR 141.21(f)(6), as in effect January 8, 1991.

(I) Each water sample shall be taken at a point which is representative of the conditions within the distribution system and in accordance with a written sample siting plan which is subject to review and revision by the department.

(4) Each public water supply system shall assure that routine samples are collected at regular time intervals and analyzed for total coliform bacteria as prescribed in the following table.

Population Served	*Minimum number of samples per sampling period*
25 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180

For each additional 150,000 in population, an additional 30 water samples shall be analyzed per sampling period.

(5) Additional water samples may be required by the department.

(A) These samples may be taken to determine the adequacy of disinfection following line installation, replacement, or repair.

(B) Water samples may also be required for the determination of the adequacy of the source, storage, treatment or distribution of water to the public.

(C) These additional water samples shall not be used to determine compliance with microbiological monitoring or the maximum contaminant level requirements.

(6) If the public water supply system exceeds the maximum contaminant level for coliform bacteria, the supplier of water shall give public notice of this fact, in accordance with K.A.R. 28-15-15a.

(7) Each total coliform positive sample shall be tested for either fecal coliform or E. coli bacteria.

(A) If the sample tests positive, the department shall be notified by the end of the business day.

(B) A public water supply system may request that the department classify any total coliform-positive sample as fecal coliform/E. coli-positive. If this request is approved, the provisions of K.A.R. 28-15-13(a)(3) shall apply.

(8) All locations which test positive for total coliform shall be resampled within 24 hours of notification that a positive sample was obtained or as directed by the department. Three repeat samples shall be collected on the same day for each total coliform positive sample and in the following manner.

(A) One additional sample shall be taken from the tap where the original positive sample was collected.

(B) One additional sample shall be taken from a tap within five service connections upstream from the positive sample.

(C) One additional sample shall be taken from a tap within five service connections downstream from the positive sample.

(D) Systems which have only one service connection shall collect one repeat sample daily for three days or take one 300ml sample and divide it into three 100ml portions.

(E) When a positive sample is collected at the last tap on a service line, the three repeat samples shall be taken at:

(i) the original positive location;

(ii) at the next upstream tap; and

(iii) a tap within five upstream taps of the positive sample location.

(F) Each public water supply system which collects less than five routine samples per sampling period shall collect a minimum of five routine samples during the sampling period following a monitoring period with a total coliform-positive coliform sample, unless the positive sample is invalidated by the state.

(G) If any repeat sample collected as specified in this subsection also tests positive for total coliform, another set of repeat samples shall be col-

lected and analyzed for total coliform. Repeat samples shall be collected until:

(i) total coliform is not detected in one complete set of repeat samples;

(ii) the MCL has been exceeded; or

(iii) the department invalidates the original total coliform-positive sample site after two sets of repeat samples are taken where the original total coliform-positive sample site produces total coliform-positive repeat samples and all other repeat samples are total coliform negative.

(9) (A) All routine and repeat samples count in the determination of compliance with any MCL unless the sample is invalidated in writing by the department for any one of the following three reasons.

(i) The laboratory which performed the analysis acknowledges a procedural error which invalidates the results.

(ii) Based on the results of the repeat samples, it is shown that the coliform-positive sample resulted from a domestic or non-distribution system plumbing problem.

(iii) The positive sample is due to circumstances which do not reflect water quality in the distribution system.

(B) Samples shall be invalidated under this paragraph only upon written request from the public water supplier. The request shall state the specific cause of the total coliform-positive sample and what actions the system has taken, or will take, to correct the problem.

(C) Total coliform-positive samples shall not be invalidated solely on the basis that all repeat samples are total coliform-negative.

(D) If a sample is invalidated under this paragraph, repeat samples shall be collected as required by K.A.R. 28-15-14(a)(8).

(10) Unless total coliforms are detected, a laboratory shall invalidate a sample if the sample:

(A) produces a turbid culture in the absence of gas production using the MPN method;

(B) produces a turbid culture in the absence of an acid reaction in the P-A coliform test; or

(C) exhibits confluent growth or produces colonies too numerous to count in the membrane filter test.

(11) All samples which are invalidated shall be replaced by collecting another sample from the same location as the original sample within 24 hours of notification of the invalidation, or as directed by the department.

(12) Each public water supply system which does not collect five routine samples per sampling period shall have an initial sanitary survey by June 29, 1994 for community water systems and June 29, 1999 for non-community water systems. After the initial survey, each system shall have another sanitary survey every five years, except for non-community water systems which shall be resurveyed every 10 years. All sanitary surveys shall be performed by the state.

(13) Each public water supply system which exceeds the MCL for coliform bacteria or fails to comply with these monitoring requirements shall notify the state by the end of the next business day after it learns of the violation and shall issue public notification according to K.A.R. 28-15-15a.

(b) Inorganic chemical monitoring and analytical requirements.

(1) Community water systems and non-transient, non-community water systems shall conduct monitoring to determine compliance with the MCLs specified in K.A.R. 28-15-13(b). Transient, non-community water systems shall conduct monitoring to determine compliance with the nitrate and nitrite MCLs in K.A.R. 28-15-13(b).

(2) As used in this regulation, ''sampling point'' means every entry point to the distribution system.

(3) Monitoring shall be conducted as follows.

(A) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system and the sample shall be representative of the water after treatment.

(i) Sampling shall begin in the compliance period starting January 1, 1993.

(ii) The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of the source water or of the treatment plant.

(B) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment.

(i) Sampling shall begin in the compliance period beginning January 1, 1993.

(ii) The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of the source water or of the treatment plant.

(iii) Surface water systems shall include systems with a combination of surface water and groundwater.

(C) If a system draws water from more than one source, and the sources are combined before distribution, the system shall sample at an entry point to the distribution system during periods of normal operating conditions when the water is representative of all sources being used.

(D) The number of required samples which must be analyzed may be reduced by compositing. Composite samples from a maximum of five samples shall be allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing shall be done in the laboratory.

(i) If the concentration in the composite sample is greater than or equal to one-fifth of the MCL of any inorganic chemical, a follow-up sample shall be taken within 14 days from each sampling point included in the composite. These samples shall be analyzed for the contaminants which exceeded one-fifth of the MCL in the composite sample. The detection limits in 40 CFR 141.23(a)(4)(i), as in effect on July 1, 1993, are adopted by reference.

(ii) If the population served by the system is greater than 3,300 persons, compositing shall only be allowed at sampling points within a single system. In systems serving less than or equal to 3,300 persons, compositing among different systems shall be allowed provided the five sample limit is maintained.

(iii) If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these instead of resampling. The duplicates shall be analyzed, and the results shall be reported within 14 days of collection.

(E) The frequency of monitoring for asbestos shall be as specified in K.A.R. 28-15-14(c); the frequency of monitoring for barium, cadmium, chromium, fluoride, mercury and selenium shall be as specified in K.A.R. 28-15-14(d); the frequency of monitoring for nitrate shall be as specified in K.A.R. 28-15-14(e); and the frequency of monitoring for nitrite shall be as specified in K.A.R. 28-15-14(f).

(c) The frequency of monitoring conducted to determine compliance with the MCL of asbestos as specified in K.A.R. 28-15-13(b) shall be conducted as follows.

(1) Each community water system and nontransient, non-community water system shall be required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle beginning in the compliance period starting January 1, 1993.

(2) If the system believes it is not vulnerable to either asbestos contamination in its source water or to corrosion of asbestos-cement pipe, or both, it may apply for a waiver of the monitoring requirements of K.A.R. 28-15-14(c)(1). If a waiver is granted, the system shall not be required to monitor for asbestos.

(3) A waiver may be granted based on consideration of the following factors:

(A) potential asbestos contamination of the source water; and

(B) the use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

(4) A waiver shall remain in effect until the completion of the three-year compliance period. Systems not receiving a waiver shall monitor in accordance with K.A.R. 28-15-14(c)(1).

(5) A system vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(6) A system vulnerable to asbestos contamination due solely to source water shall monitor in accordance with K.A.R. 28-15-14(b)(2).

(7) A system vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(8) A system which exceeds the MCL shall monitor quarterly beginning in the next quarter after the violation occurred.

(9) The quarterly monitoring requirement may be reduced to the frequency specified in K.A.R. 28-15-14(c)(1) if the department has determined that the system is reliably and consistently below the MCL. This determination shall not be made unless:

(A) a groundwater system takes a minimum of two quarterly samples; and

(B) a surface water or combined surface and groundwater system takes a minimum of four quarterly samples.

(10) If monitoring data collected after January 1, 1990 are generally consistent with the requirements of K.A.R. 28-15-14(c), then systems may use that data to satisfy the monitoring require-

ment for the initial compliance period beginning January 1, 1993.

(d) The frequency of monitoring conducted to determine compliance with the MCLs in K.A.R. 28-15-13(b) for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be as follows:

(1) Groundwater systems shall take one sample at each sampling point once every three years. Surface water systems or combined surface water and groundwater systems shall take one sample annually at each sampling point.

(2) The system may apply for a waiver from the monitoring frequencies specified in K.A.R. 28-15-14(d)(1).

(3) A condition of the waiver shall be a requirement that a system takes a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle.

(4) The department may grant a waiver provided surface water systems have monitored annually for at least three years and groundwater systems have conducted a minimum of three rounds of monitoring. At least one sample shall have been taken since January 1, 1990. Both surface and groundwater systems shall demonstrate that all previous analytical results were less than the MCL. Systems that use a new water source shall not be eligible for a waiver until three rounds of monitoring from the new source have been completed.

(5) In determining the appropriate reduced monitoring frequency the department shall consider:

(A) reported concentrations from all previous monitoring;

(B) the degree of variation in reported concentrations; and

(C) other factors which may affect contaminant concentrations including:

(i) changes in the groundwater pumping rate;

(ii) changes in the system configuration;

(iii) changes in the system operating procedures; or

(iv) changes in stream flows or characteristics.

(6) A decision by the department to grant a waiver shall be made in writing and shall set forth the basis for the determination.

(A) The waiver request may be initiated by the department or upon application by the public water supply system.

(B) The public water supply system shall specify the basis for its request in the application for a waiver.

(C) Any determination of the appropriate monitoring frequency shall be reviewed and, where appropriate, revised by the department when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency becomes available.

(7) Systems which exceed the MCLs shall monitor quarterly, beginning in the next quarter after the violation occurs.

(8) If the department has determined that the system is reliably and consistently below the MCL, the quarterly monitoring requirement may be decreased to the frequencies specified in K.A.R. 28-15-14(d)(1) and K.A.R. 28-15-14(d)(2). This determination shall not be made unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(e) All public water supply systems shall monitor to determine compliance with the MCL for nitrate specified in K.A.R. 28-15-13(b).

(1) Community water systems and non-transient, non-community water systems served by groundwater shall monitor annually beginning January 1, 1993. Systems served by surface water shall monitor quarterly beginning January 1, 1993.

(2) For community water systems and non-transient, non-community water systems, the repeat monitoring frequency for systems using groundwater shall be quarterly for at least one year following any one sample in which the concentration is greater than or equal to 50 percent of the MCL. The department may allow a groundwater system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than the MCL.

(3) If all analytical results from four consecutive quarters are less than 50 percent of the MCL, a community water system or a non-transient, non-community water system may be allowed by the department to reduce the sampling to an annual frequency.

(4) Each transient, non-community water system shall monitor annually beginning January 1, 1993.

(5) After the initial round of quarterly sampling is completed, each community water system and non-transient, non-community water system which is monitoring annually shall take subsequent samples during the quarter or quarters

which previously resulted in the highest analytical result.

(f) All public water systems shall monitor to determine compliance with the MCL for nitrite in K.A.R. 28-15-13(b).

(1) All public water systems shall take one sample at each sampling point in the compliance period beginning January 1, 1993 and ending December 31, 1995.

(2) After the initial sample, systems where an analytical result for nitrite is less than 50 percent of the MCL shall monitor at a frequency specified by the department.

(3) For community water systems, non-transient, non-community water systems and transient, non-community public water systems, the repeat monitoring frequency shall be quarterly for at least one year following any one sample in which the concentration is greater than or equal to 50 percent of the MCL. A system may be allowed by the department to reduce the sampling to an annual frequency after determining the system is reliably and consistently less than the MCL.

(4) Systems which are monitoring annually shall take each subsequent sample during the quarter or quarters which previously resulted in the highest analytical result.

(g) Confirmation samples.

(1) Where the results of sampling for asbestos, barium, cadmium, chromium, fluoride, mercury, or selenium indicate an exceedance of the MCL, one additional sample shall be collected at the same sampling point as soon as possible after the initial sample was taken. The additional samples shall be taken within two weeks.

(2) Where nitrate or nitrite sampling results indicate an exceedance of the MCL, the system shall take a confirmation sample within 24 hours of the system's receipt of notification of the analytical results of the first sample.

(A) Systems unable to comply with the 24 hour sampling requirement shall immediately notify the consumers served by the public water system in accordance with K.A.R. 28-15-15a.

(B) Systems exercising this option to notify the consumers shall take and analyze a confirmation sample within two weeks of notification of the analytical results of the first sample.

(3) The results of the initial and confirmation samples shall be averaged. The resulting average shall be used to determine the system's compliance. Obvious sampling errors shall be deleted.

(h) The department may require more frequent monitoring than specified in K.A.R. 28-15-14(c)-(f) or may require confirmation samples for positive or negative results.

(i) Systems may apply to the department for permission to conduct more frequent monitoring than the minimum frequencies specified.

(j) Compliance with K.A.R. 28-15-13(b) for inorganic chemicals shall be determined by the analytical result or results obtained at each sampling point.

(1) For systems which monitor more often than on an annual basis, compliance with the MCLs for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be determined by a running annual average at each sampling point.

(A) If the average at any sampling point is greater than the MCL, the system shall be out of compliance.

(B) If any one sample would cause the annual average to be exceeded, the system shall be immediately out of compliance.

(C) Any sample below the method detection limit shall be calculated at zero for the purpose of determining the annual average.

(2) For systems which are monitoring annually, or less frequently, the system shall be out of compliance with the MCLs for asbestos, barium, cadmium, chromium, fluoride, mercury, and selenium if the level of a contaminant at any sampling point is greater than the MCL. Determination of compliance shall be based on the average of the initial and confirmation samples.

(3) If the levels of nitrate or nitrite or both are below the MCLs, compliance with the MCLs shall be determined based on one sample. If the levels of nitrate or nitrite or both exceed the MCLs in the initial sample, a confirmation sample shall be required, and compliance shall be determined based on the average of the initial and confirmation samples.

(4) If a public water system has a part of a distribution system separable from other parts of the distribution system and no interconnections exist, the system may give public notice to only the area serviced by that portion of the system which is out of compliance.

(5) Each public water system shall monitor at or before the time designated by the department during each compliance period.

(k) The analysis for inorganic chemicals shall be performed in accordance with 40 CFR 141.23(k)-(q), as in effect on July 1, 1993, which is adopted by reference.

(l) Monitoring requirements for volatile organic compounds other than trihalomethanes.

(1) Beginning with the first compliance period, analysis of the contaminants listed in K.A.R. 28-15-13(c)(3) for the purpose of determining compliance with the MCLs shall be conducted.

(2) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(3) Surface water systems or combined surface water and groundwater systems shall take a minimum of one sample at either points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(4) If the system draws water from more than one source and the sources are combined before distribution, the system shall sample at the entry point to the distribution system during periods of normal operating conditions when water representative of all sources is being used.

(5) Each community water system and nontransient, non-community water system shall take four consecutive quarterly samples for each contaminant listed in K.A.R. 28-15-13(c)(3) during each compliance period, beginning in the initial compliance period.

(6) If the initial monitoring for the contaminants listed in K.A.R. 28-15-13(c)(3) has been completed by December 31, 1992 and the system did not detect any of the specified contaminants, then each groundwater and surface water system shall take one sample annually beginning with the initial compliance period.

(7) After a minimum of three years of annual sampling, groundwater systems with no previous detection of any contaminant listed in K.A.R. 28-15-13(c)(3) shall take one sample in each compliance period.

(8) If a contaminant listed in K.A.R. 28-15-13(c)(3) is detected at a level exceeding 0.0005 mg/l in any sample, the following procedures shall be followed.

(A) The system shall monitor quarterly at each sampling point which resulted in detection.

(B) The quarterly monitoring requirement may be decreased provided the system has been reliably and consistently below the MCL.

(i) Quarterly monitoring shall not be decreased unless a groundwater system takes a minimum of two quarterly samples, and a surface water system takes a minimum of four quarterly samples.

(ii) If the system has been reliably and consistently below the MCL, and the minimum number of quarterly samples have been taken, the system shall then monitor annually.

(iii) Systems which monitor annually shall monitor during the quarter or quarters which previously yielded the highest analytical result.

(C) Systems with three consecutive annual samples with no detects of compounds listed in K.A.R. 28-15-13(c)(3) may apply for a waiver as specified in K.A.R. 28-15-14(s).

(D) Vinyl chloride shall be monitored quarterly by groundwater systems which have detected one or more of the following compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene.

(i) A vinyl chloride sample shall be taken at each sampling point at which one or more of the listed compounds was detected.

(ii) If the results of the first analysis do not detect vinyl chloride the system shall monitor for vinyl chloride once each compliance period.

(9) Systems which exceed the contaminant levels specified in K.A.R. 28-15-13(c)(3) shall monitor quarterly. The system shall monitor annually after a minimum of four consecutive quarterly samples are reliably and consistently below the MCLs.

(10) Compliance with K.A.R. 28-15-13(c)(3) shall be determined based on the analytical results obtained at each sampling point.

(A) For systems which monitor more often than on an annual basis, compliance shall be determined by a running annual average of all samples taken at each sampling point.

(i) If the annual average of any sampling point is greater than the MCL, then the system shall be out of compliance.

(ii) If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the system shall be immediately out of compliance.

(B) If monitoring is conducted annually or less frequently, the system shall be out of compliance if the level of a contaminant at any sampling point is greater than the MCL. Compliance shall be determined by the average of the initial and confirmation samples.

(C) If a public water system has a part of a distribution system which is separable from other parts of the distribution system and no interconnections exist, the system may give public notice only to that area served by that portion of the system which is out of compliance.

(11) A confirmation sample shall be required for any positive results and shall be taken at the same sampling point as the initial sample.

(12) Compositing of samples shall be allowed.

(i) Composite samples from a maximum of five sampling points shall be allowed if the detection limit of the method used for analysis is less than one-fifth of the MCL.

(ii) Compositing of samples shall be done in the laboratory and analyzed within 14 days of sample collection.

(A) If the concentration in the composite sample is greater than or equal to 0.0005 mg/l for any contaminant listed in K.A.R. 28-15-13(c)(3), a follow-up sample shall be taken and analyzed within 14 days from each sampling point included in the composite.

(B) If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these instead of resampling. The duplicate shall be analyzed, and the results shall be reported within 14 days of collection.

(C) Compositing shall only be permitted at sampling points within a single system, unless the population served by the system is less than or equal to 3,300 persons. In systems serving less than or equal to 3,300 persons, compositing among different systems shall be allowed provided the five sample limit is maintained.

(D) Compositing samples prior to gas chromatograph analysis shall be performed in accordance with 40 CFR 141.24(f)(14)(iv), as in effect on July 1, 1991 which is adopted by reference. Compositing samples prior to GC/MS analysis shall be performed in accordance with 40 CFR 141.24(f)(14)(v), as in effect on July 1, 1991 which is adopted by reference.

(13) Analysis for organic chemicals listed in K.A.R. 28-15-13(c)(3) shall be performed in accordance with 40 CFR 141.24(f)(16), as in effect on July 1, 1993 which is adopted by reference.

(14) Laboratory certification for chemicals listed in K.A.R. 28-15-13(c)(3) shall be in accordance with 40 CFR 141.24(f)(17), as in effect on July 1, 1993 which is adopted by reference.

(15) Analytical data collected after January 1, 1988 may be accepted for the purpose of initial monitoring compliance and may be used for compliance with K.A.R. 28-15-14(f)(5). Systems which use grandfathered data and did not detect any of the contaminants listed in K.A.R. 28-15-13(c)(3) shall begin monitoring annually beginning with the initial compliance period.

(16) Each approved laboratory shall determine the method detection level in accordance with 40 CFR 141.24(f)(20), as in effect on July 1, 1993, which is adopted by reference.

(17) Each public water system shall monitor at or before the time designated by the department during each compliance period.

(18) The monitoring frequency may be increased by the department to detect variations within the public water system.

(m) Monitoring requirements for pesticides and polychlorinated biphenyls listed in K.A.R. 28-15-13(c), except endrin, shall be as follows. Monitoring for endrin for community public water supply systems shall be performed in accordance with 40 CFR 141.24(a) to (d), as in effect on July 1, 1992, which is adopted by reference.

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) Surface water systems shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.

(i) Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water systems shall include systems with a combination of surface water and groundwater sources.

(3) If the system draws water from more than one source, and the sources are combined before distribution, the system shall sample at an entry point to the distribution system during periods of normal operating conditions, and when all sources are being used.

(4) Monitoring frequency.

(A) Each community water system and nontransient, non-community water system shall take four consecutive quarterly samples for each contaminant listed in K.A.R. 28-15-13(c)(1) during each compliance period beginning with the compliance period starting January 1, 1993.

(B) Systems serving more than 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period.

(C) Systems serving less than or equal to 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

(5) Each community water system and noncommunity, non-transient water system may apply to the department for a waiver from the requirements of K.A.R. 28-15-14(m)(4). A system shall reapply for a waiver for each compliance period.

(6) A waiver from the requirements of K.A.R. 28-15-14(m)(4) may be granted after evaluating the system's knowledge of previous use of the contaminant, including transport, storage, or disposal within the watershed for surface water supplies or zone of influence for groundwater supplies of the system.

(i) If no previous use of the contaminant within the watershed or zone of influence is revealed, a waiver may be granted.

(ii) If previous use of the contaminant is unknown, or the contaminant has been used previously, then the following factors shall be used to determine whether a waiver is granted:

(A) previous analytical results;

(B) the proximity of the system to a potential point or non-point source of contamination;

(C) the environmental persistence and transport of the pesticide or polychlorinated biphenyls;

(D) protection from contamination due to such factors as depth of the well, the soil classification and the integrity of the well casing;

(E) elevated nitrate levels at the water supply source; and

(F) use of polychlorinated biphenyls in equipment used in the production, storage, or distribution of water.

(7) If an organic contaminant listed in K.A.R. 28-15-13(c)(1) is detected in any sample, the following procedures shall be followed.

(A) Each system shall monitor quarterly at each sampling point which resulted in a detection.

(B) Quarterly monitoring may be reduced to annual monitoring if it has been determined that the system is reliably and consistently below the MCLs specified in K.A.R. 28-15-13(c)(1).

(i) Systems which monitor annually shall monitor during the quarter that previously yielded the highest analytical result.

(ii) Monitoring shall not be reduced to annually unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(C) Sytems which have three consecutive annual samples with no detection of any contaminant listed in K.A.R. 28-15-13(c)(1) may apply for a waiver from monitoring as specified in K.A.R. 28-15-14(g)(b).

(D) If monitoring results in detection of one or more of certain related compounds including aldicarb, aldicarb sulfone, aldicarb sulfoxide and heptachlor, heptachlor epoxide, then subsequent monitoring shall analyze for all related contaminants.

(8) Systems which violate the requirements of K.A.R. 28-15-13(c)(1) shall monitor quarterly. After the results from a minimum of four quarterly samples show that the system is in compliance, and the results are reliably and consistently below the MCLs, the system shall monitor at a frequency specified in K.A.R. 28-15-14(m)(7)(B).

(9) A confirmation sample shall be required for positive results.

(i) The confirmation sample result shall be averaged with the first sampling result and the average used to determine compliance with K.A.R. 28-15-13(c)(1).

(ii) Obvious sampling errors shall be deleted from the calculation.

(10) The total number of samples a system must analyze may be reduced by compositing.

(i) Composite samples from a maximum of five sampling points shall be allowed if the detection limit of the method used is less than one-fifth of the MCL.

(ii) Compositing of samples shall be done in the laboratory and analyzed within 14 days of sample collection.

(A) If the concentration in the composite sample detects one or more contaminants listed in K.A.R. 28-15-13(c)(1), then a follow-up sample shall be taken and analyzed within 14 days from each sampling point included in the composite.

(B) If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use these duplicates instead of resampling. The duplicate shall be analyzed and the results reported to the department within 14 days of collection.

(C) If the population served by the system is greater than 3,300 persons, then compositing shall only be permitted at sampling points within a single system. In systems serving less than or equal to 3,300 persons, compositing among different systems shall be allowed if the five sample limit is maintained.

(11) Compliance with K.A.R. 28-15-13(c)(1) shall be determined based on the analytical results obtained at each sampling point.

(A) For systems which monitor more often than on an annual basis, compliance shall be determined by a running annual average of all samples taken at each sampling point.

(i) If the annual average of any sampling point is greater than the MCL, then the system shall be out of compliance.

(ii) If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the system shall be immediately out of compliance.

(iii) Any samples below the detection limit shall be calculated as zero for the purposes of determining the annual average.

(B) If monitoring is conducted annually, or less frequently, the system shall be out of compliance if the level of a contaminant at any sampling point is greater than the MCL. Determination of compliance shall be based on the average of the initial and confirmation samples.

(C) If a public water system has part of a distribution system separable from other parts of the distribution system, and no interconnections exist, the system may give public notice only to that portion of the system which is out of compliance.

(12) The analysis for contaminants listed in K.A.R. 28-15-13(c)(1) shall be conducted in accordance with 40 CFR 141.24(h)(12), as in effect on July 1, 1993, which is adopted by reference. Analysis for endrin shall be conducted in accordance with 40 CFR 141.24(e), as in effect on July 1, 1993, which is adopted by reference.

(13) The analysis for PCB's shall be conducted in accordance with 40 CFR 141.24(h)(13), as in effect on July 1, 1993, which is adopted by reference.

(14) If monitoring data collected after January 1, 1990 are generally consistent with the requirements of K.A.R. 28-15-14(m), that data may be used to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(15) Each public water system shall monitor during the portion of the year when pesticides are commonly in use within each compliance period.

(16) Detection shall be defined as greater than or equal to the concentrations for each contaminant listed in 40 CFR 141.24(h)(18), as in effect on July 1, 1993, which is adopted by reference.

(17) The analysis in K.A.R. 28-15-13(c) shall be performed by laboratories certified under 40 CFR 141.24(h)(19), as in effect on July 1, 1993, which is adopted by reference.

(18) Each public water system shall monitor at or before the time designated by the department during each compliance period.

(19) The monitoring frequency may be increased by the department to detect variations within the water supply system.

(n) Special monitoring for unregulated inorganic chemicals and pesticides.

(1) Monitoring of the contaminants listed in K.A.R. 28-15-14(n)(2) and (3) shall be conducted as follows.

(A) Each community water system and nontransient, non-community water system shall take four consecutive quarterly samples at each sampling point for each contaminant listed in K.A.R. 28-15-14(n)(2) and shall report the results to the department. Monitoring shall be completed by December 31, 1995.

(B) Each community water system and nontransient, non-community water system shall take one sample at each sampling point for each contaminant listed in K.A.R. 28-15-14(n)(3) and report the results to the department. Monitoring shall be completed by December 31, 1995.

(C) Each community water system and nontransient, non-community water system may apply to the department for a waiver from the requirements of K.A.R. 28-15-14(n)(1)(A) and (B).

(D) The department may grant a waiver for the requirement of K.A.R. 28-15-14(n)(1)(A) based on the criteria specified in K.A.R. 28-15-14(m)(6). The department may grant a waiver from K.A.R. 28-15-14(n)(1)(B) if previous analytical results indicate contamination would not occur and if the data was collected after January 1, 1990.

(E) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(F) Surface water systems shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.

(i) Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water systems shall include systems with a combination of surface water and groundwater sources.

(G) If the system draws water from more than one source and the sources are combined before distribution, the system shall sample at an entry point to the distribution system during periods of normal operating conditions, when water representative of all sources is being used.

(H) A confirmation sample is required for positive results.

(I) The total number of samples a system must analyze may be reduced by compositing.

(i) Composite samples from a maximum of five sampling points shall be allowed.

(ii) Compositing of samples shall be done in the laboratory and the composite sample shall be analyzed within 24 hours of collection.

(iii) If the population served by the system is greater than 3,300 persons, then compositing shall only be permitted at sampling points within a single system.

(iv) In systems serving less than or equal to 3,300 persons, compositing among different systems shall be permitted if the five sample limit is maintained.

(J) Instead of performing the monitoring required by K.A.R. 28-15-14(n), a community water system or non-transient, non-community water system serving fewer than 150 service connections may send a letter to the department stating that the system is available for sampling.

(i) The letter shall be sent by January 1, 1994.

(ii) The system shall not submit samples for analysis to the department until requested to do so.

(K) The unregulated organic contaminants listed in 40 CFR 141.40(n)(11), as in effect on July 1, 1992 shall be tested by the analytical method described in the regulation, which is adopted by reference.

(L) The unregulated inorganic contaminants listed in 40 CFR 141.40(n)(12), as in effect on July 1, 1992, shall be tested by the analytical method described in the regulation, which is adopted by reference.

(M) A community water system or a non-transient, non-community water system which is required to monitor the contaminants listed in K.A.R. 28-15-14(n)(1)(N) shall provide to the department the results of all analytical testing performed within 30 days of receipt and any public notice required under subsection (N).

(N) A community water system or a non-transient, non-community water system which is required to monitor the contaminants listed in K.A.R. 28-15-14(n) shall notify persons served by the system concerning the availability of the sampling results.

(i) A notice shall be included in the first set of water bills issued by the system after the receipt of the results or shall be provided by written notification within three months.

(ii) The notice shall identify a person to contact in order to obtain information regarding the monitoring results, and shall supply the telephone number where the person can be reached.

(iii) For surface supply systems, public notification shall be required only after the first quarter's monitoring. The public notification shall include a statement that additional monitoring shall be conducted for three more quarters, and that the results shall be available upon request.

(2) The following unregulated organic contaminants shall be subject to the provisions of paragraph (1) of this subsection:

(A) Aldrin;

(B) Butachlor;

(C) Carbaryl (Sevin);

(D) Dicamba;

(E) Dieldrin;

(F) 3-Hydroxycarbofuran;

(G) Methomyl;

(H) Metolachlor;
(I) Metribuzin; and
(J) Propachlor (Ramrod).

(3) The unregulated inorganic contaminant sulfate shall be subject to the provisions of paragraph (1) of this subsection.

(o) Special monitoring requirements for chemical quality of community water supply systems. Each public water supply system shall monitor the water in the distribution system annually to determine the concentration of the chemical constituents listed in K.A.R. 28-15-13(f).

(p) Monitoring requirements for trihalomethanes.

(1) Each community water supply system serving a population of 10,000 or more shall monitor the water quarterly to determine compliance with K.A.R. 28-15-13(c)(2).

(A) Upon written request of the supplier of water, the monitoring requirement may be reduced by the department to one yearly sample, when only groundwater is used and based upon the analytical results of the water samples submitted for analysis.

(B) Upon written request of the supplier of water the monitoring requirement may be reduced by the department from four water samples in each quarter to one water sample in each quarter, based on the analytical results of one year of monitoring in compliance with K.A.R. 28-15-13(c)(2), if two conditions are met.

(i) Local conditions demonstrate that the total trihalomethanes are consistently below the maximum contaminant level prescribed in K.A.R. 28-15-13(c)(2).

(ii) Local conditions reflect the maximum residence time of water in the system.

(q) Special monitoring for unregulated volatile organic compounds.

(1) All community water systems and non-transient, non-community water systems shall monitor for the contaminants listed in K.A.R. 28-15-14(q)((5).

(2) Surface water systems shall sample at points in the distribution system representative of each water source or at entry points to the distribution system after any application of treatment. The minimum number of samples shall be one year of quarterly samples per water source.

(3) Groundwater systems shall sample at a point of entry to the distribution system representative of each well after any application of treatment. The minimum number of samples shall be one sample per entry point to the distribution system.

(4) Confirmation samples shall be required for positive results.

(5) Community water systems and non-transient, non-community water systems shall monitor the following contaminants:

(A) Bromobenzene;
(B) Bromodichloromethane;
(C) Bromoform;
(D) Bromomethane;
(E) Chlorodibromomethane;
(F) Cloroethane;
(G) Chloromethane;
(H) Chloroform;
(I) Chlorobenzene;
(J) o-Chlorotoluene;
(K) p-Chlorotoluene;
(L) m-Dichlorobenzene;
(M) 1,1-Dichloroethane;
(N) 1,3-Dichloropropane;
(O) 2,2-Dichloropropane;
(P) 1,1-Dichloropropene;
(Q) 1,1,1,2-Tetrachloroethane;
(R) 1,1,2,2-Tetrachloroethane;
(S) 1,2,3-Trichloropropane; and
(T) 1,3-Dichloropropene.

(6) Community water systems and non-transient, non-community water systems shall monitor for EDB and DBCP only if the system is vulnerable to contamination from the substances listed in (q)(5) of this regulation. A "vulnerable system" means a system which is potentially contaminated by EDB or DBCP, including:

(A) surface water systems where these compounds are applied, manufactured, stored, disposed of, or shipped upstream;

(B) groundwater systems in areas where the compounds are applied, manufactured, stored, disposed of, or shipped in the groundwater recharge basin; or;

(C) groundwater systems that are in proximity to underground storage tanks that contain leaded gasoline.

(7) The analysis for unregulated organic chemicals shall be in accordance with 40 CFR 141.40(g), as in effect on July 1, 1993 and is adopted by reference.

(8) Laboratories testing unregulated organic chemicals shall be certified in accordance with 40 CFR 141.40(h), as in effect on July 1, 1993 which is adopted by reference.

(9) Public water systems may use monitoring data collected any time after January 1, 1983 to meet the requirements for unregulated monitoring of volatile organic compounds, if the monitoring program was consistent with the requirements of K.A.R. 28-15-14(k). In addition, the results of EPA's groundwater supply survey may be used in a similar manner for systems supplied by a single well.

(10) Instead of performing the monitor required by K.A.R. 28-15-14(n), a community water system or non-transient, non-community water system serving fewer than 150 service connections may send a letter to the department stating that the system is available for sampling.

(11) All community water systems and non-transient, non-community water systems shall repeat the monitoring required in K.A.R. 28-15-14(k) no less frequently than every five years from the dates listed in 40 CFR 141.40(a), as in effect on July 1, 1991, which is adopted by reference.

(12) The department may composite up to five samples when monitoring for substances in K.A.R. 28-15-14(g)(5).

(r) Special monitoring for acrylamide and epichlorohydrin.

(1) Annual written certification from each public water system shall be submitted to the department confirming that the combination of dose and monomer level does not exceed the levels specified as follows:

(A) Acrylamide = 0.05% dosed at 1 ppm or equivalent; and

(B) Epichlorohydrin = 0.01% dosed at 20 ppm or equivalent.

(2) These certifications can rely on manufacturers or third party information.

(s) Waivers for monitoring for chemicals listed in K.A.R. 28-15-13(b) and K.A.R. 28-15-13(c). Waivers may be issued to reduce monitoring and testing when applied for in accordance with 40 CFR 141.24(f)(7) through (10), as in effect on July 1, 1993, which is adopted by reference.

(t) Monitoring requirements for radiological quality of community water supply systems. Radiological analysis shall include all parameters necessary to determine compliance with the standards prescribed in K.A.R. 28-15-13(d).

(1) Water served to the consumer from community water supply systems shall be analyzed every four years; either by analyzing four consecutive quarterly samples, or a composite of four consecutive quarterly samples, if the results exceed 50 percent of the maximum contaminant level for radiological content. If the results are less than 50 percent of the maximum contaminant level, a single sample shall be analyzed every four years. Analysis for man-made beta and photon emitters shall be required for community water supply systems using surface water sources and serving more than 100,000 persons and for other water supply systems as required by the department. The scope of the radiological analysis to be performed shall be as set forth in 40 CFR 141.25-141.26, as in effect on October 1, 1981, which is adopted by reference.

(2) Community water supply systems that purchase water from public water supply systems which have a permit shall be considered extensions of the original system and shall not be required to perform radiological analysis to determine compliance with the maximum contaminant levels prescribed in K.A.R. 28-15-13(d), unless specifically required to do so by the department.

(u) Monitoring requirements for turbidity. All public water supply systems using surface water in whole or in part shall monitor the water for turbidity at representative entry points to the distribution system. In performing this monitoring, the nephelometric method found in "Standard Methods for the Examination of Water and Wastewater," 16th Edition, 1985, shall be applied. If the maximum contaminant level prescribed in K.A.R. 28-15-13(e)(1) is exceeded, a check sample shall be collected and analyzed within one hour. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982; amended Sept. 21, 1992; amended Jan. 9, 1995.)

28-15-15. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982; revoked Sept. 21, 1992.)

28-15-15a. **Public notice requirements.** (a) If a public water supply system violates a maximum contaminant level or prescribed treatment technique, or fails to comply with a schedule contained in a variance or exemption, the supplier of water shall give notice to its customers as follows.

(1) Notice shall be given:

(A) by publication in a daily newspaper serving the area, or a weekly newspaper if the area is not served by a daily newspaper, within 14 days after learning of the violation or failure;

(B) by mail delivery with a water bill, by direct mail or by hand delivery within:

(i) 45 days after learning of the violation or failure if the violation or failure has not been corrected within 45 days; or

(ii) 45 days after learning of the violation or failure if directed to do so by the department; and

(C) by furnishing a copy of the public notice to radio and television stations serving the area of the public water supply system within 72 hours after learning of a violation of a maximum contaminant level which may pose an acute risk to public health. The following violations shall be considered acute violations:

(i) any violation specified by the department as posing an acute risk to human health;

(ii) violation of the maximum contaminant level for nitrate or nitrite or combined nitrate and nitrite;

(iii) violation of the maximum contaminant level for total coliforms, when fecal coliforms or E. coli are identified as specified in K.A.R. 28-15-13(a)(3); or

(iv) occurrence of a waterborne-disease outbreak attributed to the public water supply.

(2) Notification shall be repeated every three months by the methods specified in paragraph (1)(B) above, for as long as the violation or failure continues.

(3) In lieu of the requirements specified in paragraphs (1) or (2) above, the owner or operator of a non-community public water supply system may give notice either by hand delivery or by continuous posting in conspicuous places throughout the area served by the system. Notice shall be made within 72 hours after learning of an acute violation listed in paragraph (1)(c) above, or within 14 days after learning of any other violation or failure. Posting shall continue for as long as the violation or failure continues and hand delivery shall be repeated every three months as long as the violation or failure continues.

(b) If a public water supply system fails to monitor its water supply as required in K.A.R. 28-15-14, 28-15-21 or 28-15-22, or fails to have the analysis performed in an approved laboratory, or is granted a variance or exemption, the supplier of water shall give notice to its customers as follows.

(1) Notices shall be given:

(A) by publication in a daily newspaper serving the area, or a weekly newspaper if the area is not served by a daily newspaper, within three months after receiving the variance or exemption or learning of the violation; and

(B) by mail delivery, either with a water bill or by direct mail, or by hand delivery, every three months as long as the violation continues or the variance or exemption remains in effect.

(2) In lieu of the requirements specified in paragraphs (1)(A) and (B) above, the owner or operator of a non-community public water supply system may give notice either by hand delivery or by continuous posting in conspicuous places throughout the area served by the system within three months of the violation or receiving a variance or exemption. Posting shall continue for as long as the violation continues or a variance or exemption remains in effect, and hand delivery shall be repeated every three months as long as the violation continues or a variance or exemption remains in effect.

(c) Proof that public notice has been completed shall be provided to the department.

(d) The owner or operator of a community public water supply system shall provide a copy of the most recent public notice for any continuing violation of a maximum contaminant level or treatment technique, or any variance or exemption schedule, to each new customer at the time service begins.

(e) (1) Each notice required by this regulation shall provide a clear and readily understandable explanation of the violation, any potential adverse health effects, the population at risk, the steps that the public water system is taking to correct such violation, the necessity for seeking alternative water supplies, if any, and any preventive measures the consumer should take until the violation is corrected.

(2) Each notice shall be conspicuous and shall not contain unduly technical language, unduly small print, or similar problems that frustrate the purpose of notice.

(3) Each notice shall include the telephone number of the owner, operator, or designee of the public water system as a source of additional information concerning the notice.

(4) Where appropriate, the notice shall be multilingual.

(f) The owner or operator of a public water supply system shall include mandatory health-effects language for the appropriate contaminant, specified in 40 CFR 141.32(e), as in effect July 1, 1993, and in Part 141, national primary drinking water regulations, federal register, volume 57, number 138, as published on Friday, July 17, 1992, section 141.32(e) (53) through (75), in any

public notice issued for violation of a maximum contaminant level or treatment technique, or related to a variance or exemption. If the public notice is for fluoride, the mandatory health-effects language specified in 40 CFR 143.5(b), as in effect July 1, 1993, shall be used. (Authorized by and implementing K.S.A. 65-171m; effective Sept. 21, 1992; amended Sept. 26, 1994; amended Jan. 9, 1995.)

28-15-16. **Permit requirements for public water supply systems.** (a) All public water supply systems shall be required to have a permit issued by the secretary.

(1) An application for a public water supply permit shall be submitted for review and approval before the use of a source of water supply or the construction of:

(A) new wells;

(B) pumping stations;

(C) finished water storage facilities; or

(D) water treatment plants.

(2) An application requesting approval for construction purposes shall be valid for a period of two years, and if construction has not commenced by that time, a new application will be required.

(3) The following information shall be submitted as part of the application:

(A) a copy of the plans and specifications for the public water supply system or extension of it;

(B) a description of the source from which the water is to be derived;

(C) the proposed manner of storage, purification or treatment of the raw water source;

(D) sufficient data on the raw water to insure that the proposed treatment facilities will produce potable water to meet the requirements of K.A.R. 28-15-13; and

(E) for every new source of water supply, either surface or ground, that is added to a public water supply system, the results from an analysis performed by a state certified laboratory regarding the chemical and radiological constituents of K.A.R. 28-15-13. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982, amended Jan. 9, 1995.)

28-15-17. **Siting requirements.** A new or expanded facility shall not be initiated or constructed at a site which the department determines: (a) Is subject to a significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water supply system or a portion of it;

(b) Except for intake structures, is within the floodplain of a one-hundred (100) year flood; and is lower than the recorded high water level where appropriate records exist; or

(c) Is adjacent to a major source of pollution, which the department determines has a potentially adverse influence on the water supply. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982.)

28-15-18. **Operation and maintenance requirements.** (a) All public water supply systems shall be operated, maintained and supervised by certified personnel in accordance with K.S.A. 65-4501 to 65-4517 and the amendments to these statutes.

(b) The records of all laboratory tests, chlorine residuals, turbidity determinations, copies of written communications relating to sanitary surveys, or efforts to correct a violation of these regulations made by the supplier of water, by a private consultant or by any governmental agency shall be kept on file for a period of ten (10) years. These records, reports and written communications shall be readily available in a convenient location for an inspection by the secretary or an authorized representative of the secretary. All records concerning an exemption or variance granted to a supplier of water shall be kept for a period of ten (10) years following the expiration of the exemption or variance.

These records shall contain the following information:

(1) The date, place and time of sampling and the name of the person collecting the sample;

(2) The appropriate identification as to whether the water sample was a routine distribution sample, a check sample or a special purpose sample;

(3) The date of the analysis;

(4) The laboratory and the person responsible for performing the analysis and the analytical technique or method used; and

(5) The results of the analysis.

(c) If these regulations are violated and the laboratory tests were performed by a laboratory other than the departmental laboratory; the public water supply system shall report the violation to the department not later than forty-eight (48) hours following the detection of the violation. All results of laboratory tests performed by an approved laboratory in compliance with K.A.R. 28-15-13 and K.A.R. 28-15-14 shall be submitted to the de-

partment not later than thirty (30) days following the completion of the analyses.

(d) All community water systems and any high risk non-community water systems as designated by the department shall immediately notify the department and responsible local officials of a situation with the water system including a major breakdown or serious loss of water service which presents or may present an imminent and substantial endangerment to health.

(e) All community water systems shall prepare an emergency operations plan to safeguard the water supply for the protection of the public if natural or man-made disasters occur. Emergency operation plans shall be submitted to the department for review and approval.

(f) Newly constructed or repaired water distribution mains and finished water storage facilities shall be flushed and disinfected before use in accordance with methods acceptable to the department.

(g) All community water systems shall be operated and maintained to provide a minimum positive pressure of 20 psi ($140 kN/m^2$) throughout the distribution system except under extraordinary conditions such as unusual peak fire flow demand or major distribution system breaks.

(h) All community water systems and any high risk non-community systems designated by the department shall have a regular program, approved by the department, for the detection and elimination of cross-connections and prevention of backflow and backsiphonage.

(i) All finished water reservoirs shall be covered by a permanent protective material and shall be adequately vented and screened.

(j) Treatment chemicals and protective coatings exposed to water intended for public consumption shall be used only if approved by the department. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982.)

28-15-19. **Disinfection of drinking water.** (a) All drinking water supplied to the public from a public water supply system shall be disinfected.

(b) When chlorination is employed, a sufficient amount of chlorine shall be added to the water to maintain a distribution system chlorine residual of at least 0.2 mg/l of free chlorine or 1.0 mg/l of combined chlorine.

(1) Failure to maintain a residual as specified above in more than five percent of measurements taken each month, in any two consecutive months shall be deemed a violation of this regulation.

(2) Each day the public water supply system serves water to its customers, the operator shall make a determination of the chlorine residual. The data shall be recorded in such a manner that the department can determine whether the requirements of this rule and regulation have been met. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982; amended Sept. 26, 1994.)

28-15-20. **Exemptions and variances.** (a) Any supplier of water may be granted a variance or exemption from the requirements of K.A.R. 28-15-11 to 28-15-22, inclusive, under the provisions of K.S.A. 65-171p or 65-171q.

(b) The provisions set forth in the national primary drinking water regulations, 40 CFR 142.40-142.62, as in effect on July 1, 1992, are adopted by reference and shall be used in the consideration and issuance of exemptions and variances. (Authorized by and implementing K.S.A. 65-171m; effective May 1, 1982; amended Sept. 21, 1992; amended Sept. 26, 1994.)

28-15-21. **Surface water treatment rule.** Each public water supply system with a surface water source, or a ground water source under the influence of surface water, shall provide filtration and disinfection treatment of the source water that complies with these treatment technique regulations. Sources of supply which are designated by the department to be ground water under the influence of surface water shall have 18 months from the date of the determination to either provide filtration and disinfection treatment for that source or to discontinue using that source. Systems which do not meet the requirements of this section are in violation of the treatment technique requirements, and shall issue public notice as required in K.A.R. 28-15-15a.

(a) The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99.9 percent (3-log) combined removal or inactivation of Giardia lamblia cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer; and

(2) At least 99.9 percent (4-log) combined removal or inactivation of viruses between a point where the raw water is not subject to recontami-

nation by surface water runoff and a point downstream before or at the first customer.

(b) Each public water supply system which uses surface water, or groundwater under the influence of surface water, shall provide filtration and disinfection treatment as follows on or before June 29, 1993, or when filtration is installed.

(1) Disinfection treatment shall be sufficient to ensure that the total treatment processes of the system achieves at least 99.9 percent (3-log) combined inactivation or removal of Giardia lamblia cysts and at least 99.99 percent (4-log) combined inactivation or removal of viruses.

(2) The disinfectant concentration in the water entering the distribution system, shall not be less than 0.2 mg/l as free available chlorine or less than 1.0 mg/l as combined chlorine for more than 4 hours.

(3) The disinfectant concentration in the distribution system shall not be less than 0.2 mg/l as free available chlorine or less than 1.0 mg/l as combined chlorine in more than five per cent of measurements taken each month, for any two consecutive months.

(c) All public water supply systems which use surface water, or ground water under the influence of surface water, must meet the following criteria on or before June 29, 1993.

(1) For systems using conventional filtration treatment or direct filtration, the filtered water turbidity level shall be less than or equal to 0.5 NTU in at least 95 percent of the samples taken each month, except that the department may allow a deviation for those systems which can demonstrate 99.9 percent combined inactivation or removal of Giardia lamblia cysts at a higher level of turbidity, in which case the filtered water turbidity level shall be less than 1.0 NTU in 95 percent of the samples taken each month. In no case shall the filtered water turbidity level exceed 5.0 NTU.

(2) For systems using slow sand filtration, the filtered water turbidity level shall be less than or equal to 1.0 NTU in at least 95 percent of the samples taken each month, except that the department may allow a deviation for those systems which can demonstrate 99.9 percent combined inactivation or removal of Giardia lamblia cysts at a higher level of turbidity, but in no case shall the filtered water turbidity level exceed 5.0 NTU.

(3) For systems using diatomaceous earth filtration, the filter water turbidity level shall be less than or equal to 1.0 NTU in at least 95 percent of the measurements taken each month, but in no case shall the filtered water turbidity level exceed 5.0 NTU.

(4) A public water supply may use a filtration technology not listed in this section if it demonstrates to the department, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment, provides at least 99.9 percent combined removal or inactivation of Giardia lamblia cysts and 99.99 percent combined removal or inactivation of viruses. In addition, the filtered water turbidity shall be less than or equal to 1.0 NTU in 95 percent of the samples taken each month, but in no case shall the turbidity level of a system's filtered water exceed 5.0 NTU.

(d) Only the following analytical methods are acceptable for determining compliance with these regulations. Laboratories performing total coliform or fecal coliform shall be certified by the department. Laboratories performing pH, temperature, turbidity or residual disinfectant concentration shall be approved by the department.

(1) Fecal coliform analysis shall be performed in accordance with the provisions of 40 CFR 141.74(a)(1) as in effect on July 1, 1991.

(2) Total coliform concentration shall be performed in accordance with the provisions of 40 CFR 141.74(a)(2) as in effect on July 1, 1991.

(3) Turbidity analysis shall be performed in accordance with the provisions of 40 CFR 141.74(a)(4) as in effect on July 1, 1991.

(4) Residual disinfectant analysis shall be performed in accordance with the provisions of 40 CFR 141.74(a)(5) as in effect on July 1, 1991.

(5) Temperature analysis shall be performed in accordance with the provisions of 40 CFR 141.74(a)(6) as in effect on July 1, 1991.

(6) pH analysis shall be performed in accordance with the provisions of 40 CFR 141.74(a)(7) as in effect on July 1, 1991.

(e) A public water system that uses a surface water source, or a ground water source under the influence of surface water, shall monitor as follows, beginning June 29, 1993 or when filtration is installed, whichever is later.

(1) Turbidity measurements shall be performed on representative samples of the system's filtered water every four hours that the system serves water to the public.

(A) Continuous turbidity monitoring may be substituted for grab samples if the grab samples validate the continuous measurements for accuracy on a regular basis and the turbidimeter is cal-

ibrated by an approved secondary standard on a weekly basis.

(B) Turbidity measurements may be taken on a daily basis for public water systems which provide filtration by slow sand filtration or by means other than conventional treatment, direct filtration or diatomaceous earth filtration, at the department's discretion.

(C) For systems which serve fewer than 500 persons, the department may allow turbidity measurements to be taken on a daily basis if it is determined that the less frequent monitoring is sufficient to indicate effective filtration performance.

(2) Public water supply systems serving more than 3300 people shall monitor the residual disinfectant concentration of the water entering the distribution system continuously, and the lowest value shall be recorded each day. If there is a failure in the continuous monitoring equipment, grab samples may be collected every 4 hours and analyzed for disinfectant residual in lieu of continuous monitoring, but for no more than 5 working days following the failure of the equipment. Public water supply systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring at the frequencies prescribed below:

System size by population	Samples/day
Less than 500	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

If at any time the disinfectant residual falls below 0.2 mg/l as free chlorine or 1.0 mg/l as combined chlorine in a system using grab sampling in lieu of continuous monitoring, the system shall take a grab sample every 4 hours until the residual disinfectant concentration is equal to or greater than 0.2 mg/l as free chlorine or 1.0 mg/l as combined chlorine.

(3) The residual disinfectant concentration shall be measured at least at the same points in the distribution system and at the same time as total coliform is sampled, as specified in K.A.R. 28-15-14.

(f) A public water supply that uses a surface water source, or a ground water source under the influence of surface water, shall report the following information monthly to the department, beginning June 29, 1993 or when filtration is installed, whichever is later.

(1) Turbidity reports required by section (e)(1) of this regulation shall be submitted within 10 days after the end of each month the system serves water to the public. Information that shall be reported includes:

(A) The total number of filtered water turbidity measurements taken during the month;

(B) the number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limit specified in section (c) of this regulation for the filtration technology being used; and

(C) the date and value of any turbidity measurements taken during the month which exceed 5 NTU.

(2) Disinfection information specified in section (e) of this regulation shall be reported to the department within 10 days after the end of each month the system serves water to the public. Information that shall be reported includes:

(A) For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system;

(B) the date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l as free chlorine or 1.0 mg/l as combined chlorine and when the department was notified of the occurrence; and

(C) the following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to section (b) of this regulation:

(i) The number of instances where the disinfection residual was taken; and

(ii) the number of instances where the disinfection residual was greater then or equal to 0.2 mg/l as free chlorine or 1.0 mg/l as combined chlorine.

(3) Each system, upon discovery of any water borne disease outbreak potentially attributable to that water system, shall report the occurrence to the department as soon as possible, but no later than by the end of the next business day.

(4) If at any time the turbidity exceeds 5 NTU, the system shall inform the department as soon as possible, but not later than the end of the next business day.

(5) If at any time the residual falls below 0.2 mg/l as free chlorine or 1.0 mg/1 as combined chlorine in the water entering the distribution system, the system shall notify the department as soon as possible, but no later than the end of the

next business day. The system shall also notify the department by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l as free chlorine or 1.0 mg/l as combined chlorine within 4 hours.

(g) Variances and exemptions

(1) No variances from the requirements in this regulation are permitted.

(2) No exemptions from the requirements in section (b) of this regulation are permitted. (Authorized by and implementing K.S.A. 65-171m; effective June 21, 1993.)

28-15-22. **Lead and copper; general requirements.** The requirements of this regulation shall constitute the drinking water regulation and treatment technique for lead and copper.

(a) Unless otherwise indicated, each of the provisions of this regulation shall apply to community water systems and non-transient non-community public water supply systems hereinafter referred to as ''water system'' or ''systems.''

(b) Lead and copper action levels.

(1) If the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with 40 CFR 141.86 as in effect on July 1, 1992, is greater than 0.015 mg/L, the lead action level shall be deemed to have been exceeded.

(2) If the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with 40 CFR 141.86 as in effect on July 1, 1992, is greater than 1.3 mg/L, the copper action level shall be deemed to have been exceeded.

(3) The 90th percentile lead and copper levels shall be computed using one of the following methods.

(A) For systems serving 100 or more people, the following method shall be used.

(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number one for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in K.A.R. 28-15-22(c)(3)(B) shall be deemed the 90th percentile contaminant level.

(B) For water systems serving fewer than 100 people that collect five samples per monitoring period, the 90th percentile shall be computed by taking the average of the highest and second highest concentrations.

(c) Corrosion control treatment requirements.

(1) All water systems shall install and operate a system of optimal corrosion control treatment as defined in K.A.R. 28-15-11.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the department under 40 CFR 141.81 and 40 CFR 141.82 as in effect on July 1, 1992 shall be deemed in compliance with the treatment requirement contained in K.A.R. 28-15-22(d)(1).

(d) Source water treatment requirements. Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the department under 40 CFR 141.83 as in effect on July 1, 1992.

(e) Lead service line replacement requirements. Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in 40 CFR 141.84 as in effect on July 1, 1992.

(f) Public education requirements. Any system exceeding the lead action level shall implement the public education requirements contained in 40 CFR 141.85 as in effect on July 1, 1992.

(g) Monitoring and analytical requirements. Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this regulation shall be completed in compliance with 40 CFR 141.86, 141.87, 141.88 and 141.89 as in effect on July 1, 1992.

(h) Reporting requirements. Systems shall report to the department any information required by the provisions of 40 CFR 141.90 as in effect on July 1, 1992.

(i) Recordkeeping requirements. Systems shall maintain records in accordance with 40 CFR 141.91 as in effect on July 1, 1992.

(j) Violation of drinking water regulations. Failure to comply with the applicable requirements

of this regulation shall constitute a violation of the drinking water regulations for lead, copper or both. (Authorized by and implementing K.S.A. 65-171m; effective Sept. 26, 1994.)

28-15-23 to 28-15-24. **Reserved.**

28-15-25. (Authorized by K.S.A. 1977 Supp. 65-171m; effective, E-78-33, Dec. 7, 1977; effective May 1, 1978; revoked, L. 1982, ch. 471.)

28-15-26 to 28-15-34. **Reserved.**

28-15-35. **Conditions of certification.** (a) Definitions.

(1) ''Analyst'' means a person who performs tests with minimal supervision in those specialties for which that person is qualified by education, training and experience.

(2) ''Analyte'' means any element, compound or substance for which analysis is performed.

(3) ''Approved performance evaluation sample'' means an external sample required to be analyzed as a means of assessing analytical proficiency. Studies which offer approved samples may include the EPA water pollution and water supply studies.

(4) ''Certification'' means the issuance of a document by the secretary attesting to the fact that a laboratory has met the minimum requirements of K.A.R. 28-15-35, 28-15-36, 28-15-36a, and 28-15-37.

(5) ''Certified'' means a laboratory which meets all of the requirements for certification as defined in K.A.R. 28-15-36 or 28-15-36a.

(6) ''Clean Water Act (CWA)'' means U.S. public law 92-500 as in effect on October 18, 1972 and amendments thereto, which governs water pollution control programs.

(7) ''Conditional certification'' means certification issued for:

(A) an additional parameter utilizing a technology not previously inspected by the laboratory certification officer and for which acceptable performance studies, if available, have been successfully analyzed; or

(B) a field laboratory prior to inspection.

(8) ''Department'' means the Kansas department of health and environment.

(9) ''EPA'' means the U.S. environmental protection agency.

(10) ''Field laboratory'' means any Kansas environmental laboratory performing compliance analyses limited to one or more of the following parameters:

(A) chlorine;

(B) dissolved oxygen;

(C) hydrogen ion (pH);

(D) settleable solids;

(E) sulfite;

(F) temperature; or

(G) turbidity.

(11) ''Interim certification'' means certification based upon state-of-the-art technology for which EPA has not yet given method approval and for which monitoring is required by the department.

(12) ''Laboratory'' means a single, fixed organizational unit under single management which can be identified as a reporting unit consisting of one or more physical facilities engaged in the receiving, analysis, and reporting of results of environmental testing. Mobile laboratories are not eligible for certification.

(13) ''Laboratory certification officer'' means any person determined by the department to have adequate credentials to evaluate laboratories supplemented by successful completion of the EPA drinking water laboratory certification officers' training course.

(14) ''Laboratory director'' means a person whose functions are to direct technical personnel and evaluate the quality of test procedures performed in the laboratory.

(15) ''Laboratory manager'' means the person who has the administrative and legal responsibility for the operation of a laboratory.

(16) ''Parametric group'' means the analyses of related parameters utilizing a single method.

(17) ''Provisionally certified'' means a laboratory which has deficiencies but has corrective action in progress and can still produce valid data.

(18) ''Reciprocity'' means department recognition of the validity of certification granted by another state, federal or independent agency in order to issue Kansas certification, based upon the evaluation conducted by that agency.

(19) ''Resource Conservation and Recovery Act (RCRA)'' means U.S. public law 93-580 as in effect on January 2, 1975 and amendments thereto, which governs solid and hazardous waste programs.

(20) ''Safe Drinking Water Act (SDWA)'' means U.S. public law 93-523 as in effect on December 16, 1974 and amendments thereto, which governs drinking water programs.

(21) ''Secretary'' means the secretary of the department.

(22) ''Uncertified status'' means the loss of certification for a single parameter or parametric group.

(b) Initial application. An initial application shall be made on forms provided by the department. The application shall include the following:

(1) laboratory name and address;

(2) name and address of owner or owners of the laboratory;

(3) the parameters and methods for which approval is being sought;

(4) names of the laboratory director, laboratory manager, or consultant and analytical personnel, with their training and experience; and

(5) the application fees as provided for in K.A.R. 28-15-37.

(c) Completed application forms shall be submitted to the department. The laboratory certification officer shall then determine which parameters or parametric groups may be considered for approval. A statement of fees shall be determined and and an on-site review, if applicable, shall be scheduled. Upon determination that the laboratory meets the minimum requirements established in K.A.R. 28-15-36, a certificate shall be issued. To maintain uninterrupted certification, each laboratory shall file an application for renewal at least 60 calendar days before the current application expires.

(d) When applications are submitted requesting certification for additional analytes, the expiration date for such additional certification shall be the same date indicated on the certificate currently in effect for that laboratory.

(e) A laboratory certification officer shall conduct on-site evaluations at a frequency established by the secretary, but at a minimum of at least once every three years. On-site evaluations shall be conducted to determine that the laboratory continues to meet the minimum requirements for certification as defined in K.A.R. 28-15-36. Additional on-site evaluations may be conducted at the discretion of the secretary. An on-site evaluation may also be performed to resolve complaints or problems indicated by deficiencies from performance evaluation audits, deficiencies from prior on-site evaluations or when a certified laboratory changes location and/or key personnel.

(f) Scope of certification.

(1) Laboratories may be certified for any of the following:

(A) drinking water certification;

(B) wastewater certification;

(C) solid/hazardous waste certification; or

(D) field laboratory certification as required by the SDWA, and CWA. Approval for individual parameters will be granted based upon approved methodology and successful completion of an on-site evaluation.

(2) Interim certification and conditional certification may also be granted for individual parameters or parametric groups.

(3) Certification of field laboratories shall be limited to parameters defined in paragraph (a)(10) of this regulation.

(g) Notification of certification.

(1) A certificate shall be issued by the secretary at the beginning of a certification period to each laboratory satisfactorily meeting all requirements of K.A.R. 28-15-35, 28-15-36, 28-15-36a, and 28-15-37. The parameters or parametric groups for which the laboratory is certified shall be noted.

(2) Downgrade of certification status.

(A) Drinking water certification may be downgraded from certified status to provisional status or from provisional status to uncertified status for the following reasons:

(i) failure to analyze a performance evaluation audit-sample within acceptance limits established by USEPA;

(ii) failure of a certified laboratory to notify the laboratory certification officer in writing within 30 days of changes in laboratory manager or laboratory director, analytical methodology, laboratory location, laboratory name or ownership; or

(iii) failure to satisfy the laboratory certification officer that the laboratory is maintaining the required standard of quality, based upon an on-site evaluation.

Corrective action on deficiencies cited shall be submitted within 30 days.

(B) Wastewater, and Solid/Hazardous waste certification may be downgraded from certified status to uncertified status for the following reasons:

(i) failure to analyze a performance evaluation audit sample within acceptance limits established by the department;

(ii) failure of a certified laboratory to notify the laboratory certification officer in writing within 30 days of changes in laboratory manager or laboratory director, methods which involve a change in technology, or laboratory location; or

(iii) failure to satisfy the laboratory certification officer that the laboratory is maintaining the re-

quired standard of quality, based upon an on-site evaluation.

Corrective action on deficiencies cited shall be submitted within 30 days.

(h) Revocation of certificate. A certificate may be revoked when it is determined that there has been:

(1) failure to maintain compliance with K.A.R. 28-15-35, 28-15-36, 28-15-36a, and 28-15-37;

(2) reporting, as official compliance data, any parameter or analytical result for which certification has not been obtained; or

(3) false reporting or other misrepresentation of fact.

(i) The affected laboratory shall be notified in writing of the specific action taken, the reasons for revocation, and the effective date of revocation. Analytical results obtained after a certificate has been revoked or downgraded to uncertified status cannot be submitted as official compliance data in conforming with requirements of K.S.A. 65-163 to 65-171t, inclusive, and K.A.R. 28-15-35, 28-16-28b, 28-16-63 and 28-31-4.

(j) Recertification after revocation.

(1) After revocation, the laboratory may not seek recertification for six months.

(2) Recertification shall not be made until a laboratory has demonstrated to the satisfaction of the secretary that the deficiencies which caused revocation have been corrected.

(3) For recertification a new initial application form shall be submitted.

(k) (1) Establishment of reciprocity for the certification of laboratories located outside the state of Kansas. Laboratories located outside of the state of Kansas, that perform laboratory services in compliance with K.S.A. 65-163 to 65-171t, inclusive, and K.A.R. 28-15-35, 28-16-28b, 28-16-63, and 28-31-4, may be certified by the department, providing that the laboratory is certified by a federal, state or independent agency having equivalent or more stringent standards than those denoted herein.

(2) Each out-of-state laboratory shall submit the following documentation for evaluation by the department:

(A) current certification with a minimum unexpired duration of at least three months from initial application, or if a renewal application, three months beyond the expiration date of the Kansas certificate;

(B) a report of the most recently completed on-site evaluation from the certifying authority. The evaluation shall have been completed within the last three years and shall include the laboratory's response to all deviations;

(C) personnel qualifications;

(D) analytical methods utilized;

(E) standards on which current certification is based; and

(F) any other documentation as deemed by the department to be pertinent.

(3) Documentation shall be accompanied by the appropriate application fee and program review fee.

(4) Laboratories located outside of Kansas shall not be approved as field laboratories.

(5) In lieu of reciprocity, out-of-state laboratories may apply for and receive certification from the department provided that:

(A) the laboratory is located within 25 miles of the Kansas border;

(B) the laboratory is performing laboratory services for their own company facility located within the state of Kansas to comply with K.S.A. 65-163 to 65-171t, inclusive, and K.A.R. 28-15-25, 28-16-28b, 28-16-63, and 28-31-4; and

(C) the laboratory meets all other requirements for certification as denoted herein. (Authorized by and implementing K.S.A. 65-171l, 65-3431; effective, E-79-14, June 23, 1978; effective May 1, 1979; amended May 1, 1983; amended May 1, 1986; amended May 1, 1988; amended Jan. 24, 1994.)

28-15-36. **Requirements for certification other than field laboratories.** The following requirements shall serve as the basis for certification of environmental laboratories. (a) Personnel requirements. The laboratory shall have personnel to perform all analyses and conduct all quality assurance activities for which the laboratory is to be certified. An individual assuming the duties of more than one position shall meet the more stringent of the two duties' qualifications. Each laboratory shall be certified only after presentation of satisfactory documentation to the department regarding education and work experience of the laboratory manager, laboratory director and analysts.

(1) Laboratory manager. If the legal and administrative responsibilities of the laboratory are not held by the laboratory director, the position of laboratory manager shall be required.

(2) Laboratory director. The laboratory director is responsible for the technical and scientific oversight of the laboratory.

(A) The minimum qualifications for a laboratory director shall be as follows:

(i) a bachelor's degree in the sciences from an accredited institution of higher education. The individual shall have the number of credit hours in the appropriate specialty equivalent to a degree minor, plus two years work experience in the appropriate specialty in a certified environmental laboratory or its equivalent as determined by the laboratory certification officer; or

(ii) completion of a number of credit hours in the appropriate specialty equivalent to a degree minor and six years of analytical laboratory experience.

(B) Persons working in the capacity of laboratory director in a Kansas certified laboratory on the effective date of this regulation may continue to qualify as the laboratory director.

(C) The minimum qualifications requirements for a laboratory director may be waived for municipal and field laboratories performing limited testing.

(3) Consultant.

(A) If a laboratory director is not available, a consultant having the qualifications stated in paragraph (a) (2)(A)(i) of this regulation, may be substituted.

(B) A consultant shall have a valid contract with the certified laboratory.

(C) The consultant shall meet with the certified laboratory on a regular basis and be available at all times for problem solving.

The consultant requirement may be waived for municipal and field laboratories performing limited testing. The position of laboratory manager is required.

(4) Chemist. The chemist performs organic, inorganic, or physical analyses. The minimum qualification for all chemists shall be a bachelor's degree in chemistry or a related field from an accredited institution of higher education.

(5) Chemical analyst. The chemical analyst performs organic, inorganic, or physical analyses under supervision. The minimum qualification for all chemical analysts shall be a high school diploma or its equivalent.

(6) Chemist and chemical analyst. Qualifications for operators of atomic absorption (AA), ion chromatograph (IC), gas chromatograph (GC), gas chromatograph/mass spectrometer (GC/MS), inductively coupled plasma (ICP), inductively coupled plasma/mass spectrometer (ICP/MS), liquid chromatograph (LC), high performance liquid chromatograph (HPLC), and transmission electron microscope (TEM) instruments shall be:

(i) satisfactory completion of a short course in AA, IC, GC, GC/MS, ICP, ICP/MS, LC, HPLC, or TEM offered by an equipment manufacturer, professional organization, university, or other qualified training facility, which may include in-house training;

(ii) six months' experience in the operation of the AA, IC, GC, ICP, LC, HPLC, or TEM;

(iii) twelve months' experience in the operation of the GC/MS, or ICP/MS; and

(iv) after being trained in a methods training course or by any qualified analyst, the person trained shall demonstrate acceptable results in the analysis of applicable quality control samples or performance evaluation samples.

(7) Biologist or microbiologist. The biologist or the microbiologist performs aquatic toxicity tests or microbiological analysis. Minimum qualifications shall be:

(A) a bachelor's degree in biology, microbiology or related field, plus one year analytical experience in a biology, microbiology laboratory or its equivalent; and

(B) a minimum of two weeks' training from a federal, state or academic institution in aquatic toxicity or microbiology testing.

(8) Biology analyst or microbiological analyst. The biology analyst or microbiological analyst performs microbiological or biological tests with minimum supervision. Minimum qualifications for the microbiology analyst or the biology analyst shall be:

(A) a high school diploma or equivalent; and

(B) training in microbiological or biological analysis acceptable to the laboratory certification officer; and

(C) a minimum of 30 days on-the-job training.

(9) Data produced by chemistry, biology or microbiology analysts while in the process of obtaining the required training or experience shall be acceptable when reviewed and validated by a fully qualified analyst or laboratory director.

(10) Change of personnel. A certified laboratory shall notify the laboratory certification officer in writing when changes of the laboratory manager, laboratory director or key personnel occur. A personnel form shall be submitted for each new employee in each category. This written notifica-

tion shall be submitted within 30 days of the change.

(b) Laboratory facilities.

(1) Each facility for chemical analyses shall meet the following requirements.

(A) Each facility shall be clean, air conditioned, and have adequate light and ventilation.

(B) Each laboratory shall have sufficient bench-top area for processing samples and storage. Sufficient bench-top area should be approximately 10 linear feet of usable bench space per analyst. Sufficient floor space should be 150 to 200 square feet per analyst.

(C) Each laboratory shall have adequate provisions for the proper disposal of chemical and biological wastes.

(D) The analytical and sample storage areas shall be isolated from all potential sources of contamination.

(E) Each laboratory shall have a safety plan as part of its standard operating procedure. Where safety practices are included in an approved method, they shall be strictly followed.

(F) Exhaust hoods shall be required for the analysis or handling of trace elements and organics. This includes venting for preparation, extraction and analysis.

(2) Each facility for microbiological examinations shall meet the following requirements.

(A) Work space shall include:

(i) sufficient bench-top area for processing samples;

(ii) storage space for media, glassware, and portable equipment;

(iii) floor space for stationary equipment; and

(iv) an area for cleaning glassware and for sterilizing materials.

(B) Each facility shall be clean, air conditioned, and have adequate lighting at the bench-top.

(C) Each laboratory shall have a safety plan as part of its standing operating procedure. Where safety practices are included in an approved method, they shall be strictly followed.

(D) Each laboratory shall have adequate provisions for the proper disposal of chemical and biological wastes.

(3) Facilities for biological analyses shall meet the following requirements.

(A) Work space shall be adequate to accommodate peak workload. It shall include sufficient bench-top area for processing samples, storage space for reagents, glassware, aquariums and other portable equipment. There shall be sufficient floor space for stationary equipment and an associated area for cleaning glassware and for preparing materials. Toxicity testing and chemical analyses shall be done in separate areas. Culture maintenance shall be done in a separate room.

(B) Each facility shall be capable of holding a consistent ambient temperature.

(C) Each facility shall be clean, air conditioned, and have adequate lighting at the bench-top.

(c) Laboratory equipment and supplies. All equipment, reagents, and glassware necessary for the satisfactory performance of laboratory analyses shall be on hand for the specific analysis for which the laboratory is to be certified. Equipment and instrumentation used for biomonitoring, shall not be used for other laboratory testing.

(d) Sample collection, handling and preservation. To ensure the quality of environmental analysis, each sample shall be properly collected, handled and preserved. Each laboratory shall ensure that the sample has been properly handled prior to analysis regardless of who has responsibility for sample collection. Each sample collected for compliance purposes shall meet all EPA collection, handling and preservation requirements as prescribed by the regulations promulgated under the clean water act, the safe drinking water act and the resource conservation and recovery act.

(1) When the client has responsibility for sample collection the laboratory shall meet the following requirements.

(A) Sample containers shall be of an EPA-approved type that is compatible with the analysis requested.

(B) Sample preservation shall be in the manner prescribed by EPA-approved methodology for the analysis requested.

(C) The time and date of collection of each sample shall be known by the laboratory to ensure that required EPA holding times have not been exceeded.

(2) When the laboratory has responsibility for sample collection, in addition to the requirements of section (d)(1), the laboratory shall meet the following requirements.

(A) The sample collector shall be trained in sampling procedures. A written sampling protocol with specific sampling instructions shall be available to each sample collector, and for inspection by the laboratory certification officer.

(B) A sample collection form shall be completed. This form shall contain sampling location, date and time of collection, collector's name,

method of preservation, and any special remarks concerning the sample.

(C) Upon receipt in the laboratory, each sample shall be labeled so as to be continuously uniquely identified.

(D) Each laboratory shall have available an acceptable chain-of-custody procedure from collection through analysis which can document every person who handles samples.

(E) For each sample that is forwarded to another laboratory for analysis, an appropriate chain of custody form shall be maintained. A copy of each original laboratory report form shall be maintained. The reporting laboratory shall specify the name of the laboratory performing the analysis.

(e) Analytical methods.

(1) Each drinking water sample analyzed under the safe drinking water act shall be analyzed in accordance with methods and method detection limits approved by the laboratory certification officer as required by the safe drinking water act.

(2) Each environmental water sample analyzed under the clean water act shall be analyzed in accordance with methods approved by the laboratory certification officer as required by the clean water act.

(3) Each solid and hazardous waste sample analyzed under the resource conservation and recovery act shall be analyzed in accordance with methods approved by the laboratory certification officer as required by the resource conservation and recovery act.

(4) Interim methods. Parameters required by the department for compliance with regulatory programs for which there are no EPA-approved methods may be granted interim certification.

(f) Laboratory quality assurance program. Each certified environmental laboratory shall implement and maintain an effective written quality assurance plan to ensure that routinely generated analytical data are scientifically valid and defensible and are of known and acceptable precision and accuracy. The following are the minimum areas that shall be addressed in the quality assurance plan.

(1) Sampling procedures. Sampling equipment, techniques, containers, preservation and holding times shall be defined.

(2) Instrument calibration procedures and frequency. Specific routine procedures for calibrating analytical instruments shall be defined.

(3) Analytical methods.

(A) A list of analytical tests and parameters performed by the laboratory shall be compiled. For each parameter, this list shall include the method reference, method detection limit and, if established, the practical quantitation limit.

(B) A written procedure for conducting analytical tests shall be available.

(4) Internal quality control procedures and frequency of use. Internal quality control procedures shall include the preparation and use of calibration curves, instrument calibration, laboratory calibration check standards, matrix spike and matrix spike duplicate analysis. If the method includes a description of quality control measures, these measures shall be followed. Additionally, it is required to analyze a standard reference once every calendar quarter for every applicable analytical parameter and as a verification for newly prepared standards.

(5) Data reduction and reporting. Procedures for data reduction, and for the conversion of raw data to final concentrations shall be defined. Reporting procedures and format shall be included.

(6) Performance evaluation. The type and frequency of external performance evaluation audits shall be addressed.

(7) Written preventive maintenance procedure and schedules shall be addressed.

(8) Data acceptability. Routine procedures shall be established to determine data precision and accuracy. Quality control data shall be reviewed periodically and shall be available for inspection by the laboratory certification officer.

(9) Corrective action. Details of any measures to be taken when data that are obtained from analytical quality control checks are unacceptable shall be outlined.

(10) The quality assurance plan shall be reviewed, approved and signed annually by the laboratory manager or laboratory director.

(g) Records management. Analytical data shall be reported in units consistent with monitoring agency requirements. A record of each environmental analysis shall be kept by the laboratory for not less than five years or as specified by the safe drinking water act, the clean water act, and the resource conservation and recovery act. One year of the most current records shall be kept on-site and the remaining four years of records may be archived in a secure and easily accessible storage facility. These records shall include final reports, all raw data, data collection sheets, calculations, instrument calibration/tuning, quality assurance

data and performance evaluation results. The following information shall also be included:

(1) Date, place and time of sampling and the name of the person who collected the sample.

(2) Identification of the sample.

(3) Date of sample receipt and date and time of analysis.

(4) Person responsible for performing the analysis.

(5) Analytical method used.

(6) Results of analysis.

(7) Laboratory name or place of analysis.

(8) Documentation of appropriate sample disposal.

(h) Performance evaluation. Each laboratory, excluding field laboratories, shall be certified only after obtaining acceptable results from the analysis of approved performance evaluation samples submitted to the laboratory. A minimum of one performance evaluation study, if available, shall be satisfactorily analyzed by an applicant prior to certification. In conjunction with the resolution of complaints or at the discretion of the laboratory certification officer, additional audit samples may be submitted to a certified laboratory to determine the quality of its routine analytical work. Criteria for acceptable performance shall be available from the department. (Authorized by and implementing K.S.A. 65-171l, 65-3431 and 65-3406; effective, E-79-14, June 23, 1978; effective May 1, 1979; amended May 1, 1983; amended May 1, 1986; amended May 1, 1988; amended Jan. 24, 1994.)

28-15-36a. **Requirements for certification of field laboratories.** (a) Certification of a field laboratory shall be granted only to those laboratories performing environmental analyses limited to one or more of the following parameters:

(1) chlorine;

(2) dissolved oxygen;

(3) hydrogen ion (pH);

(4) settleable solids;

(5) sulfite;

(6) temperature; or

(7) turbidity.

(b) Personnel. Personnel performing analytical procedures in a field laboratory shall meet the following minimum qualifications:

(1) a high school diploma or equivalent; and

(2) one month's experience in performing the analyses being considered for approval.

(c) Facilities and equipment.

(1) The following shall be at a fixed location and available to the analyst:

(A) six linear feet of usable bench space;

(B) a sink with hot and cold running water;

(C) adequate electrical sources; and

(D) a source of laboratory pure water.

(2) Only those items of equipment which are necessary for the performance of the analyses under consideration shall be required to be available.

(d) Analytical methods. Drinking water samples shall be analyzed in accordance with methods approved by the laboratory certification officer as required by the safe drinking water act. Environmental water samples analyzed under the clean water act shall be analyzed in accordance with methods approved by the laboratory certification officer as required by the clean water act.

(e) Sample collection and handling. All samples collected for field laboratory analysis shall be analyzed immediately. Temperature shall be read at the sample site. If field laboratory analyses are not performed immediately, the data reported to the department for that sample shall be clearly identified as exceeding holding time.

(f) Quality assurance plan. Each certified environmental field laboratory shall implement and maintain an effective written quality assurance plan to ensure that routinely generated data are scientifically valid and defensible and are of known and acceptable precision and accuracy.

(g) Data handling.

(1) All records relating to data submitted to the department for regulatory compliance purposes shall be retained by the laboratory for at least five years. This includes any pertinent raw data, calculations, analytical quality control data, sampling data and reports.

(2) The sampling data to be retained shall include:

(A) date, time and location of sampling and analysis;

(B) person collecting the sample;

(C) name of the analyst; and

(D) type of analysis, method utilized and results. (Authorized by and implementing K.S.A. 65-1711, 65-3406, and 65-3431; effective Jan. 24, 1994.)

28-15-37. **Fees.** (a) The environmental laboratory certification fee schedule shall be as follows.

(1) There shall be an application fee of $150.00 for each type of certificate.

(2) There shall be a program review fee for any out-of-state laboratory of $75.00 for each type of certification review.

(b) The fees set forth in subsection (a) of this regulation shall be submitted with the appropriate application form provided by the Kansas department of health and environment.

(c) Upon receipt and review of the application, a statement of certification fees shall be calculated and issued to the laboratory, by the department as follows.

(1) For each type of certificate, excluding field laboratory certification, the annual fee shall be $30.00 for each individual chemical parameter and $50.00 for parametric groups to a maximum of $800.00.

(2) The fee for microbiology shall be $200.00.

(3) The fee for biomonitoring shall be $200.00.

(4) For field laboratory certification, the fee for each parameter shall be $90.00.

(d) A fee of $50.00 shall be assessed for each parameter requested as an additional analyte during the certification period. This fee shall be assessed in addition to any maximum limit.

(e) Fees shall be remitted in full prior to the issuance of the certificate. Fees shall not be refunded except in the case of overpayment. Payment of fees shall be made to the Kansas health and environmental laboratory, laboratory certification, Kansas department of health and environment, Topeka, Kansas, 66620-0001.(Authorized by and implementing K.S.A. 65-156, 65-166a; 65-1,109a; effective, E-79-14, June 23, 1978; effective May 1, 1979; amended May 1, 1986; amended Jan. 24, 1994.)

Article 16.—WATER POLLUTION CONTROL

SEWAGE DISCHARGE PERMITS

28-16-1. **Information required.** (A) Application on form furnished by the department.

(B) Plans.

(C) Specifications.

(D) Engineer's report. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

28-16-2. **Submission of information.** Plans, specifications, report and application must be submitted to the chief engineer for the board at least three weeks prior to the date on which action is desired. It is not to be inferred, however, that action will always be taken within the time mentioned. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

28-16-3. **Plans.** Plans for sewerage systems, sewer extensions and sewage treatment plants shall include:

(A) A general map of the municipality or sewer district, showing all proposed and existing streets and alleys, drawn to a scale not smaller than 300 feet to one inch, with all sewer lines, with sizes indicated, and the location of all manholes, cleanouts, and other appurtenances.

(B) The profiles of all sewers, with sizes of sewers, elevations of the sewer inverts of all manholes, and the grade of the sewers between each two adjacent manholes plainly stated. At the sewer outlet shall be shown the approximate elevation of the bottom of the stream, or ordinary low water, and of annual and extraordinary high water. Elevation of extraordinary high water shall be shown on profiles of sewers subject to flooding. Scales of profiles must be clearly stated. The following scale is suggested: vertical, 10 feet to 1 inch; horizontal, 100 feet to 1 inch.

(C) Detail drawings of manholes, cleanouts, inlets, catch basins, overflows, outlets, and all other appurtenances must accompany the application. Unless sewers are other than vitrified clay, detail drawing must be submitted.

(D) The plans for the treatment plant shall include: (1) a general layout, showing areas for future extension, embankments, various parts of plant, course of outfall sewer, outlet, stream with direction of flow, and any branches in immediate neighborhood, etc.; (2) details of longitudinal and transverse sections sufficient to make clear the construction of each unit. Details of each feature, inlet and outlet devices, baffles, valves, overflows, arrangement of automatic devices, etc., the depth and sizes of filtering media, the method of distribution and collection of sewage on the beds, and such other information as is necessary for a complete understanding of the plans.

Each drawing shall have a legible title showing the name of the town or person for whom the drawing is made, name of engineer, scale, date, and substance of drawing. (Authorized by K.S.A. 65-164, 65-165, 65-171d; effective Jan. 1, 1966.)

28-16-4. **Specifications.** Specifications for the construction of the work shall accompany all plans for new or original systems. Where plans are for extensions to systems, the specifications may be omitted, provided it is stated that work is to be

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Article 15.--APPLICATION FOR PERMITS; DOMESTIC WATER SUPPLY

28-15-50 Definitions. For the purposes of these regulations, the following words and phrases are defined as follows:

(a) ``Capacity'' means the technical, managerial, and financial ability to comply with applicable national primary drinking water standards.

(b) ``Conservation plans and practices'' means conservation plans and practices approved by either the Kansas water office or the division of water resources, Kansas department of agriculture, as consistent with guidelines developed and maintained by the Kansas water office pursuant to K.S.A. 74-2608 and amendments.

(c) ``Debt service coverage ratio'' means the sum of net income plus interest expense plus depreciation, divided by the sum of principal and interest payments for debt service.

(d) ``Department'' means the Kansas department of health and environment.

(e) ``Disadvantaged community'' means a loan applicant or the service area of a loan applicant that meets affordability criteria established by the secretary.

(f) ``Equivalency'' means that portion of the Kansas water supply loan fund that is equal to the amount of capitalization grants provided by the federal government.

(g) ``Equivalency project'' means a project that is funded from the equivalency portion of the Kansas water supply loan fund.

(h) ``Fund'' means the Kansas water supply fund established by K.S.A. 1996 Supp. 65-163e et seq., and amendments, and may consist of more than one pool of money.

(i) ``Intended use plan'' means the plan prepared according to K.S.A. 1996 Supp. 65-163h and amendments.

(j) ``Loan agreement'' means an executed contract between a loan applicant and the secretary confirming the purpose of the loan, the amount and terms of the loan, the schedule of the loan payments and requirements, and any other agreed upon conditions set forth by the secretary.

(k) ``Loan applicant'' means one of the following:

(1) any political or taxing subdivision authorized by law to construct, operate, and maintain a public water supply system, including water districts;

(2) two or more such subdivisions jointly constructing, operating, or maintaining a public water supply system; or

(3) the Kansas rural water finance authority.

(l) ``National primary drinking water standards'' means a regulation that specifies either a maximum contaminant level or a treatment technique along with associated monitoring and reporting requirements for contaminants with adverse health effects on persons.

(m) ``Project completion'' means the initiation of operation or the ability to initiate operation.

(n) ``Project'' means acquisition, construction, reconstruction, improving, equipping, rehabilitation, or extension of all or any part of a public water supply system.

(o) ``Public water supply system'' has the meaning provided by K.S.A. 65-162a and amendments.

(p) ``Secretary'' means the secretary of health and environment.

(q) ``Significant noncompliance'' means failure to comply with any national primary drinking water standard according to criteria established by the administrator of the federal environmental protection agency.

(r) ``Water transfer'' has the meaning provided by K.S.A. 1996 Supp. 82a-1501 and amendments. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-51 Fund use eligibility. (a) The fund shall be used only to provide loans to loan applicants for all or any part of the following:

(1) The acquisition, construction, reconstruction, improvement, equipping, rehabilitation, or extension of all or any part of a public water supply system;

(2) costs for project planning, design, and construction inspection, if included in the loan application; and

(3) if a construction contract has been awarded on or after August 6, 1996, refinancing the acquisition, construction, improvement, equipping, rehabilitation, or extension of all or any part of a public water supply system, including costs for project planning, design, and construction inspection. Refinancing shall be allowed only from funds provided directly or indirectly, by federal appropriations for federal fiscal year 1997.

(b) Each project eligible to receive loans shall appear on the project priority list prepared by the department. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-52 Interest rate. (a) Each loan shall bear interest for the entire life of the loan at a fixed rate set by the secretary. This fixed rate shall be calculated as described in subsection (b). Fees for servicing the loans may also be set by the secretary.

(b) The interest rate shall be calculated as a percentage, as set forth in the intended use plan, of three months' average of the ``bond buyers 20 bond index.'' The average is determined using rates published on Monday of each week of the immediately preceding three months. The loan interest rate as calculated shall include any loan service fees.

(c) The interest rate and loan servicing fee shall be the same for all loan applicants. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-53 Repayment of loans. (a) All principal and interest shall be repaid in accordance with the terms and conditions of the executed loan agreement. Repayments shall begin no later than two years after receipt of the first loan disbursement, and in no case later than one year following completion of the project. Repayment of the loan shall not exceed a 20-year repayment period as agreed upon in the loan agreement.

(b) Prepayment of the principal in whole or part may be made, in accordance with the terms and conditions of the executed loan agreement. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-54 Dedicated loan repayment source. (a) Each loan recipient shall adopt one or more dedicated sources for repayment of the loan, including principal and interest. The dedicated sources of revenue may be in the form of revenue from water sales, service charges, connection fees, special assessments, property taxes, grants, or some combination of these sources. Each dedicated source of revenue shall be legally available to the loan recipient over the life of the loan and pledged to the repayment of the loan. Each dedicated source of revenue shall be approved by the secretary.

(1) Each loan recipient with general taxing authority shall commit to using that authority, if necessary, as a condition of receiving a loan. As an alternative to pledging general tax authority, any such loan recipient may purchase bond insurance.

(2) Each loan recipient without general taxing authority shall purchase bond insurance as a condition of receiving a loan. As an alternative to purchasing bond insurance, any such loan recipient shall pledge to maintain either of the

following:
(A) A debt service coverage ratio of 140%; or
(B) a debt service coverage ratio of 125% combined with a 10% loan reserve account.
(b) Each loan recipient shall conduct an annual revenue source review during the entire life of the loan repayment obligation and, if necessary, shall implement new revenue rates as approved by the secretary. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-55 Failure to repay loan on schedule. (a) Upon failure of a loan recipient to pay one or more installments of the loan repayment on schedule, the governing body of the loan recipient shall be consulted by the secretary and may be required to undergo a financial and management operations review.
(b) The governing body shall correct any deficiencies noted during the review and adopt charges as set by the secretary, to be levied against users of the project. These charges shall remain in effect until the full amount of the loan, including principal and interest, has been repaid, unless otherwise approved by the secretary. The governing body of each loan recipient shall collect any such charges and shall forward all receipts from such charges on a schedule established by the secretary. (Authorized by K.S.A 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-56 Project eligibility. (a) No assistance from the fund shall be provided for any water transfer project, or for any portion of a project involving a water transfer. No assistance from the fund shall be provided to any loan applicant who has not adopted and implemented water conservation plans and practices.
(b) No assistance shall be provided to any loan applicant in significant noncompliance with any applicable primary drinking water regulation, unless the project will return the loan applicant to compliance.
(c) No assistance shall be provided to any loan applicant lacking capacity, unless the loan applicant agrees to undertake feasible and appropriate changes in operations, including ownership, management, accounting, rates, maintenance, consolidation, alternative sources of supply, or other procedures if the secretary determines that such changes are required to demonstrate capacity.
(d) No assistance shall be provided for projects and activities deemed ineligible for participation by the U.S. environmental protection agency. Any such projects and activities shall be listed in the intended use plan. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-57 Equivalency projects. Equivalency projects shall be required to comply with federal laws and executive orders that apply to all activities receiving federal assistance. In any given year, more projects than are necessary to equal the equivalency portion of the fund may be required to comply with equivalency project requirements, for the purpose of building an equivalency credit for future federal funds. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A 1996 Supp. 65163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-58 User charge system. Each loan applicant shall develop and, after the secretary's review and approval, adopt a rate system that shall produce adequate revenue for repayment of the loan principal and interest, and for operation and maintenance of the entire public water supply system, including depreciation. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-59 Project certification. Each loan recipient shall certify to the secretary whether or not the project meets its design requirements on the date one year after the initiation of operation of the project. The loan recipient

shall be responsible for assuring timely correction and compliance, including recertification if the initial certification concluded that the project did not meet its design requirements. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-60 Procurement. Each loan recipient shall follow state procurement laws and regulations applicable to the recipient and procedures established by the secretary. The secretary's approval is required before awarding any contract for construction. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-61 Project documents. (a) Each loan applicant shall submit the following documents for the secretary's review and approval:

(1) A completed loan application on application forms furnished by the department;

(2) an engineering report describing the need for the project, project design parameters, and an estimate of cost; and

(3) financial statements for the previous three years.

(b) Each loan recipient shall submit the following documents for the secretary's review and approval:

(1) Complete design plans, specifications, and construction bidding documents, including detailed cost estimates for competitive bidding, and projected construction and payment schedules;

(2) a plan for providing construction inspection services;

(3) a plan of operation, including an overall project completion schedule, annual operating cost projections for a minimum of five years, a description of the financial management system, and projected revenues to operate and maintain the public water supply system. Revenue projections shall also include the loan repayment obligations; and (4) an operations manual, which shall be submitted before 90% of the project is completed. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-62 Financial capability. As part of the loan application, the loan applicant shall demonstrate and certify to the secretary that the applicant has the financial capability to repay the loan and to cover the costs of operation and maintenance of the entire public water supply system of which the proposed project is an integral part. This financial assessment shall cover the life of the loan obligation and consider, at a minimum, changes in economic and population growth, depreciation, existing debt obligations, revenues, project costs, and effects on user charge rates. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-613e through 65-163u; effective Oct. 10, 1997.)

28-15-63 Public participation. (a) Each loan applicant shall conduct a minimum of one public hearing before execution of the loan agreement, to discuss the proposed project and receive input on alternatives. Notice of the public hearing shall be provided to the department and shall be published in one or more newspapers, as needed to cover the project service area, at least 30 calendar days before the public hearing.

(b) A record of the public hearing and proof of publication shall be submitted prior to execution of the loan agreement.

(c) The 30-day public notice requirement may be waived by the secretary for any project deemed an emergency. (Authorized by K.S.A 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-64 Environmental review. (a) The ``Environmental review procedure for Kansas public water supply loan fund,'' dated July 1997, is adopted by reference as the required environmental review procedure for an equivalency project.

(b) For an equivalency project, 40 CFR 6.508(a), 6.511(b), and 6.512, as in effect on July 1, 1996, are hereby adopted by reference.
(c) Those members of the public who participated in the environmental review process shall have the right to appeal the decisions made within that process. All such appeals shall be conducted pursuant to the Kansas administrative procedure act and the act for judicial review set forth in K.S.A. 77-501 et seq. and 77-601 et seq., respectively.
(d) When used in any provision adopted from 40 CFR Part 6, references to ``EPA'' shall be replaced with the ``Kansas department of health and environment''; ``grant'' shall be replaced with ``loan agreement''; ``grantee'' shall be replaced with ``applicant.'' (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 65-163e through 65-163u; effective Oct. 10, 1997.)

28-15-65 Project accounts. Each loan recipient shall maintain project accounts in accordance with generally accepted government accounting standards as defined in the 1994 edition of the ``governmental accounting, auditing, and financial reporting'' manual issued by the government finance officers association. (Authorized by K.S.A. 1996 Supp. 65-163f; implementing K.S.A. 1996 Supp. 65-163d, as amended by 1997 S.B. 40, sec. 1, and K.S.A. 1996 Supp. 65-163e through 65-163u; effective Oct. 10, 1997.)