Proposed

**Department of Agriculture, Division of Water Resources**
**Notice of Hearing on Proposed**
**Administrative Regulations**

A public hearing will be conducted at 10:00 a.m., Monday, January 11, 2016, in room 124 of the Kansas Department of Agriculture, 1320 Research Park Dr., Manhattan, Kansas, to consider the adoption of proposed regulations.

Individuals wishing to participate by teleconference may go to the DWR Stafford Field Office, 300 S. Main Street, Stafford, Kansas on the date and time of the public hearing.

This 60-day notice of the public hearing shall constitute a public comment period for the purpose of receiving written public comments on the proposed rules and regulations. All interested parties may submit written comments prior to the hearing to the Secretary of Agriculture, 1320 Research Park Dr., Manhattan, Kansas, 66502, or by e-mail at ronda.hutton@kda.ks.gov, or through the agency's website. All interested parties will be given a reasonable opportunity to present their views orally on the adoption of the proposed regulations during the hearing. In order to give all parties an opportunity to present their views, it may be necessary to request that each participant limit any oral presentation to five minutes. These regulations are proposed for adoption on a permanent basis. A summary of the proposed regulations and their economic impact follows:

K.A.R. 5-12-1 relates to the storage of water in an aquifer storage and recovery system for the purposes of artificial recharge. As described in K.A.R. 5-12-1 each applicant for a permit to appropriate water for artificial recharge shall define the horizontal and vertical extent of the basin storage area. The proposed changes to K.A.R. 5-12-1 would allow the minimum water level to be defined by the bedrock elevation as opposed to the current definition of the water level that occurred within 10 years prior to the application filing or longer period if demonstrated by the applicant to reflect the lowest water level.

K.A.R. 5-1-1 is amended to add definitions as used in K.A.R. 5-12-1.

K.A.R. 5-25-21 is proposed by the Big Bend Groundwater Management District No. 5. The proposed rule will allow an additional method to calculate the amount of water which may be deposited in a multiyear flex account (MYFA). The proposed method will allow five (5) times 90% of the annual authorized quantity to be enrolled into a MYFA, or 450% of the base water right's authorized quantity, to be enrolled into a MYFA. To qualify for this method, the applicant must agree to remove the end gun from the irrigation system that will be authorized by the MYFA.

K.A.R. 5-22-7 will modify recharge rates to be used in safe yield calculations in two areas of concern in the Equus Beds Groundwater Management District No. 2.

Summary of Economic Impact Statement, K.A.R. 5-1-1 and 5-12-1:

The regulation change was requested by the City of Wichita. The City has developed and is in the process of implementing an aquifer storage and recovery project in the Equus Beds Aquifer. A primary purpose of the initial phase of the storage recovery project was to develop a freshwater barrier to the salt water contamination moving towards the wellfield from the Burrton Area. Under existing regulations, the bottom extent of the basin storage area is defined by the calculated levels of storage in 1993. The principle purpose of subsequent ASR phases has been to provide for additional long-term supply for the City.

Prior to 1993 and in the years since, the City of Wichita has increased the use of surface water from Cheney Reservoir and decreased the use of Equus Beds groundwater resources. As a result, water levels within the Wichita well field have partially recovered.

Examination of the USGS storage data indicates that during the recent drought, a pattern of decline is emerging in areas of the Equus Beds Aquifer. While the City has not increased its usage from the aquifer and does not use all of its available water appropriations, water levels have declined significantly during the recent drought through reduced recharge and increased use within the basin storage area. This pattern indicates water levels in the basin storage area for the aquifer storage and recovery project are not solely dependent on the amount of water that the City utilizes. The City is concerned that during future, critical dry periods, water levels may fall below 1993 levels and the City would be prevented from recovering ASR credits.

The City has requested the revision to allow for withdrawal of recharge credits when they are available and remove the restrictions limiting recharge credit withdrawal when levels are above the 1993 index water level. This change

will allow the City to operate the aquifer storage and recovery project as intended.

The regulation, while requested by the City of Wichita, will be applied statewide. The regulation is not mandated by federal law. There will be minimal costs associated with revising permit conditions. There will be no costs to other governmental agencies or private businesses or individuals. No significant impacts (neither beneficial nor degrading) could be identified as resulting should the proposed changes be adopted. The storage capacity of the basin storage will not change under the request, only the ability to recover recharge credits when they are available as determined by the aquifer storage project accounting and Kansas Department of Agriculture accounting.

Summary of Economic Impact Statement, K.A.R. 5-25-21:

KSA 82a-736 (D) (iii) allows a method for a GMD to determine a method for calculating the authorized quantity for a MYFA in an amount that shall not increase the long-term average use of the groundwater right as specified by rule and regulation. The board of directors of GMD 5 has determined that a reduction in actual water use would occur if the end gun is removed even with 450% of the base water right's authorized quantity available to divert.

The initial interest in the MYFA program was due to the severe drought in 2011-2012. The law was changed providing a more flexible MYFA for our producers. DWR processed approximately 750 MYFAs at that time. Increases in MYFA applications and the increase in commitment of staff resources are more significantly driven by drought conditions. Therefore, while this regulation change may increase interest within GMD 5, it is not likely to match any increase anticipated as a result of drought conditions.

The regulation is not mandated by federal law. There may be a positive economic impact to the water users that remove their end gun due to a reduction in pumping costs by making a more efficient use of the water they are diverting. There may be a positive impact on the local water resource conditions due to the removal of end guns.

Summary of Economic Impact Statement, K.A.R. 5-22-7:

The proposed amendment will limit the safe yield by reducing the current recharge rate from 6 inches to 2 and 3 inches in areas of concern and well spacing, which will help ensure existing water rights in the area will not be impaired due to any new development, including changes to existing water rights in two areas of concern within GMD 2. These areas near Pretty Prairie and Partridge have indications of groundwater decline and poor water quality. These amendments limit new development.

This regulation is not mandated by federal law. The proposed amendment will result in no fiscal impact to the Kansas Department of Agriculture. The proposed amendments will result in no fiscal impact to GMD 2. The amendment will have a positive fiscal impact to existing water rights in the areas of concern due to the protection against impairment by new development. Improved groundwater resource conditions, both quality and quantity, could be achieved through the adoption of this regulation change.

Any individual with a disability may request accommodations in order to participate in the public hearing and may request the proposed regulations and impact statements in an accessible format. Requests for accommodations should be made at least five working days in advance of the hearing by contacting Ronda Hutton at (785) 564-6715 or fax (785) 564-6777. Handicapped parking is located on the west side of the building located at 1320 Research Park Drive, Manhattan, and the west entrance to the building is accessible to individuals with disabilities.

Copies of the regulations and their economic impact statements may be obtained by contacting the Department of Agriculture, Ronda M. Hutton, 1320 Research Park Drive, Manhattan, KS 66502 or (785) 564-6715 or by accessing the department's Web site at agriculture.ks.gov. Comments may also be made through our website under the proposed regulation.

David W. Barfield
Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

**K.A.R. 5-1-1. Definitions.** As used in these regulations and the Kansas water appropriation act, and by the division of water resources in the administration of the Kansas water appropriation act, unless the context clearly requires otherwise, each of the following ~~words and phrases~~ terms shall have the ~~meanings~~ meaning specified in this regulation. :

(a) "Above-baseflow stage" means streamflow that is in response to a significant runoff event during which period the water level elevation of the stream is greater than the elevation of the adjacent water table.

(b) "Acceptable quality surface water" means surface water that will not degrade the quality of the groundwater source into which ~~it~~ the surface water is discharged.

(c) "Application" means the formal document submitted on the form prescribed by the chief engineer for a permit to appropriate water for beneficial use and filed in the office of the chief engineer ~~as provided by~~ pursuant to K.S.A. 82a-708a and 82a-709, and amendments thereto.

(d) "Approval of application" means a permit to proceed with construction of diversion works and the diversion and use of water in accordance with the terms and conditions ~~set forth~~ specified in the permit. Approval of application shall not constitute any permit that may be required by other state laws.

(e) "Aquifer storage" means the act of storing water in ~~the unsaturated portion of~~ an aquifer by artificial recharge for subsequent diversion and beneficial use.

(f) "Aquifer storage and recovery system" means the physical infrastructure that meets the following conditions:

(1) Is constructed and operated for artificial recharge, storage, and recovery of source water; and

(2) consists of apparatus for diversion, treatment, recharge, storage, extraction, and distribution.

(g) "Artificial recharge" means the use of source water to artificially replenish the water supply in an aquifer.

(h) "Authorized representative" means any staff employee designated by the chief engineer to perform duties and functions on behalf of the chief engineer.

(i) "Bank storage" means water absorbed by and temporarily stored in the banks and bed of a stream during above-baseflow stage.

(j) "Bank storage well" means a well used to divert or withdraw water from bank storage.

(k) "Basin storage area" means the portion of the ~~aquifer's unsaturated zone~~ aquifer used for aquifer storage that has defined horizontal boundaries and is delimited by ~~the highest and lowest~~ a maximum index ~~water~~ level ~~elevations~~ and a minimum index level.

(l) "Basin storage loss" means that portion of artificial recharge naturally flowing or discharging from the basin storage area.

(m) "Basin term permit" means a term permit to appropriate surface water from a stream within a specific drainage basin, or a portion of it, for a reasonable quantity of water, not to exceed a maximum of 100 acre-feet per calendar year, for use in either of the following:

(1) Drilling oil and gas wells; or

(2) construction projects within the specified basin.

(n) "Battery of wells" means two or more wells connected to a common pump by a manifold, or not more than four wells in the same local source of supply within a 300-foot-radius circle that are being operated by pumps not to exceed a total maximum rate of diversion of 800 gallons per minute and that supply water to a common distribution system.

(o) "Beneficial uses of water" are the following:

(1) Domestic uses;

(2) stockwatering;

(3) municipal uses;

(4) irrigation;

(5) industrial uses;

(6) recreational uses;

(7) waterpower;

(8) artificial recharge;

(9) hydraulic dredging;

(10) contamination remediation;

(11) dewatering;

(12) fire protection;

(13) thermal exchange; and

(14) sediment control in a reservoir.

(p) "Complete and accurate water use report" means a water use report that the water right owner has filed pursuant to K.S.A. 82a-732, and amendments thereto, that provided all of the information required on the form prescribed by the chief engineer, including the following:

(1) The quantity of water diverted during the calendar year;

(2) if the diversion of water was required to be metered during the calendar year for which the report is being filed, the information required by K.A.R. 5-3-5e;

(3) if the water was used for irrigation purposes, the number of acres that were irrigated; and

(4) if the water was diverted from a sand and gravel pit operation, the size of the surface area of the pit in acres at the end of the calendar year for which the report was filed.

(q) "Completed substantially as shown on aerial photograph, topographic map, or plat," as used to define the authorized point of diversion, means within 300 feet of the location as shown on the aerial photograph, topographic map, or plat accompanying the application.

(r) "Confined Dakota aquifer system" means that portion of the Dakota aquifer system overlain by a confining layer resulting in the aquifer normally being under greater than atmospheric pressure.

(s) "Conjunctive use" means the safe-yield management and operation of an aquifer in coordination with a surface water system to enhance the use of the total water supply availability in accordance with the provisions of the water appropriation act.

(t) "Contamination remediation" means the diversion of water by a state agency, or under a written agreement or order of an appropriate state agency, for the purpose of improving the water quality.

(u) "Dakota aquifer system" shall include the Dakota formation, the Kiowa formation, the Cheyenne sandstone, and, where hydraulically connected, the Morrison formation.

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(v) "Dakota aquifer system well" means a well or proposed well screened in whole or in part in the Dakota aquifer system.

(w) "Dam" means any artificial barrier, together with all appurtenant works, that does or could impound water.

(x) "Dewatering" means the removal of surface water or groundwater to achieve either of the following:

(1) Facilitate the construction of a building, pipeline, or other facility; or

(2) protect a building, levee, mining activity, or other facility.

(y) "Direct diversion of surface water" means the diversion of surface water directly from a stream by means of a pump, headgate, siphon, or similar installation, for application to beneficial use without storing it behind a dam, levee, or similar type of structure.

(z) "Diversion" means the act of bringing water under control by means of a well, pump, dam, or other device for delivery and distribution for the proposed use.

(aa) "Diversion works" means any well, pump, power unit, power source, dam, and any other devices necessary to bring water under control for delivery to a distribution system by which the water will be distributed to the proposed use and any other equipment required as a condition of the permit, including a check valve, water level measurement tube, meter, or other measuring device.

(bb) "Division" means the division of water resources of the Kansas department of agriculture.

(cc) "Dry hydrant" means a permanent, unpressurized intake pipe used to remove water from a pond, stream, reservoir, or other surface water supply by means of suction or vacuum supplied by a fire truck or other portable pumping device.

(dd) "Field inspection" means that for the purpose of issuing a certificate of appropriation pursuant to K.S.A. 82a-714 and amendments thereto, the chief engineer conducts a test of the rate of diversion of the diversion works under the normal and maximum conditions that the diversion works actually applied water to beneficial use during the perfection period. The chief engineer also collects all other information necessary to prepare a certificate, including the following:

(1) A description of the location and size of the place where water was actually applied to beneficial use during the perfection period in accordance with the terms, conditions, and limitations of the approval of application;

(2) information on the quantity and rate of water that was applied to the authorized use during the perfection period; and

(3) the actual location of the point or points of diversion from which water was diverted in accordance with the terms, conditions, and limitations of the approval of application.

(ee) "Fire protection" means the use of water for fire protection by a fire department for public protection in general.

(ff) "Fish farming" means the controlled cultivation and harvest of aquatic animals.

(gg) "Flow-straightening vanes" means vanes, or any other ~~device~~ devices installed at the upstream throat of a measuring chamber for the purpose of aligning all velocity components of flow parallel with the flow in the measuring chamber at the water flowmeter sensor location.

(hh) "Full irrigation" means the application of water to crops during the growing season. Full irrigation shall include water for preirrigation.

(ii) "Groundwater" means water below the surface of the earth.

(jj) "Growing season" means the average frost-free period of the year.

(kk) "Household purposes" means the use of water by a person for cooking, cleaning, washing, bathing, human consumption, rest room facilities, fire protection, and other uses normally associated with the operation of a household.

(1) "Fire protection" shall be considered to be use of water for "household purposes" if either of the following conditions is met:

(A) Water is available from a "dry hydrant" that has been installed on a pond located within 1,000 feet of the residence.

(B) Water can be pumped from a well located within 1,000 feet of the residence for fire protection.

(2) Household purposes shall also include the replacement of the potential net evaporation from a domestic pond of up to 1/2 acre in surface area if both of the following conditions are met:

(A) The pond is utilized for aesthetic purposes as an integral part of the landscaping of a house.

(B) Any portion of the pond is located within 300 feet of the closest edge of the house.

(3) The maximum reasonable annual quantity of groundwater that may be pumped into a pond to be withdrawn later for domestic fire protection shall not exceed 0.06 acre-feet plus the

average annual potential net evaporation for a pond at that location in the state having a surface area of 0.2 of an acre.

(4) Household purposes shall also include the use of 1 1/2 acre-feet of water or less per calendar year by an industrial user, restaurant, hotel, motel, church, camp, correctional facility, educational institution, or similar entity for household purposes.

(ll) "Hydraulic dredging" means the removal of saturated aggregate from a stream channel, pit, or quarry by means of hydraulic suction and the pumping of the aggregate and water mixture as a slurry to a location where at least 95% percent of the water returns directly to the source of supply.

(mm) "Immediate vicinity," as used in specifying the place of use for a water right in which the water is authorized to be used for municipal purposes, means within 2,640 feet of the corporate limits of the municipality, rural water district, or other entity.

(nn) "In compliance" means that a water flowmeter does not meet any of the criteria of K.A.R. 5-1-9 for being out of compliance.

(oo) "Index ~~water~~ level" means ~~water level~~ elevations established spatially throughout a basin storage area to be used to represent the maximum volume of a basin storage area, and storage available for recovery based upon accounting methodology, and conditions of the permit.

(pp) "Indirect use" means the total of the seepage loss and the average annual potential net evaporation loss from the surface of water originally impounded in a reservoir for beneficial use.

(qq) "Industrial use" means the use of water in connection with the manufacture, production, transport, or storage of products, or the use of water in connection with providing

commercial services, including water used in connection with steam electric power plants, greenhouses, fish farms, poultry operations that are not incidental to the operation of a traditional farmstead pursuant to K.S.A. 82a-701(c) and amendments thereto, secondary and tertiary oil recovery, air conditioning, heat pumps, equipment cooling, and all uses of water associated with the removal of aggregate for commercial purposes except the following:

(1) The evaporation caused by exposing the groundwater table or increasing the surface area of a stream, lake, pit, or quarry by excavation or dredging, unless the evaporation has a substantially adverse impact on the area groundwater supply; and

(2) hydraulic dredging.

(rr) "Irrigation use" means the use of water for the following:

(1) The growing of crops;

(2) the watering of gardens, orchards, and lawns exceeding two acres in area; and

(3) the watering of golf courses, parks, cemeteries, athletic fields, racetrack grounds, and similar facilities.

(ss) "Maximum index level" means the maximum elevation for storage within a basin storage area or, if the basin storage area is subdivided, a smaller subdivided area.

(tt) "Measuring chamber" means a cylindrical chamber in which a water flowmeter is installed that is calibrated to match the measuring element of the water flowmeter and the nominal size of the pipe in which it is installed.

(uu) "Minimum index level" means the lowest bedrock elevation or an alternatively proposed minimum elevation for storage within a basin storage area or, if the basin storage area is subdivided, a smaller subdivided area.

~~(tt)~~ (vv) "Municipal use" means the various uses made of water delivered through a common distribution system operated by any of the following:

(1) A municipality;

(2) a rural water district;

(3) a water district;

(4) a public wholesale water supply district;

(5) any person or entity serving 10 or more hookups for residences or mobile homes; or

(6) any other similar entity distributing water to other water users for various purposes.

Municipal use shall also include the use of water by restaurants, hotels, motels, churches, camps, correctional facilities, educational institutions, and similar entities using water that does not qualify as a domestic use.

~~(uu)~~ (ww) "Nonvolatile memory" means the ability of a water flowmeter to retain the values stored in the mechanical or electronic memory if all power, including backup battery power, is removed.

~~(vv)~~ (xx) "Normal operating range" means the range of flow rates for which the water flowmeter will meet the accuracy requirements of K.A.R. 5-1-4 (a), as certified by the water flowmeter manufacturer.

~~(ww)~~ (yy) "Off-season irrigation" means the application of water to land for the purpose of storing moisture in the soil for future use by a crop that will not be irrigated during the growing season.

~~(xx)~~ (zz) "Operator," as used in the regulation of sand and gravel pits, means any person who engages in mining sand or gravel, or both.

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~~(yy)~~ (aaa) "Perennial stream" means a stream, or part of a stream, that normally flows during all of the calendar year, except during a drought.

~~(zz)~~ (bbb) "Perfect" means the actions taken by a water user to develop an approval of application into a water right. These actions shall consist of the completion of the diversion works and the actual application of water to the authorized beneficial use in accordance with the terms, conditions, and limitations of the approval of application.

~~(aaa)~~ (ccc) "Point of diversion" means the point at which water is diverted or withdrawn from a source of water supply.

~~(bbb)~~ (ddd) "Point of diversion of a dewatering site" means the geographic center of the area from which water is temporarily removed to lower the static water level or streamflow to allow one construction project or one excavation to take place. Each one-quarter linear mile of construction trench, or part thereof, shall have at least one point of diversion.

~~(eee)~~ (eee) "Point of diversion of a remediation site" means the geographic center of the area from which water is being removed to be treated or injected into a single disposal well.

~~(ddd)~~ (fff) "Point of diversion for storage of surface water in a reservoir created by a dam" means the point at which the longitudinal axis of the dam crosses the centerline of the stream impounded by the reservoir.

~~(eee)~~ (ggg) "Potential annual runoff" means the mean annual runoff for the watershed of the reservoir.

~~(fff)~~ (hhh) "Preirrigation" means the application of water to the land for a crop before planting to ensure adequate moisture for early plant growth.

~~(ggg)~~ (iii) "Primary well" means a well for which a standby well is available.

~~(hhh)~~ (jjj) "Prior right" means a vested right, an appropriation right with earlier priority, or a permit with earlier priority than that of a subsequent appropriation right or permit.

~~(iii)~~ (kkk) "Proven reserves" means extractable sand and gravel deposits for which good estimates of the quantity and quality have been made by various means, including core drilling.

~~(jjj)~~ (lll) "Recharge" means the natural infiltration of surface water or rainfall into an aquifer from its catchment area.

~~(kkk)~~ (mmm) "Recharge credit" means the quantity of water that is stored in the basin storage area and that is available for subsequent appropriation for beneficial use by the operator of the aquifer storage and recovery system.

~~(lll)~~ (nnn) "Recreation storage" means the storage and use of water within the reservoir for recreational use as defined in this regulation. Water stored for ~~recreation~~ recreational use in a reservoir shall be considered to be an indirect use of water.

~~(mmm)~~ (ooo) "Recreational use" means a use of water in accordance with a water right that provides entertainment, enjoyment, relaxation, and fish and wildlife benefits.

~~(nnn)~~ (ppp) "Rediversion of water" means releasing or withdrawing water that had been previously impounded behind a dam, levee, or similar type of structure, by use of a pump, outlet tube, headgate, or similar type of device, and the application of the water directly to beneficial use.

~~(ooo)~~ (qqq) "Register" means an integral or remote device that displays the quantity of water passing the water flowmeter sensor and is part of the water flowmeter.

~~(ppp)~~ (rrr) "Remediation site" means the geographic area where contamination is being removed from groundwater.

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~~(qqq)~~ (sss) "Reservoir" means the area upstream from a dam that contains, or will contain, impounded water.

~~(rrr)~~ (ttt) "Reservoir capacity" means the volume of water that can be stored below the lower of either of the following:

(1) The elevation of the principal spillway tube; or

(2) the lowest uncontrolled spillway in the reservoir.

~~(sss)~~ (uuu) "Reservoir having a total water volume of less than 15 acre-feet," as used in K.S.A. 82a-728 and amendments thereto, means a reservoir having a capacity of 15 acre-feet or less as measured at the principal spillway tube or the lowest uncontrolled spillway, whichever is lower.

~~(ttt)~~ (vvv) "Safe yield" means the long-term sustainable yield of the source of supply, including hydraulically connected surface water or groundwater.

~~(uuu)~~ (www) "Sand and gravel pit operation" means a project that meets the following conditions:

(1) Excavates overburden for mining sand or gravel, or both, exposing the underlying groundwater table to evaporation; and

(2) has a perimeter equal to or greater than its depth.

~~(vvv)~~ (xxx) "Sediment control in a reservoir" means a beneficial use of water that meets both of the following criteria:

(1) The water is stored in a reservoir that has no other authorized type of beneficial use, except domestic use.

(2) The water is stored only in the part of the reservoir designed and constructed for the storage of sediment.

~~(wwww)~~ (yyy) "Source water" means water used for artificial recharge that meets the following conditions:

(1) Is available for appropriation for beneficial use;

(2) is above base-flow stage in the stream;

(3) is not needed to satisfy minimum desirable streamflow requirements; and

(4) will not degrade the ambient groundwater quality in the basin storage area.

~~(xxx)~~ (zzz) "Specialty crop" means a crop other than a normal Kansas field crop. This term shall include turf grass, trees, vegetables, ornamentals, and other similar crops.

~~(yyy)~~ (aaaa) "Standby well" means a well that can withdraw water from the same source of supply as the primary well and that is used only when water is temporarily unavailable from the primary well or wells authorized to be used on the same place of use because of mechanical failure, maintenance, or power failure. A standby well may also be used for fire protection or a similar type of emergency.

~~(zzz)~~ (bbbb) "Static water level" means the depth below land surface at which the top of the groundwater is found when not affected by recent pumping.

~~(aaaa)~~ (cccc)(1) "Stockwatering" means the watering of livestock and other uses of water directly related to either of the following:

(A) The operation of a feedlot with the capacity to confine 1,000 or more head of cattle; or

(B) any other confined livestock operation or dairy that would divert 15 or more acre-feet of water per calendar year.

(2) Stockwatering shall not include the irrigation of feed grains or other crops.

(3) For the purposes of this subsection, a group of feedlots or other confined feeding operations shall be considered to be one feedlot or confined feeding operation if both of these conditions are met:

(A) There are common feeding or other physical facilities.

(B) The group of facilities is under common management.

~~(bbbb)~~ (dddd) "Straight pipe" means a straight length of pipe free of all internal obstructions, including size changes, valves, cooling coils, injection ports, sand or foreign material, and any other condition that would cause a disturbance of the internal velocity profile in the pipe. Internal obstructions shall not include properly designed, constructed, and installed straightening vanes and inspection ports.

~~(cccc)~~ (eeee) "Stream channel aquifer" means unconsolidated water-bearing deposits in river valleys, flood plains, and terraces that are separate and distinct from any other aquifer and capable of yielding water in sufficient quantities for beneficial use.

~~(dddd)~~ (ffff) "Surface water" means water in creeks, rivers, or other watercourses, and in reservoirs, lakes, and ponds.

~~(eeee)~~ (gggg) "Term permit" means a permit to appropriate water that is issued for a specified period of time and exceeds the criteria for a temporary permit specified in K.S.A. 82a-727, and amendments thereto, and K.A.R. 5-9-3 through K.A.R. 5-9-5. At the end of the

specified time, or any authorized extension approved by the chief engineer, the term permit shall be automatically dismissed, and any priority it may have had shall be forfeited.

~~(ffff)~~ (hhhh) "The production and return of saltwater in connection with the operation of oil and gas wells in accordance with the written approval granted therefor by the Kansas corporation commission pursuant to K.S.A. 55-901, and amendments thereto" means only that saltwater actually produced during the primary production of oil and gas wells and shall not include the following:

(1) Saltwater used in the drilling of an oil and gas well; and

(2) saltwater injected into an enhanced recovery injection well, unless that saltwater was produced in the primary production of the oil and gas well, separated from the oil and gas, and then subsequently reinjected.

~~(gggg)~~ (iiii) "Thermal exchange" means the use of water for climate control in a nondomestic building and in a manner that is essentially nonconsumptive to the source of supply.

~~(hhhh)~~ (jjjj) "Totalizer" means the mechanical or electronic portion of the register that displays the total quantity of water that has passed the water flowmeter sensor.

~~(iiii)~~ (kkkk) "Unconfined Dakota aquifer system" means that portion of the Dakota aquifer system not overlain by a confining layer in which the aquifer is in equilibrium with atmospheric pressure.

~~(jjjj)~~ (llll) "Unconsolidated regional aquifer" means a body of mostly unconsolidated and heterogeneous water-bearing deposits that are hydraulically and geologically contiguous~~,~~ and are capable of yielding water in sufficient quantities for beneficial use.

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~~(kkkk)~~ (mmmm) "Waste of water" means any act or omission that causes any of the following:

(1) The diversion or withdrawal of water from a source of supply that is not used or reapplied to a beneficial use on or in connection with the place of use authorized by a vested right, an appropriation right, or an approval of application for a permit to appropriate water for beneficial use;

(2) the unreasonable deterioration of the quality of water in any source of supply, thereby causing impairment of a person's right to the use of water;

(3) the escaping and draining of water intended for irrigation use from the authorized place of use; or

(4) the application of water to an authorized beneficial use in excess of the needs for this use.

~~(llll)~~ (nnnn) "Waterpower use" means the use of falling water for hydroelectric or hydromechanical power.

~~(mmmmm)~~ (oooo) "Water balance" means the method of determining the amount of water in storage in a basin storage area by accounting for inflow to, outflow from, and changes in storage in that basin storage area.

~~(nnnn)~~ (pppp) "Water flowmeter" means the combination of a flow-sensing device, measuring chamber, integral or remote display device or register, and any connecting parts required to make a working assemblage to measure, record, and allow determination of flow rate and total quantity of water flowing past the water flowmeter sensor.

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~~(oooo)~~ (qqqq) "Water storage device" means a reservoir, elevated water tank, pressurized water tank, including a bladder tank, or other container into which water is pumped and stored before beneficial use.

~~(pppp)~~ (rrrr) "Water use correspondent" means a person designated in writing, on a form prescribed by the chief engineer, by one of the owners of a water right to file the water use reports required by K.S.A. 82a-732 and amendments thereto, on behalf of the owner or owners of that water right. (Authorized by and implementing K.S.A. 82a-706a; modified, L. 1978, ch. 460, May 1, 1978; amended May 1, 1980; amended May 1, 1981; amended May 1, 1983; amended May 1, 1986; amended Dec. 3, 1990; amended May 31, 1994; amended Sept. 22, 2000; amended Oct. 24, 2003; amended Oct. 31, 2008; amended P-_____.)

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**K.A.R. 5-12-1. Aquifer storage and recovery permitting.** (a) An operator may store water in an aquifer storage and recovery system under a permit to appropriate water for artificial recharge if the water appropriated is source water. The requirements of this article ~~12 of the rules and regulations adopted by the Kansas department of agriculture, division of water resources are~~ shall be in addition to any requirements of the Kansas department of health and environment concerning underground injection wells, including article 46 of the ~~rules and~~ regulations adopted by the Kansas department of health and environment.

(b) Each application for a permit to appropriate water for artificial recharge shall describe the horizontal and vertical extent of the basin storage area in which the source water will be stored.

(1) The horizontal extent shall be determined by a closed boundary within which the recharge system used to store the water will be physically located. The recharge system may include recharge pits, recharge trenches, recharge wells, or other similar systems that cause source water to enter the storage volume of the basin storage area, either by gravity flow or by injection. The basin storage area may be subdivided into smaller areas representative of the areas that may be recharged by the individual recharge systems.

(2) The vertical extent shall be defined by a minimum index level and a maximum index ~~water~~ level for the basin recharge storage area, or for each subdivided area within the basin storage area if the basin storage area is subdivided. ~~The minimum index water level shall be the lowest water level within the basin storage area, or smaller subdivided area if the basin storage area is subdivided, that occurred within the 10 years before the filing of the application for a permit to appropriate water, or a period of time longer than 10 years demonstrated by the~~

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~~applicant to reflect the lowest water level. If the basin storage area is subdivided, measurements from the same year shall be used to determine the minimum index water level for each subdivision.~~ The maximum index water level shall represent the maximum storage potential for the basin storage area.

(c) ~~An~~ Each application for a permit to appropriate water for artificial recharge shall ~~set forth~~ specify the maximum annual quantity and maximum rate of diversion of source water.

(d)(1) Each application for a permit to appropriate water for artificial recharge shall include a methodology for accounting for water stored in a basin storage area both on an annual basis and on a cumulative basis so that recharge credits can be calculated. If more than one application for a permit to appropriate water for artificial recharge relates to the same aquifer storage and recovery system, each application shall use the same methodology for accounting for water stored in the basin storage area. The accounting of the water balance of all water entering and leaving the basin storage area shall be determined by using sound engineering methods based on actual measurements, generally accepted engineering methodology, or a combination of both.

(2) Approval of any application for a permit to appropriate water for artificial recharge shall be contingent upon the chief engineer's approval of the method for accounting for the basin storage area.

(e) ~~An~~ Each applicant for recovery of water stored by the holder of a permit to appropriate water for artificial recharge to store water in a basin storage area shall obtain a permit separate from the aquifer storage permit to appropriate water for beneficial use for each well used to recover the water stored. The maximum annual quantity of water that may be

Proposed

appropriated for this purpose shall be no more than the maximum cumulative recharge credits available to the operator of the aquifer storage and recovery system. These credits shall be determined by the accounting methodology approved under a permit to appropriate water for artificial recharge pertaining to the aquifer storage and recovery system. In determining whether diversion of the annual quantity impairs other water rights, the following data may be considered by the chief engineer:

(1) The maximum storage volume available in the basin storage area;

(2) the spatial distribution of recharge and withdrawal systems;

(3) the maximum rate of diversion at which the water will be withdrawn; and

(4) any other relevant information.

Recharge credits may be accumulated over more than one year, and any amount of recharge credits available may be withdrawn in accordance with the permit if the withdrawal does not impair other water rights.

(f) The approval of application, if the water to be diverted is the water artificially recharged into the basin storage area, shall be conditioned upon the following:

(1) Generally accepted engineering methodology;

(2) a maximum annual quantity that does not exceed the recharge credits; and

(3) an annual reporting that complies with K.A.R. 5-12-2. (Authorized by K.S.A. 82a-706a; implementing K.S.A. ~~1999~~ 2015 Supp. 82a-711 and K.S.A. 82a-712; effective Sept. 22, 2000; amended P-_____.)

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**K.A.R. 5-22-7. Safe yield.** (a) Except as specified in subsection (b), the approval of each application for a change in the point of diversion, term permit, and permit to appropriate water for beneficial use shall be subject to the following requirements:

(1) The sum of prior appropriations shall include all of the following:

(A) The proposed application;

(B) vested rights;

(C) appropriation rights;

(D) term permits;

(E) earlier priority applications; and

(F) baseflow nodes.

The sum of prior appropriations shall not exceed the allowable safe-yield amount for the area of consideration. The non-consumptive use of groundwater previously authorized by the chief engineer shall be excluded from the sum of prior appropriations.

(2) The quantity authorized on all prior permits, certificates, and vested rights, the quantity requested on prior applications, and the quantities allocated to baseflow nodes shall be used to calculate the sum of prior appropriations and baseflow allocations.

(3) All conditions and limitation clauses listed on all prior appropriations and applications in the area of consideration shall be considered in effect.

(4) The baseflow allocation for baseflow nodes shall be calculated using the formula Qa = T/N where:

(A) Qa is the baseflow allocation per baseflow node in acre-feet per year;

(B) T is the total baseflow allocation for a reach of a stream in acre-feet per calendar year. T is the average of the 12 calendar months' daily flow values in cubic feet per second that were equaled or exceeded 90 percent of the time during a specifically designated hydrologically significant period of record, times a factor of 724; and

(C) N is the number of baseflow nodes established on a stream or reach of a stream. Nodes are located at the upstream end of the watercourse reach and thereafter at the intersection of the channel of a watercourse and an arc of a 1,320-foot-radius circle whose center is located on the previously established baseflow node.

(5) The allowable safe-yield amount shall be calculated using the formula S = A x K where:

(A) S is the allowable safe-yield amount in acre-feet per year;

(B) A is the area of consideration; and

(C) K is an aquifer recharge value in feet. Everywhere in the district, except in McPherson county and the well spacing areas specified in K.A.R. 5-22-2(d)(1), K is equal to 0.5 feet per year. In McPherson county, K is a constant equaling 0.25 feet per year. In the well spacing areas specified in K.A.R. 5-22-2(d)(1) and located south of the centerline of the North Fork Ninnescah river, K is equal to 0.25 feet per year. In the well spacing areas specified in K.A.R. 5-22-2(d)(1) and located north of the centerline of the North Fork Ninnescah river, K is equal to 0.1667 feet per year.

K is calculated by multiplying the recharge percentage~~, which is 10 percent in McPherson county and 20 percent for the rest of the district,~~ times the average annual precipitation of 2.5 feet per year. The recharge percentage is 10 percent in McPherson county and the well spacing

areas specified in K.A.R. 5-22-2(d)(1) and located south of the centerline of the North Fork Ninnescah river, 6.667 percent in the well spacing areas specified in K.A.R. 5-22-2(d)(1) and located north of the centerline of the North Fork Ninnescah river, and 20 percent for the rest of the district.

(6) When evaluating an application for a change in the point of diversion, each application with a priority earlier than the priority established by the filing of the application of change shall be included in the safe-yield analysis.

(7) If the perimeter of the area under consideration intersects a group of wells authorized under prior applications, permits, certificates, or vested rights, a reasonable quantity of water shall be assigned to each well based upon the best available information.

(b) The following shall not be subject to this regulation:

(1) An application to appropriate groundwater in an area not closed by regulation or intensive groundwater use control area order by the chief engineer to new non-domestic, non-temporary permits and term permits for five or fewer years, if all of the following conditions are met:

(A) The annual quantity of water requested in the application does not exceed 15 acre-feet;

(B) the sum of the annual quantity of water requested in the application and the total annual quantities of water authorized by prior approvals of applications allowed because of an exemption pursuant to this regulation does not exceed 45 acre-feet in a two-mile-radius circle surrounding the proposed point of diversion;

(C) the approval of the application does not authorize an additional quantity of water out of an existing authorized point of diversion with a non-domestic approval of application or water right that would then authorize a total combined annual quantity of water from that point of diversion in excess of 15 acre-feet;

(D) the approval of the application does not authorize an additional quantity of water to be used on a currently authorized non-domestic place of use in excess of 15 acre-feet;

(E) the approval of the application does not authorize an additional quantity of water to be pumped through a common distribution system in excess of 15 acre-feet;

(F) the application meets the well spacing criteria in K.A.R. 5-22-2;

(G) the application meets the requirements of all other applicable regulations in effect when the application is filed; and

(H) the maximum authorized rate of diversion does not exceed 50 gallons per minute;

(2) an application for a non-consumptive use of groundwater;

(3) an application for change in point of diversion, if the following conditions are met:

(A) The diversion works were completed 300 feet or less from the originally authorized point of diversion and within 150 feet of the location approved by the chief engineer; ~~and~~

(B) a notice of completion was timely filed with the chief engineer under the original approval of application; and

(C) if located within the well spacing areas specified in K.A.R. 5-22-2(d)(1), both of the following conditions are met:

(i) The number of wells comprising the point of diversion is not proposed to be increased; and

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(ii) each point of diversion is proposed to be relocated 300 feet or less from the currently authorized location, the currently authorized point of diversion and diversion works have been completed, and a notice of completion has been timely filed with the chief engineer before the effective date of this regulation;

(4) an application requesting only an additional rate of diversion on an existing well, if the approval of the application meets the following requirements:

(A) Is limited to the maximum annual quantity of water authorized by a prior certified, vested, or appropriation right; and

(B) contains both of the following requirements:

(i) The approved application for additional rate shall be dismissed if the prior certified, vested, or appropriation right is dismissed and terminated; and

(ii) the approved or certified maximum annual quantity of water shall be reduced in an amount equal to any subsequent reduction in the maximum annual quantity of water authorized by the prior certified, vested, or appropriation right;

(5) an application for a standby well;

(6) an application for a bank storage well only to the extent that the bank storage well is withdrawing bank storage water; and

(7) an application for an aquifer storage and recovery well. (Authorized by and implementing K.S.A. 82a-706a and K.S.A. ~~2014~~ 2015 Supp. 82a-1028; effective May 1, 1983; amended Oct. 15, 1990; amended March 7, 1994; amended Nov. 12, 2004; amended May 14, 2010; amended June 12, 2015; amended P-_____.)

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**K.A.R. 5-25-21. Alternative method for calculating the amount of water deposited in a multiyear flex account.** Each water right owner within the boundaries of the district who is otherwise eligible to establish a multiyear flex account under K.S.A. 82a-736, and amendments thereto, and the implementing regulations and who meets all of the requirements in subsection (b) shall be eligible to use the alternative calculation method in subsection (a) pursuant to K.S.A. 82a-736(c)(1)(D)(iii), and amendments thereto, to determine the amount of water deposited in the multiyear flex account.

(a) The alternative calculation method for the district shall be to compute 450 percent of the base water right's certified appropriation. However, the amount of water deposited in the multiyear flex account shall not exceed the greatest of the quantities derived using the calculation methods specified in K.S.A. 82a-736(c)(1)(D), and amendments thereto.

(b) To be eligible to use the alternative calculation method specified in subsection (a), the following requirements shall be met and shall remain met throughout the term of the period covered by the multiyear flex account permit:

(1) The owner shall meet all requirements and conditions for eligibility and participation specified in K.S.A. 82a-736, and amendments thereto, and the implementing regulations, except as modified by this regulation.

(2) The owner's base water right shall be for a center pivot irrigation system with a functional end gun.

(3) The owner shall remove the end gun from the center pivot and cap the end.

(4) Before diverting any water under the multiyear flex account, the owner shall certify to the chief engineer, on forms supplied by the chief engineer, the following information:

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(A) The location of the tract of land to be covered by the multiyear flex account term permit;

(B) the length of each center pivot system covered by the multiyear flex account term permit;

(C) the type of end gun removed and any other information sufficient to enable the chief engineer to determine the number of acres irrigated by the end gun; and

(D) the date of removal of the end gun.

(5) The owner shall maintain the center pivot without an end gun for the duration of the period covered by the multiyear flex account term permit.

(6) The authorized place of use shall not be increased during the term of the multiyear flex account permit.

(7) The authorized place of use shall be located wholly within the boundaries of the district.

(c) If the owner qualifies for a multiyear flex account term permit and is eligible under this regulation to use the alternative calculation method, the chief engineer shall enter an order that reduces the authorized place of use of the owner's base water right during the multiyear flex account permit term. The reduced authorized place of use shall be equal to the maximum number of acres legally irrigated by the center pivot system for the previous five calendar years minus the number of acres irrigated by the center pivot system's end gun. (Authorized by K.S.A. 82a-706a and K.S.A. 2015 Supp. 82a-1028; implementing K.S.A. 2015 Supp. 82a-736; effective P-_____.)

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**KANSAS DEPARTMENT OF AGRICULTURE**
**IMPACT STATEMENT**
**Amended Regulations**
**K.A.R. 5-1-1 Definitions; and K.A.R. 5-12-1 Aquifer Storage and Recovery Permitting**

## I. Summary of Proposed Regulation, Including Its Purpose.

K.A.R. 5-12-1 relates to the storage of water in an aquifer storage and recovery system for the purposes of artificial recharge. As described in K.A.R. 5-12-1 each applicant for a permit to appropriate water for artificial recharge shall define the horizontal and vertical extent of the basin storage area. The proposed changes to K.A.R. 5-12-1 would allow the minimum water level to be defined by the bedrock elevation as opposed to the current definition of the water level that occurred within 10 years prior to the application filing or longer period if demonstrated by the applicant to reflect the lowest water level.

K.A.R. 5-1-1 is amended to add definitions as used in K.A.R. 5-12-1.

## II. Reason Or Reasons The Proposed Regulation Is Required, Including Whether Or Not The Regulation Is Mandated By Federal Law.

The regulation change was requested by the City of Wichita. The City has developed and is in the process of implementing an aquifer storage and recovery project in the Equus Beds Aquifer. A primary purpose of the initial phase of the storage recovery project was to develop a freshwater barrier to the salt water contamination moving towards the wellfield from the Burrton Area. Under existing regulations, the bottom extent of the basin storage area is defined by the calculated levels of storage in 1993. The principle purpose of subsequent ASR phases has been to provide for additional long-term supply for the City.

Prior to 1993 and in the years since, the City of Wichita has increased the use of surface water from Cheney Reservoir and decreased the use of Equus Beds groundwater resources. As a result, water levels within the Wichita well field have partially recovered.

Examination of the USGS storage data indicates that during the recent drought, a pattern of decline is emerging in areas of the Equus Beds Aquifer. While the City has not increased its usage from the aquifer and does not use all of its available water appropriations, water levels have declined significantly during the recent drought through reduced recharge and increased use within the basin storage area. This pattern indicates water levels in the basin storage area for the aquifer storage and recovery project are not solely dependent on the amount of water that the City utilizes. The City is concerned that during future, critical dry periods, water levels may fall below 1993 levels and the City would be prevented from recovering ASR credits.

The City has requested the revision to allow for withdrawal of recharge credits when they are available and remove the restrictions limiting recharge credit withdrawal when levels are above the 1993 index water level. This change will allow the City to operate the aquifer storage and recovery project as intended.

The regulation, while requested by the City of Wichita, will be applied statewide.

The regulation is not mandated by Federal Law.

## III. Anticipated Economic Impact Upon The Kansas Department Of Agriculture.

There will be minimal costs associated with revising permit conditions.

## IV. Anticipated Financial Impact Upon Other Governmental Agencies And Upon Private Business Or Individuals.

There will be no costs to other governmental agencies or private businesses or individuals.

## V. Less Costly or Intrusive Methods That Were Considered, But Rejected, And The Reason For Rejection.

No alternative methods were considered because of minimal impact to the agency and other governmental agencies.

## VI. Environmental Impact

No significant impacts (neither beneficial nor degrading) could be identified as resulting should the proposed changes be adopted. The storage capacity of the basin storage will not change under the request, only the ability to recover recharge credits when they are available as determined by the aquifer storage project accounting and Kansas Department of Agriculture accounting.

**KANSAS DEPARTMENT OF AGRICULTURE**
**ECONOMIC IMPACT STATEMENT**
**K.A.R. 5-22-7 Amended**

**I. Summary of proposed regulation, including its purpose.**

The proposed amendments to the regulation will modify recharge rates to be used in safe yield calculations in two areas of concern in the Equus Beds GMD No. 2.

**II. Reason or reasons the proposed regulation is required, including whether or not the regulation is mandated by federal law.**

The proposed amendment will limit the safe yield by reducing the current recharge rate from 6 inches to 2 and 3 inches in areas of concern and well spacing which will help ensure existing water rights in the area will not be impaired due to any new development including changes to existing water rights in two areas of concern within GMD 2. These areas near Pretty Prairie and Partridge have indications of groundwater decline and poor water quality. These amendments limit new development.

This regulation is not mandated by federal law.

**III. Anticipated economic impact upon the Kansas Department of Agriculture.**

The proposed amendment will result in no fiscal impact to the department.

**IV. Anticipated financial impact upon other governmental agencies and upon private business or individuals.**

The proposed amendments will result in no fiscal impact to GMD 2. The amendment will have a positive fiscal impact to existing water rights in the areas of concern due to the protection against impairment by new development.

**V. Less costly or intrusive methods that were considered, but rejected, and the reason for rejection.**

No other methods were considered by the state.

**VI. Environmental Impact.**

Improved groundwater resource conditions, both quality and quantity, could be achieved through the adoption of this regulation change.

Proposed

**KANSAS DEPARTMENT OF AGRICULTURE**
**IMPACT STATEMENT**
**Amended Regulations**
**K.A.R. 5-25-21 MYFA Quantity**

**I. Summary of Proposed Regulation, Including Its Purpose.**

This draft rule is proposed by the Big Bend Groundwater Management District No. 5 (GMD 5). The proposed rule will allow an additional method to calculate the amount of water which may be deposited in a multiyear flex account (MFYA). The proposed method will allow five (5) times 90% of the annual authorized quantity to be enrolled into a MYFA, or another way to say it is, 450% of the base water right's authorized quantity to be enrolled into a MYFA. To qualify for this method, the applicant must agree to remove the end gun from the irrigation system that will be authorized by the MYFA.

**II. Reason Or Reasons The Proposed Regulation Is Required, Including Whether Or Not The Regulation Is Mandated By Federal Law.**

KSA 82a-736 (D) (iii) allows a method for a GMD to determine a method for calculating the authorized quantity for a MYFA in an amount that shall not increase the long-term average use of the groundwater right as specified by rule and regulation. Therefore, a regulation is necessary to allowing the above described calculation. The board of directors of GMD 5 feels strongly that a reduction in actual water use will occur if the end gun is removed even with 450% of the base water rights authorized quantity is available to divert.

The regulation is not mandated by Federal Law.

**III. Anticipated Economic Impact Upon The Kansas Department Of Agriculture.**

The initial interest in the MYFA program was due to the severe drought in 2011-2012. The law was changed providing a more flexible MYFA for our producers. We processed approximately 750 MYFAs at that time. Increases in MYFA applications and the increase in commitment of staff resources are more significantly driven by drought conditions. Therefore, while this regulation change may increase interest within GMD 5, it is not likely to match any increase anticipated as a result of drought conditions.

**IV. Anticipated Financial Impact Upon Other Governmental Agencies And Upon Private Business Or Individuals.**

There may be a positive economic impact to the water users that remove their end gun due to a reduction in pumping costs by making a more efficient use of the water they are diverting.

**V. Less Costly or Intrusive Methods That Were Considered, But Rejected, And the Reason For Rejection.**

No alternative methods were considered because of minimal impact to the agency and other governmental agencies.

**VI. Environmental Impact**

There may be a positive impact on the local water resource condition due to the removal of the endgun.