

Kansas Department of Health & Environment

Kansas NPDES Discharging Lagoon Multiple Discharger WQS Variance For Ammonia Criteria Permit Application Request

Dear Permittee:

The NPDES permit for your discharging lagoon wastewater treatment facility will soon be reviewed by the Kansas Department of Health and Environment (KDHE) for reissuance. The standard KDHE permit application forms are attached for your action, review, and signature. This review by KDHE involves many different factors, including a summary of recent history effluent quality and the quantity of pollutants discharged compared to the Kansas regulations for water quality standards (WQS). The water quality standard for the pollutant ammonia has recently been revised and become more stringent for Kansas, pursuant to the EPA 2013 final national recommended ambient water quality criteria for ammonia. An initial review by KDHE indicates the effluent ammonia discharge concentration for ammonia from the discharging wastewater treatment lagoon currently serving your permitted area would not comply with these more stringent water quality standards regulations.

KDHE has also initially determined the cost of construction and operation of an enhanced treatment process necessary to reduce ammonia to the concentrations compliant with the new regulations would result in wastewater system user fees and charges above the normally accepted and reasonable maximum amounts established by EPA guidance and procedures for a wastewater lagoon system serving a community of your size and economic conditions. This is a common outcome for small population sewer systems served by discharging wastewater treatment lagoons, and consequently, KDHE has developed a Multiple Discharger Variance (MDV) procedure for applying alternative ammonia criteria to discharging lagoon systems to use in these situations. Application of the Variance is available to you, the Permittee, if you desire to pursue this option.

The Permittee must sign this additional WQS Variance Application as provided on page 4 to allow KDHE to fully develop the MDV option for your NPDES permit.

For background information, a "WQS Variance" is a water quality standard that reflects the Highest Attainable Condition" (HAC) that serves as a basis for a temporary or time-limited "alternative effluent limitation" in a Permittee's reissued NPDES permit rather than the more stringent effluent limitation based on the underlying water quality standard for the pollutant addressed in the WQS Variance (in this case, ammonia). KDHE has developed a MDV procedure for ammonia for discharging lagoons treating domestic strength sewage and adopted this MDV procedure into the Kansas water quality standards regulations as approved by EPA. The HAC derived by KDHE is based on the prior operating history of each discharging lagoon facility.

Furthermore, the terms and conditions of any NPDES permit issued for a discharging lagoon wastewater treatment facility that includes alternative effluent limits for ammonia based on the HAC for the specific lagoon facility, includes complying with a Pollution Minimization Plan (PMP) as established by KDHE. The terms and conditions of the PMP are presented below, and would be attached to and be enforceable through the reissued

NPDES permit The PMP presents: (1) the *restrictions* that KDHE will *impose*, (2) the *operational* changes *encouraged* to be implemented, and, (3) the *construction* improvements the Permittee will be encouraged to *consider*, thereby allowing the Permittee to continue operating their discharging wastewater treatment lagoon without a Schedule of Compliance requiring a facility upgrade to reduce ammonia in the effluent below the HAC limits. KDHE will also review all of these operational and construction options and implement those deemed feasible without causing widespread social and economic impact.

The following restrictions will be included in the NPDES permit:

1. The Permittee shall retain a Certified Operator as required by Kansas Regulations.
2. The Permittee shall provide reasonable and adequate maintenance of the WWT Lagoon. This includes mowing the grassy areas around the lagoon water's edge to the fence line maintaining growth to 8 inches or less in height; removing any trees, saplings, and brush in the open area inside the fenced area and within the fence line; maintaining the perimeter fencing; and providing a locking gate.
3. The Permittee shall maintain operation and performance of the WWT lagoon to comply with standard secondary limitations of the NPDES permit, that is, effluent BOD5 equal to or less than 30 mg/l and effluent TSS equal to or less than 80 mg/l concentrations, and also comply with E. Coli limitations, if included in the permit.
4. The Permittee shall not allow (additional) industrial strength wastewater that includes high concentrations of Total Kjeldahl Nitrogen (TKN) to be connected to the collection system or otherwise discharged into the WWT lagoon, that is, no additional wastewater greater than 25 mg/l (For example, "porta-potty" wastewater or septage is not allowed.) If new industry is added to the influent, then additional sampling of influent TKN will be required to determine the potential increase in NH₃ that does not degrade the Highest Attainable Condition (HAC) in the effluent discharge.
5. The Permittee shall monitor the depth of accumulated sludge in every lagoon cell, measuring sludge buildup depth at least once every 10 years or when requested by KDHE.
6. When the population/pollutant loading exceeds 85% of the rated capacity as shown on the NPDES permit issued to the discharging WWT lagoon Permittee, the Permittee shall begin planning for expansion of the lagoon facility by completion of engineering studies and implementing a plan to collect and save money for expansion of the lagoon or upgrade of the treatment process in conjunction with capacity expansion. (The Permittee will be notified by KDHE when this population/pollutant loading is reached, and appropriate schedules will be negotiated.)

The following operational changes will be encouraged to be implemented in the NPDES permit:

1. The Permittee should consider opportunities to irrigate the treated effluent onto adjacent agricultural property taken from the final cell of the process, to reduce and/or eliminate discharge of effluent flow.
2. The Permittee should consider the option of controlled discharge operations, to increase discharge flow and volumes during any time when the effluent meets ammonia and all other limitations and to decrease discharge flow and volumes during any time when the effluent does not meet ammonia and all other limitations.
3. The Permittee should review the piping flow path to assure the wastewater flow is provided the maximum detention time within the lagoon cells, by taking the longest path through each and all individual lagoon cells.
4. The Permittee should consider de-sludging the system when the sludge buildup in any two cells exceeds 16 inches of measured depth.
5. The Permittee should consider adding an opaque covering to any open effluent structure to block sunlight from entering the effluent water.

The following construction improvements will be encouraged for the Permittee to consider:

1. The Permittee is encouraged to consider constructing improved piping layout, structure locations, and effluent structure location to improve flow path through the lagoon cells to extend the detention time to the maximum extent possible through each and all individual lagoon cells.
2. The Permittee is encouraged to consider constructing a new effluent discharge structure with multiple draw off pipes extending into the final lagoon cell beyond the interior slope to allow access to differing water quality layers of the final cell, with an opaque covering over any open effluent structure to block sunlight from entering the effluent water.
3. The Permittee is encouraged to consider adding additional wastewater treatment cells to the existing lagoon system.
4. The Permittee is encouraged to consider adding additional "wetlands treatment/storage" cells to become a non-discharging design lagoon facility.
5. The Permittee is encouraged to consider construction of an aeration/clarifier structure(s) to receive influent raw sewage and provide activated sludge treatment with oxidation/reduction potential (ORP) aeration controls for biological nitrogen removal.

If the Permittee wishes to have KDHE pursue this option for this NPDES permit, please sign and return this additional WQS Variance Application page with the other permit application documents.

Please note, signature by the Permittee allows KDHE to continue the more detailed MDV eligibility review process at this time to determine if the NPDES permit can receive the MDV for ammonia effluent limitations. The Permittee is not yet committed to accept the MDV alternative ammonia limitations or PMP conditions based on the HAC, and is not restricted in any manner to comment on the Draft permit. Furthermore, if the WQS Variance Application is not signed and returned at this time, the Permittee may, in the future, request a review by KDHE to determine their eligibility to receive the MDV for ammonia discharge from its lagoon treatment facility.

At this time, (Permittee) wishes to apply for consideration of a Multiple Discharger Variance for ammonia in its reissued NPDES wastewater discharge permit.

(City Name)

(Permittee Signature)

(Title)

Date