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DIVISION OF WATER  
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LEONARD K. PETERS  
SECRETARY

## **FACT SHEET**

# **GENERAL KENTUCKY NO DISCHARGE OPERATIONAL PERMIT (KNDOP) FOR CLOSED LOOP AND SPRAY IRRIGATION SYSTEMS**

**AI No.:** 35050

**Permit Writer:** Larry Sowder

**Date:** April 29, 2011

## **1. SYNOPSIS**

### **1.1 Introduction**

Title 401 of Kentucky's Administrative Regulations (KAR) state that a person shall not construct, modify, or operate a facility without having received a permit from the cabinet (401 KAR 5:005, Section 1(2)). Facilities with a discharge are required to obtain a Kentucky Pollutant Discharge Elimination System (KPDES) Permit pursuant to 40 KAR 5:055, Section 2(1). In accordance with 401 KAR 5:005, Section 25, Division of Water (DOW) issues a Kentucky No Discharge Operational Permit (KNDOP) to facilities that do not discharge and do not intend to discharge into waters of the Commonwealth, i.e. "No Discharge" or ND facilities.

The types of activities undertaken, the wastewaters generated and the treatment systems employed at ND facilities varies widely from the small to large, from simple to complex. Examples of activities that utilize ND facilities include but are not limited to: animal feeding operations, commercial (car washes, pools, country clubs, laundries, slaughter houses, food processing plants, etc), industrial (manufacturing), municipal (wastewater treatment and water treatment), residential (single and multi family housing units, subdivisions, etc.). Typical wastewaters generated include but are not limited to domestic (sanitary), process, non-process, filter backwash, animal wastes, etc. Treatment systems range in complexity and may consist of one or more of the following elements: sedimentation, filtration, floatation, neutralization, chemical precipitation, biological (extended aeration, facultative lagoons, etc), air stripping, etc.

Due to the variation in the types of activities, wastewaters generated and treatment systems DOW has developed a multi-tiered approach to KNDOP. DOW will utilize both individual facility specific KNDOPs and general or category specific KNDOPs to address ND facilities. DOW currently utilizes individual KNDOPs and a general KNDOP for animal feeding operations. DOW has also developed a general KPDES permit for individual family residences that addresses both discharge and no discharge systems. The remaining universe of ND facilities can be categorized into two groups: Closed Loop Systems (CLS) and Spray Irrigation Systems (SIS).

A CLS typically consists of the generation of wastewater from an activity or activities, collection and treatment of these wastewaters followed by recycle of the treated wastewater to the activity or activities that generated the wastewater for reuse. Wastewaters may undergo numerous cycles of generation, treatment and reuse. The actual number of cycles that a wastewater may undergo depends on the types and concentration of the pollutants and the removal efficiency of the treatment system. With each cycle, the pollutant concentration will increase throughout the system until the treated wastewater for reuse is not of sufficient quality to be reused by the activity. When this occurs, the system must be blown down to remove a portion of the wastewater and fresh water must be added. The wastewater removed is known as reject water and is typically transported offsite to another wastewater treatment plant or for disposal as a solid waste. The disposal of the wastewater may require permits from other state or federal or local agencies. A system that does not treat and reuse the wastewater but collects and holds until it can be removed for further disposal is not a CLS and is not required to have a KNDOP. CLSs are typically used for the management of process wastewaters.

The second category SIS is a land application process where the wastewater is apply to the surface of the land via spraying. Such systems apply the wastewaters at sufficiently low rates as to allow adsorption of the wastewaters into the soils without runoff to waters of the Commonwealth. SISs can be mobile or fixed, they can be pressurized or be drip systems. Examples of mobile systems are travelling rain guns and tanker trucks with spray bars. Fixed systems include both surface and subsurface distribution systems with fixed position spray heads that are elevated above the ground or pop up. SISs are the most commonly used and permitted no discharge systems in Kentucky.

In order to effectively manage this remaining sector of ND facilities DOW is proposing to issue a general KNDOP permit for CLS and SIS facilities meeting eligibility requirements and individual KNDOP permits for those that are not eligible.

## 1.2 Selected Definitions

The following selected definitions are provided for clarification and convenience of the reader.

**Animal Feeding Operation (AFO)** Animal feeding operation" or "AFO" means a lot or facility, other than an aquatic animal production facility, that meets of the following description:

- a) Animals other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of forty-five (45) days or more in a twelve (12) month period; and
- b) Crops, vegetation forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility

**Best Management Practices (BMP)** means, schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the commonwealth; and 2. Treatment requirements, operating procedures, practices to control site run-off, pollution of surface water and groundwater from nonpoint sources, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Biochemical Oxygen Demand (BOD)** means a measurement of the amount of oxygen used by the decomposition of organic material, over a specified time (usually 5 days) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater.

**Cabinet** means the Energy and Environment Cabinet;

**Certified operator** means an individual who holds an active certified operator's certificate issued in accordance with 401 KAR 11:050.

**Characteristic Wastes** means a waste, pursuant to 401 KAR Chapter 31 [40 CFR Part 261] that meets one or more of the following four characteristics: Ignitability, Corrosivity, Reactivity, and Toxicity

**Closed Loop System (CLS)** means a system where wastewaters may be treated and reused several times within the process that generates them or other processes at the facility.

**Commercial** means services provided at stores, offices, restaurants, warehouses, and other service and nonmanufacturing activities, excluding households and industries.

**Conventional pollutant** means biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), total suspended solids (TSS), ammonia (as N), bromide, chlorine (total residual), color, fecal coliform, fluoride, nitrate, kjeldahl nitrogen, oil and grease, E. coli, or phosphorus.

**Domestic** means relating to household wastes or other similar wastes. It is used to distinguish municipal, household, or commercial water or wastewater services from industrial water or wastewater services.

**Domestic sewage** means sewage devoid of industrial or other wastes and that is typical of waste received from residential facilities. It may include wastes from commercial developments, schools, restaurants, and other similar developments.

**Facility** means a sewage system; except for septic tanks, pretreatment facilities regulated by an approved pretreatment program or inter-municipal agreement, and disposal wells as used in 401 KAR 5:090.

**Groundwater** means the subsurface water occurring in the zone of saturation beneath the water table and perched water zones below the B soil horizon including water circulating through fractures, bedding planes, and solution conduits.

**Groundwater Protection Plan (GPP)** means a document that establishes a series of practices designed to prevent groundwater pollution.

**Hazardous waste** means any discarded material or material intended to be discarded or substance or combination of such substances intended to be discarded, in any form which because of its quantity, concentration or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed

**Individual Family Residence (IFR)** means a housing unit designed for occupancy by a single family having an on-site wastewater treatment system with a design capacity not exceeding 1,000 gallons per day.

**Industrial** means manufacturing or industrial processes, including, but not limited to, the following manufacturing processes:

- a) electric power generation;
- b) fertilizer or agricultural chemicals;
- c) food and related products or by products;
- d) inorganic chemicals;
- e) iron and steel manufacturing;
- f) leather and leather products;
- g) nonferrous metals manufacturing or foundries;
- h) organic chemicals; plastics and resins manufacturing;
- i) pulp and paper industry;
- j) rubber and miscellaneous plastic products;
- k) stone, glass, clay, and concrete products;
- l) textile manufacturing;
- m) transportation equipment; and
- n) water treatment.

**Karst** means the type of geologic terrain underlain by carbonate rocks where significant dissolution of the rock has occurred due to flowing groundwater.

**Kentucky No Discharge Operational Permit (KNDOP)** means a permit issued pursuant to 401 KAR 5:005 for operating a wastewater treatment plant that does not have a discharge to a stream, including agricultural waste handling systems and spray irrigation systems.

**Land Application** means the uniform placement of animal waste on or in the soil by spraying or spreading on the surface, incorporation into the soil, or injection directly beneath the surface.

**Listed Waste** means a waste that is listed on the F, K, P or U list of hazardous wastes established in 401 KAR Chapter 31 [40 CFR Part 261].

**Municipality** means a city, district, or other public body created by or under the Kentucky Revised Statutes and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency pursuant to 33 U.S.C. 1288.

**Publicly owned treatment works (POTW)** means any device or system used in the treatment (including recycling and recovery) of municipal sewage or industrial wastes of a liquid nature, which is owned by the Commonwealth or a political subdivision of the Commonwealth;

**Process wastewater** means any water, which, during manufacturing or processing, comes into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

**Reject water** means wastewater blown down, i.e. removed, from a closed loop system due to the quality of the wastewater preventing its reuse.

**Reoccurring discharge** means a discharge that occurs two (2) or more times in a twelve (12) month period.

**Schedule of compliance** means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements leading to compliance with KRS Chapter 224 and 401 KAR Chapters 4 through 11.

**Sewage** means the water-carried human or animal wastes from residences, buildings, or other places together with industrial wastes or underground, surface, storm or other water, as may be present.

**Sewage System** means individually or collectively those constructions or devices used for collecting, pumping, treating, and disposing of liquid or waterborne sewage, industrial waste, or other wastes.

**Sinkhole** means a naturally occurring topographic depression in a karst area. Its drainage is subterranean and serves as a recharge source for groundwater and it is formed by the collapse of a conduit or the solution of bedrock.

**Spray Irrigation System (SIS)** means a system that applies wastewaters to the surface of the land via fixed or mobile spraying units.

**Surface Water** means those waters having well-defined banks and beds either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered surface waters of the Commonwealth.

**Total Suspended Solids (TSS)** means the total suspended solids (non-filterable residue) as determined by use of the method specified in 40 CFR Part 136.

**Toxic Pollutant** means a pollutant listed as being toxic in 401 KAR 5:080, Section 7.

**Toxic substance** means a substance that is bioaccumulative, synergistic, antagonistic, teratogenic, mutagenic, or carcinogenic and causes death, disease, a behavioral abnormality, a physiological malfunction, or a physical deformity in an organism or its offspring or interferes with normal propagation.

**Water or Waters of the Commonwealth** means and includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction

**Wastewater Treatment Plant (WWTP)** means a facility used for the treatment and disposal of sewage.

### 1.3 Area of Coverage

This permit covers those closed loop and spray irrigation systems utilized by commercial or industrial operations located within the 120 counties of the Commonwealth of Kentucky.

### 1.4 Eligibility Requirements

In determining the eligibility of a facility for coverage under this general permit, DOW shall consider the following factors:

- 1) Is there an existing KNDOP or KPDES general permit available for this facility
- 2) Does the facility currently hold a valid KNDOP or KPDES permit that better addresses the facility
- 3) Would a technology based effluent guideline, pursuant to 401 KAR 5:065, Section 2(9) apply if the wastewater was discharged to a water of the Commonwealth
- 4) Is the volume of wastewater treated equal to or greater than 50,000 gallons per day
- 5) Does the wastewater contain pollutants listed as toxic or hazardous
- 6) Does the wastewater contain pollutants at concentrations such that the wastewater would be a "listed waste" or "characteristic waste" in accordance with 401 KAR Chapter 31
- 7) Will the wastewater be land applied in a karst area
- 8) Does the facility possess unique factors which are better addressed by an individual KNDOP

Based on DOW's initial evaluation of individual KNDOPs the following types of activities are not eligible for coverage under this permit.

- 1) Animal Feeding Operations (AFOs)
- 2) Individual Family Residences (IFRs)
- 3) POTWs
- 4) Landfills
- 5) Groundwater Remediation
- 6) Hazardous Waste Generation
- 7) Industrial Process Wastewater

### **1.5 Permitting Action**

This is a first issuance of a KNDOP General Permit for closed loop and spray irrigation systems that meet the eligibility requirements of this permit.

## **2. PROPOSED PERMIT CONDITIONS**

### **2.1 General Conditions**

The following general conditions apply to all facilities seeking coverage under this general permit. These conditions are pursuant to 401 KAR 5:005, Section 25(7)(c).

- 1) There shall not be a point source discharge of wastewater from the facility.
- 2) The permit authorizes operation only of the WWTP described in the permit in the manner and under the conditions described in the permit application and supporting documents as approved by the cabinet in the permit.
- 3) The permit shall not be construed as authorizing an operation that is otherwise in contravention of a statute, administrative regulation, ordinance, or order of a governmental unit.
- 4) The permit shall not be construed to authorize the creation or maintenance of a nuisance.
- 5) The permit shall be subject to revocation or modification by the cabinet as established in KRS Subchapter 224.10-100.
- 6) Commencement of a routine point source discharge shall result in a permit revocation.
- 7) A permit shall be issued in accordance with the provisions of KRS Chapter 224 and 401 KAR Chapters 4 through 11. Issuance of the permit shall not relieve the permittee from the responsibility of obtaining any other permits or licenses required by the cabinet and other state, federal, and local agencies.
- 8) If applicable, the waste materials removed from the settling basin shall be disposed of according to the requirements of the Division of Waste Management in 401 KAR Chapters 30 through 49.
- 9) Land application that results in runoff to a stream or ponding in a sinkhole shall be prohibited.
- 10) Waste storage lagoons shall not be constructed in sinkholes (natural closed surface depressions) unless approved by the cabinet

### **2.2 Special Conditions**

The following conditions are pursuant to 401 KAR 5:005, Section 25(7) which states the permit may contain special conditions that, in the best professional judgment of the Cabinet, are necessary to comply with KRS Chapter 224 and 401 KAR Chapters 4 through 11.

#### **2.2.1 Best Management Practices Plan (BMPP)**

A BMP Plan is a document developed, implemented and maintained by the permittee to prevent the release of pollutants to the environment. BMP plans include schedules of activities, prohibitions of practices, maintenance procedures, treatment requirements, operating procedures, practices to control site run-off, pollution of surface water and groundwater from nonpoint sources, spillage or leaks, sludge or waste disposal, or drainage from raw material storage and other management practices. This requirement applies to all industrial operations and any operation that has onsite any compound or substance in such quantities that should a release occur an adverse environment impact could result.

### **2.2.2 Certified Operators**

Pursuant to 401 KAR 5:010 wastewater treatment plants and wastewater collection systems that accept wastewaters containing domestic sewage are to be operated by a certified operator. In accordance with KRS 224.10-110 and KRS 224.73-110 the Cabinet has established an operator's certification program that is administered by the Division of Compliance Assistance. Specific requirements of this program are found in 401 KAR 11:001 through 11:060.

### **2.2.3 Closed Loop Systems (CLS)**

Closed Loop Systems recycle treated wastewater until the pollutant concentrations or other pollutant characteristic renders the wastewater unviable for reuse. Typically, the concentration of total dissolved solids is the primary reason for rejecting the wastewater. However, the pollutant concentrations or characteristics may result in the wastewater being a "listed waste" or "characteristic waste" pursuant to 401 KAR Chapter 31 [40 CFR Part 261]. In order to ensure proper management and disposal of the reject water periodic characterization of the wastewater is required. Those facilities seeking coverage under this general permit shall provide an initial characterization of the reject water to determine pollutant content and concentrations with the application (Form ND). The permittee shall on annual basis or in the event of a modification of the process characterize the reject water and provide notification to DOW of changes to the pollutants or pollutant concentrations. In the event the characterization indicates that the reject water is now a "listed" or "characteristic" waste the permittee shall notify the Division of Waste Management and submit a revised Form ND to the DOW to obtain an individual KNDOP for the operation.

### **2.2.4 Groundwater Protection Plan (GPP)**

The Groundwater Protection Plan (GPP) is a document, required by 401 KAR 5:037 Section 2, which establishes a series of practices designed to prevent groundwater pollution. A GPP is required for any activity that has a reasonable potential to cause groundwater pollution such activities are listed in 401 KAR 5:037 Section 2(2). The practices established in the GPP are enforceable conditions of KNDOP issued to that activity.

### **2.2.5 Spray Irrigation Systems (SIS)**

The requirements of 401 KAR 5:005, Section 21 establishes criteria for WWTPs that propose to dispose of effluents by spray irrigation.

#### **2.2.5.1 All SISs**

The following conditions apply to all SISs:

- 1) Unless otherwise approved by DOW the maximum application rate of effluent shall not exceed 1,000 gpd per acre.
- 2) The soil of a spray irrigation field shall have an average saturated hydraulic conductivity of not less than six-tenths (0.6) inch per hour, as established by either the saturated hydraulic conductivity value provided by an NRCS soil survey; or a saturated soil test of the spray field.
- 3) The spray field shall have less than a six (6) percent slope unless the average saturated hydraulic conductivity for the spray field is more than six (6) inches per hour; and the average soil depth of the spray field is at least twenty-four (24) inches.
- 4) The spray irrigation field shall have perennial vegetative growth on no less than 95% of the area to promote adsorption, evaporation, and transpiration.
- 5) A twenty (20) foot buffer zone shall be provided between the outer boundary of the spray field and the property boundary or the applicant shall provide screening to inhibit the transport of aerosols and windborne spray across property boundaries.
- 6) Effluent applied to the spray irrigation field shall be contained on the spray field.

#### **2.2.5.2 SISs Spraying Domestic Sewage**

In addition to the requirements of Section 2.2.5.1 All SISs, the following conditions shall apply to SISs that spray domestic sewage:

- 1) No portion of the spray field shall be closer than 200 feet from an existing dwelling.

- 2) No portion of a spray field shall be closer than the minimum setback requirements for a leach bed as established in 902 KAR 10:085, Section 8.
- 3) Effluent derived from a wastewater that contained human waste shall not be applied to an area in active production of food for human consumption.

### **2.2.5.3 Quality Requirements**

KRS 224 or 401 KAR Chapters 4 through 11 establish conditions for the protection of the air, land and water and for the people of the Commonwealth. The land application of untreated wastewaters may be inconsistent with these conditions. Therefore, DOW has determined that treatment may be required of the wastewater depending upon the constituents of that wastewater and the concentrations of those constituents.

#### **2.2.5.3.1 Biochemically Degradable Wastes**

Such wastes include but are not limited to domestic sewage, custom slaughterhouse wastes, etc. The Cabinet has established minimum treatment requirements (secondary treatment) for such wastes in 401 KAR 5:045. These requirements include monthly average and weekly average concentration limitations for Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS). In addition to being biochemically degradable wastes these wastes also, contain pathogens that must be inactivated to protect human health. Typical treatment for pathogen includes some form of disinfection either ultraviolet or chlorination. Therefore, for these types of wastewater, DOW is requiring a minimum of secondary treatment and disinfection are to be applied prior to spraying of the wastewater.

Note: Secondary Treatment as defined in 401 KAR 5:045 is not synonymous with the federal definition of Secondary Treatment, which is for POTWs found at 40 CFR 133.

#### **2.2.5.3.2 Filter Backwash Waters**

Filtering systems utilized by surface and groundwater intakes and swimming pools remove total suspended solids that over time accumulate on the surface of the filter and require removal to maintain the filter's removal efficiency. The standard method of removal is to reverse the flow through the filter or backwash the filter. Usually chlorinated water is used to backwash the filter. Based on this method of operation DOW does not believe that a reasonable potential for human health issues would exist and therefore is not proposing any additional requirements for these types of facilities.

#### **2.2.5.3.3 Industrial Wastewaters**

Industrial wastewaters consist of process and non-process wastewaters. Process wastewaters include those waters that comes into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Process wastewaters include a wide variety of wastewaters containing various constituents at various concentrations. Due to this variation, DOW is requiring individual KNDOPs for process wastewaters, except those related to the production of food and beverages. Process wastewaters related to the production of food and beverages are biochemically degradable wastewaters and shall comply with the requirements in Section 2.2.5.31.

Non-process wastewaters include but are not limited to boiler blow down, noncontact cooling water, cooling tower blow down, reverse osmosis (RO) water, etc. Typical pollutants and pollutant characteristics associated with these types of wastewater include but are not limited to; pH, total suspended solids, total dissolved solids, thermal loading, etc. In addition, non-process wastewaters may contain various additives such as biocides and corrosion inhibitors. To protect the environment and human health the permittee shall ensure these compounds are neutralized prior to land applying.

### **2.2.5.4 Endangered or Threatened Species**

Kentucky has 3 mammals, 4 birds, 5 fish, 1 insect, 1 crustacean, 14 mussels and 9 plants that are listed as threatened or endangered. The development of a spray field and the quality of the effluent sprayed could have a direct or indirect (habitat modification or loss) adverse impact on one or more of these species. Therefore, in order to protect these species DOW is imposing the following requirements:

- 1) The quality of the wastewaters applied shall not cause or contribute to the taking of any endangered or threatened species listed pursuant to the Endangered Species Act of 1983 as amended (16 USC 1531 et seq.) or

result in the destruction or adverse modification of critical habitat.

- 2) The installation or operation of a SIS shall not cause or contribute to the taking of any endangered or threatened species listed pursuant to the Endangered Species Act of 1983 as amended (16 USC 1531 et seq.) or result in the destruction or adverse modification of critical habitat.

### **2.3 Standard Conditions**

The following standard conditions apply to all facilities seeking coverage under this general permit.

- 1) **Coverage shall be subject at all times to revocation or modification by the Kentucky Energy and Environment Cabinet as set forth in Kentucky Revised Statutes (KRS) 224. Commencement of a routine discharge would necessitate such a revocation and would require the issuance of a Kentucky Pollutant Discharge Elimination System (KPDES) permit.**
- 2) This permit shall not be construed as authorizing any operation that is otherwise in contravention of any law, regulation, ordinance or order of any governmental unit.
- 3) This permit shall not be construed as authorizing the creation or maintenance of a nuisance; to relieve the permittee from any penalty for violation of any law or regulation.
- 4) Any spill or discharge to waters of the Commonwealth shall be reported to the Department for Environmental Protection with 24 hours by calling the appropriate Division of Water Regional Office or if after hours the Cabinet's Environmental Response Line at 1 (800) 928-2380.

### **2.4 Monitoring and Reporting Requirements**

Pursuant to 401 KAR 5:005, Section 27(1) KNDOPs are to specify the type of monitoring or analysis, the frequency of such and reported to the cabinet.

## **3. PERMIT APPLICATION REQUIREMENTS**

To obtain coverage under this general permit an applicant shall submit Form ND (Form DEP 7033- ND) and the following supplemental information.

- 1) A US Geological Survey 7.5-minute quadrangle map (an electronic map is acceptable) with the facility location clearly marked.
- 2) A flow diagram and water balance of the facility indicating the design and actual average and maximum flow rates. All sources of water including makeup waters, water uses and wastewater.
- 3) The wastewater shall be analyzed to determine the pollutants and pollutant concentrations.
- 4) A water well user and spring survey within one (1) mile radius of the property boundaries

Completed Short Form ND's and supplemental information are to be sent to the address below:

Energy and Environment Cabinet  
Department for Environmental Protection  
Division of Water/Surface Water Permits Branch  
200 Fair Oaks Lane  
Frankfort, Kentucky 40601

If, based upon the review of the application the DOW determines that additional controls or requirements beyond those contained in this permit are necessary to protect water quality then the applicant shall be required to obtain an individual permit.

## **4. AUTHORIZATION TO OPERATE**

The applicant is authorized to operate under the terms and conditions of this permit upon written notification of coverage by the DOW.

## **5. PROPOSED COMPLIANCE SCHEDULE**

The applicant shall achieve compliance with all the requirements of this permit upon written notification of coverage by the DOW.

**6. OPERATIONAL CHANGES**

Operations authorized by this permit shall remain consistent with those described on the initial permit application. An updated Short Form ND shall be submitted for any change in the method of waste treatment, final disposition, or land application area. After reviewing the updated application, the DOW may require the permittee to submit an application for an individual permit.

**7. PERMIT TRANSFERS**

If a permitted facility changes owners, the new operator must submit a Change of Ownership Form (Form DEP 7032-CO) to the DOW in order to transfer coverage under this permit. Permit transfers are only permissible when there are no operational changes. Alternatively, the previous operator may terminate coverage under this permit by submitting a written request to do so. The new operator must submit a permit application in accordance with the requirements of this permit.

**8. PERMIT TERMINATIONS**

If a permitted facility is no longer in operation the permittee may terminate coverage under this permit by submitting a written request to do so.

**9. PERMIT DURATION**

Five (5) years

**10. CONTINUATION OF COVERAGE**

If this General Permit expires prior to reissuance by DOW those closed loop and spray irrigation systems utilized by commercial or industrial operations that have received authorization shall be administratively continued until reissuance of the General Permit. New coverages shall not be granted until the General Permit is reissued.

**11. PERMIT INFORMATION**

The permit, fact sheet and additional information are available by writing the DOW at 200 Fair Oaks Lane, Frankfort, Kentucky 40601.

**12. REFERENCES AND CITED DOCUMENTS**

All referenced or cited material and documents in this fact sheet are available from the DOW Central Office.



PERMIT NO.: 00000000  
AI NO.: 35050

**AUTHORIZATION TO OPERATE UNDER  
THE KENTUCKY NO DISCHARGE OPERATIONAL PERMIT SYSTEM**

**Pursuant to Authority in KRS 224,**

Closed loop and spray irrigation systems that meet the eligibility requirements of this general permit **are authorized to operate closed loop or spray irrigation systems** within the 120 counties of the Commonwealth of Kentucky.

**in accordance with all the requirements and other conditions set forth in this permit**

This permit shall become effective on May 1, 2011.

This permit shall expire at midnight, April 30, 2016.

April 29, 2011

**Date Signed**

A handwritten signature in black ink, appearing to read 'S. L. Gruzesky', is written over a horizontal line.

**Sandra L. Gruzesky, P.E. Director  
Division of Water**

## **1. PERMIT CONDITIONS**

### **1.1 Eligibility**

The following types of activities are not eligible for coverage under this permit.

- 1) Animal Feeding Operations (AFOs)
- 2) Individual Family Residences (IFRs)
- 3) POTWs
- 4) Landfills
- 5) Groundwater Remediation
- 6) Hazardous Waste Generation
- 7) Industrial Process Wastewater
- 8) Any facility that has an individual KPDES discharge permit for other wastewaters including stormwater,
- 9) Any facility that DOW determines is more appropriately addressed by an individual permit

### **1.2 General Conditions**

The following general conditions apply to all facilities seeking coverage under this general permit.

- 1) There shall not be a point source discharge of wastewater from the facility.
- 2) The permit authorizes operation only of the WWTP described in the permit in the manner and under the conditions described in the permit application and supporting documents as approved by the cabinet in the permit.
- 3) The permit shall not be construed as authorizing an operation that is otherwise in contravention of a statute, administrative regulation, ordinance, or order of a governmental unit.
- 4) The permit shall not be construed to authorize the creation or maintenance of a nuisance.
- 5) The permit shall be subject to revocation or modification by the cabinet as established in KRS Subchapter 224.10-100.
- 6) Commencement of a routine point source discharge shall result in a permit revocation.
- 7) A permit shall be issued in accordance with the provisions of KRS Chapter 224 and 401 KAR Chapters 4 through 11. Issuance of the permit shall not relieve the permittee from the responsibility of obtaining any other permits or licenses required by the cabinet and other state, federal, and local agencies.
- 8) If applicable, the waste materials removed from the settling basin shall be disposed of according to the requirements of the Division of Waste Management in 401 KAR Chapters 30 through 49.
- 9) Land application that results in runoff to a stream or ponding in a sinkhole shall be prohibited.
- 10) Waste storage lagoons shall not be constructed in sinkholes (natural closed surface depressions) unless approved by the cabinet

### **1.3 Standard Conditions**

The following standard conditions apply to all facilities seeking coverage under this general permit.

- 1) **Coverage shall be subject at all times to revocation or modification by the Kentucky Energy and Environment Cabinet as set forth in Kentucky Revised Statutes (KRS) 224. Commencement of a routine discharge would necessitate such a revocation and would require the issuance of a Kentucky Pollutant Discharge Elimination System (KPDES) permit.**
- 2) This permit shall not be construed as authorizing any operation that is otherwise in contravention of any law, regulation, ordinance or order of any governmental unit.
- 3) This permit shall not be construed as authorizing the creation or maintenance of a nuisance; to relieve the permittee from any penalty for violation of any law or regulation.
- 4) Any spill or discharge to waters of the Commonwealth shall be reported to the Department for Environmental Protection with 24 hours by calling the appropriate Division of Water Regional Office or if after hours the Cabinet's Environmental Response Line at 1 (800) 928-2380.

### **1.4 Special Conditions**

#### **1.4.1 Closed Loop Systems (CLS)**

- 1) The permittee shall on annual basis or in the event of a modification of the process characterize the reject water and provide notification to DOW of changes to the pollutants or pollutant concentrations.
- 2) In the event the characterization indicates that the reject water is now a “listed” or “characteristic” waste the permittee shall notify the Division of Waste Management and obtain an individual KNDOP for the operation.
- 3) The permittee shall maintain an operational log of the system that shall include following information:
  - a. The dates of removal of wastewater from the system,
  - b. The volumes of wastes removed from the system
  - c. The ultimate disposition of the wastewater removed
  - d. The dates and results of wastewater analysis
  - e. The log shall be made available to cabinet personnel upon request and shall be maintained for a minimum of three (3) years.

#### **1.4.2 Spray Irrigation Systems (SIS)**

##### **1.4.2.1 All SISs**

The following conditions apply to all SISs:

- 1) Unless otherwise approved by DOW the maximum application rate of effluent shall not exceed 1,000 gpd per acre.
- 2) The soil of a spray irrigation field shall have an average saturated hydraulic conductivity of not less than six-tenths (0.6) inch per hour, as established by either the saturated hydraulic conductivity value provided by an NRCS soil survey; or a saturated soil test of the spray field.
- 3) The spray field shall have less than a six (6) percent slope unless the average saturated hydraulic conductivity for the spray field is more than six (6) inches per hour; and the average soil depth of the spray field is at least twenty-four (24) inches.
- 4) The spray irrigation field shall have perennial vegetative growth on no less than 95% of the area to promote absorption, evaporation, and transpiration.
- 5) A twenty (20) foot buffer zone shall be provided between the outer boundary of the spray field and the property boundary or the applicant shall provide screening to inhibit the transport of aerosols and windborne spray across property boundaries.
- 6) Effluent applied to the spray irrigation field shall be contained on the spray field.
- 7) The permittee shall collect and analyze samples of the wastewater prior to spraying twice per year.
- 8) The permittee shall maintain an operational log of the system that includes the following information:
  - a. The dates wastewater was sprayed,
  - b. The application rates and duration of spraying
  - c. The weather conditions prior to, during and after spraying
  - d. The soil conditions prior to and after spraying
- 9) The operational log and the analysis of the wastewater shall be made available to cabinet personnel upon request and shall be maintained for a minimum of three (3) years.

##### **1.4.2.2 SLSs Spraying Domestic Sewage**

In addition to the requirements of Section 1.4.2.1 All SISs, the following conditions shall apply to SLSs that spray domestic sewage:

- 1) No portion of the spray field shall be closer than 200 feet from an existing dwelling.
- 2) No portion of a spray field shall be closer than the minimum setback requirements for a leach bed as established in 902 KAR 10:085, Section 8.
- 3) Effluent derived from a wastewater that contained human waste shall not be applied to an area in active production of food for human consumption.
- 4) The wastewater treatment plants and collection systems shall be operated by a certified operator of appropriate classification in accordance with the requirements of 401 KAR 11:001 through 11:060.

##### **1.4.2.3 Quality Requirements**

###### **1.4.2.2.1 Non-process Wastewaters**

To protect the environment and human health the permittee shall ensure any biocide or corrosion inhibitors added to these types of wastewaters are neutralized prior to land applying.

**1.4.2.3.2 Biochemically Degradable Wastes**

- 1) Shall receive treatment sufficient to achieve the following effluent limitations prior to spraying:

Parameter	30-day average	7-day average
Biochemical Oxygen Demand (5 day)	30 mg/l	45 mg/l
Total Suspended Solids	30 mg/l	45 mg/l

- 2) Shall receive disinfection prior to being sprayed

**1.4.2.4 Endangered or Threatened Species**

- 1) The quality of the wastewaters applied shall not cause or contribute to the taking of any endangered or threatened species listed pursuant to the Endangered Species Act of 1983 as amended (16 USC 1531 et seq.) or result in the destruction or adverse modification of critical habitat.
- 2) The installation or operation of a SLS shall not cause or contribute to the taking of any endangered or threatened species listed pursuant to the Endangered Species Act of 1983 as amended (16 USC 1531 et seq.) or result in the destruction or adverse modification of critical habitat.

**1.4.2.5 Groundwater Protection Plan (GPP)**

A Groundwater Protection Plan (GPP) shall be development and implemented within 90 days of coverage under this general permit. The practices established in the GPP are enforceable conditions of KNDOP.

**1.4.2.6 Best Management Practices Plan (BMPP)**

A Best Management Practices Plan (BMPP) shall be development and implemented within 90 days of coverage under this general permit.

**2. SCHEDULE OF COMPLIANCE**

The permittee shall achieve compliance with all the requirements of this permit upon written notification of coverage by the DOW.

**3. OTHER REQUIREMENTS**

Operations authorized by this permit shall remain consistent with those described on the initial permit application. An updated Short Form ND shall be submitted for any change in the method of waste treatment, final disposition, or land application area. After reviewing the updated application, the DOW may require the permittee to submit an application for an individual permit.

**4. PERMIT TRANSFERS**

If a permitted facility changes owners, the new operator must submit a Change of Ownership Form (Form DEP 7032-CO) to the DOW in order to transfer coverage under this permit. Permit transfers are only permissible when there are no operational changes. Alternatively, the previous operator may terminate coverage under this permit by submitting a written request to do so. The new operator must submit a permit application in accordance with the requirements of this permit.

**5. PERMIT TERMINATIONS**

If a permitted facility is no longer in operation the permittee may terminate coverage under this permit by submitting a written request to do so.

**6. CONTINUATION OF COVERAGE**

If this General Permit expires prior to reissuance by DOW those closed loop and spray irrigation systems utilized by commercial or industrial operations that have received authorization shall be administratively continued until reissuance of the General Permit. New coverages shall not be granted until the General Permit is reissued.

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<p><b>Columbia Regional Office</b>                  2751 Campbellsville Rd.                  Columbia, Kentucky 42728                  (270) 384-4734 Fax (270) 384-5199                  Attn: Sara Sproles</p> <p>Adair Green Metcalfe Russell                  Boyle LaRue Monroe Taylor                  Casey Lincoln Nelson Washington                  Clinton Marion Pulaski Wayne                  Cumberland</p>	<p><b>Louisville Regional Office</b>                  9116 Leesgate Road                  Louisville, Kentucky 40222-5084                  (502) 429-7122 Fax (502) 429-7125                  Attn: Charlie Roth</p> <p>Breckinridge Meade                  Bullitt Oldham                  Hardin Shelby                  Jefferson Spencer</p>
<p><b>Florence Regional Office</b>                  8020 Veterans Memorial Drive, Suite 110                  Florence, Kentucky 41042                  (859) 525-4923 Fax (859) 525-4157                  Attn: Todd Giles</p> <p>Boone Gallatin Owen                  Bracken Grant Pendleton                  Campbell Henry Trimble                  Carroll Kenton</p>	<p><b>Madisonville Regional Office</b>                  Madisonville State Office Building                  625 Hospital Drive                  Madisonville, Kentucky 42431-1683                  (270) 824-7529 Fax (270) 824-7070                  Attn: Randy Thomas</p> <p>Caldwell Daviess Hopkins Todd                  Christian Hancock McLean Union                  Crittenden Henderson Muhlenberg Webster</p>
<p><b>Frankfort Regional Office</b>                  200 Fair Oaks Lane, 3rd Floor                  Frankfort, Kentucky 40601                  (502) 564-3358 Fax (502) 564-5043                  Attn: Massoud Shoa</p> <p>Anderson Fayette Jessamine Powell                  Bourbon Franklin Madison Scott                  Clark Garrard Mercer Woodford                  Estill Harrison Nicholas</p>	<p><b>Morehead Regional Office</b>                  525 Hecks Plaza Drive                  Morehead, Kentucky 40351                  (606) 783-8655 Fax (606) 783-8659                  Attn: Danny Fraley</p> <p>Bath Fleming Mason Robertson                  Boyd Greenup Menifee Rowan                  Carter Lawrence Morgan                  Elliott Lewis Montgomery</p>
<p><b>Hazard Regional Office</b>                  233 Birch Street, Suite 1                  Hazard, Kentucky 41701                  (606) 435-6022 Fax (606) 435-6025                  Attn: Damon White</p> <p>Breathitt Knott Magoffin Pike                  Floyd Lee Martin Wolfe                  Johnson Letcher Perry</p>	<p><b>Paducah Regional Office</b>                  130 Eagle Nest Dr.                  Paducah, Kentucky 42003                  (270) 898-8468 Fax (270) 898-8640                  Attn: Jennifer Burnett</p> <p>Ballard Fulton Livingston McCracken                  Calloway Graves Lyon Trigg                  Carlisle Hickman Marshall</p>