**July 17, 2022**

**To: Dr. Karthik Kumarasamy, Arizona Department of Environmental Quality**

**From: Dr. Rakesh Govind, NextGen Septic, LLC**

**Subject: Application for Treatment Product Listing – NextGen Septic's Zero Liquid Discharge**

**I have attached a permit which was issued for a Zero Liquid Discharge System, that was installed in 2017 for a house located in Kentucky. I have also attached a letter from the previous home owner (the house was recently sold in 2022), Mr. John Perry, regarding the performance of the Zero Liquid Discharge Treatment system at his house.**

**A full schematic of the plan design was included on Pages 28 to 32 in the Product Listing Application. Page 35 shows a serial combination of the drawings shown on Pages 28 to 32.**

**Flowrates and other operating parameters of the Zero Liquid Discharge Process have been tabulated on Pages 36 and 37 of the Product Listing Application.**

**Information on Operation and Maintenance are included on Pages 71 to 85 in the Product Listing Apoplication.**

**I have attached the Product Listing Application to this email so that the pages mentioned above can be easily accessed.**

**Let me know if you need anything else regarding the Product Listing Application.**

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

DIVISION OF WATER
300 SOWER BLVD
FRANKFORT, KY, 40601

October 1, 2018

John Perry
PO Box 307
Alexandria, KY 41001

Re: KPDES Permit No.: KYG402612
AI No.: 137723
Perry Residence
Campbell County

Dear Mr. Perry:

Enclosed are two (2) permits for your residence; 1) the "Kentucky General Permit for Discharges from Individual Residences" and 2) the associated construction permit. The general permit authorizes discharge of treated wastewater from your individual residence under the conditions listed in the enclosed permit. Coverage will remain effective for the dates indicated on the cover page. The construction permit authorizes construction/installation of your wastewater treatment system.

Please take specific note of the following requirements of the enclosed construction permit:

- Construction of this system must be completed within one (1) year of the approval date of the construction permit. If construction is not completed within a year and it is your intention to install the system, you must request an extension of the permit prior to the expiration date.

- After the construction of this system is completed, within thirty (30) days you must submit a written certification to the Division of Water that the facility has been constructed in accordance with the approved plans and specifications and approval conditions. Complete the enclosed form and return it to the address indicated at the bottom of the form.

Please take specific note of the following requirements of the enclosed discharge permit:

- Your sewage treatment plant must be operated at all times by a properly certified Kentucky wastewater system operator. If the certified operator responsible for your facility changes or you do not have a properly certified operator, please contact the Operator Certification Section at (502) 564-3410. Information can be provided by this office on the regulatory requirements for certification and/or certified operators currently living in the surrounding area.

- Permittee must maintain a maintenance contract (MC) with a certified operator or develop and implement an operation and maintenance (O&M) plan if the homeowner is the operator.

- In order to ensure the OSWTS is properly operating and producing the required effluent quality permittee is to refer to the Operational Requirements in Section 3 of the permit.

In addition, the provisions of your permits are established to protect human health and the environment. These requirements have been established to protect you and your family, as well as your neighbors. **You may be subject to enforcement action, including fines, if you fail to comply with these requirements**.

If you have any questions regarding these permits, please contact the Surface Water Permits Branch at (502) 564-3410 or SWPBSupport@ky.gov.

Sincerely,

**Peter T. Goodmann, Director**
Division of Water

PTG: GJG: BKM
Enclosure

c: Campbell County Health Department
Division of Plumbing

**COMMONWEALTH OF KENTUCKY**
**ENERGY AND ENVIRONMENT CABINET**
**DEPARTMENT FOR ENVIRONMENTAL PROTECTION**
**DIVISION OF WATER**

**TO:** John Perry

**ADDRESS:** PO Box 307 (Street or PO Box) Alexandria (City) KY (State) 41001 (Zip Code)

Pursuant to your application submitted to this office on August 28, 2018, together with engineering plans, specifications, and other supporting data, the Cabinet authorizes the issuance of this:

**CONSTRUCTION PERMIT**

Therefore, by authority of Kentucky Revised Statutes Chapter 224, etc., you are authorized to construct Sewage Treatment Works and/or Industrial Water Treatment Works at:

Perry Residence, Murnan Road, Cold Spring
(Name of Facility, Location, City)

UT to Duck Creek
(Receiving Stream)

Campbell
(County)

In accordance with the plans, specifications, and other information submitted in your application. The permittee is also subject to the following conditions:

This permit is limited to the construction of a sewage treatment plant to serve an individual family residence. The plant shall be a Next Gen system with ozone disinfection and a Liberty Commercial pump 1200 GPD

**SEE FOLLOWING ADDITIONAL CONDITIONS**

**THE ISSUANCE OF THIS PERMIT BY THE DIVISION OF WATER DOES NOT RELIEVE THE APPLICANT OF THE REQUIREMENT OF OBTAINING A KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM (KPDES) PERMIT UNDER KRS 224 OR OF ANY ADDITIONAL TREATMENT REQUIREMENT UNDER KRS 224.**

Construction of the facility specified herein shall be completed within twelve (12) months. This Construction Permit shall be null and void, after twelve (12) months. Additional time may be requested to extend the permit. If construction has not begun within twelve (12) months of the issuance date of this construction permit, a new permit must be obtained. A single twelve (12) month extension may be granted.

Issued this 1st day of October, 2018.

Peter T. Goodmann, Director
Division of Water

PTG: GJG :BKM

c: Campbell County Health Department
Division of Plumbing


Perry Residence
KYG402612 AI# 137723
Legend
KYG402612
KYG402612
Google Earth
© 2016 Google
200 ft
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## ADDITIONAL CONDITIONS

1. Within 30 days of the completion of construction of this system, the permittee shall submit a written certification to the Division of Water that the facility has been constructed and tested in accordance with the approved plans and specifications and approval conditions. Failure to certify may result in penalty assessments.

2. There shall be no deviations from the plans and specifications submitted with the application or from the conditions specified unless authorized in writing by the Division of Water.

3. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by the Division of Water and other state, federal, and local agencies.

4. The issuance of a permit by the Division of Water does not convey any property rights of any kind or any exclusive privilege.

5. All rights of inspection by representatives of the Division of Water are reserved.

6. If a sewer system served by a regional facility becomes available, the wastewater treatment plant shall be eliminated and the influent flow shall be diverted to the regional facility.

7. A water supply with suitable backflow prevention shall be provided to facilitate cleaning and maintenance of the wastewater treatment plant.

8. Fencing and/or other adequate protection shall be provided around the wastewater treatment plant.

9. An all-weather access road shall be provided to the wastewater treatment plant.

10. The sand used to construct the sand filtration trench should be clean, washed sand and should be graded for size. The sand grains should be all coarse or all medium size, with no fines, no soil, and no mixed sizes.

11. The permittee shall ensure that the effluent is of satisfactory quality to prevent violations of the standards in 401 KAR Chapter 5. If violations of the standards of 401 KAR Chapter 5 result from the discharge of the treated effluent, the owner shall provide additional treatment or an extension of the effluent line.

12. Water quality standards (401 KAR 10:031, Section 4) govern the treatment requirements; the following standards apply:

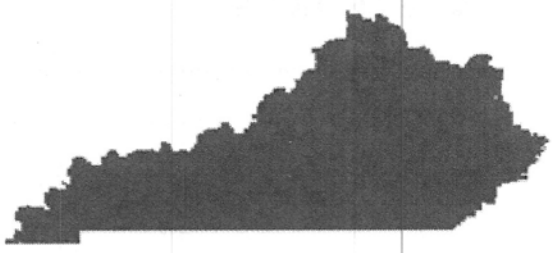
    a. Dissolved Oxygen in the stream; 5 mg/l or higher.
    b. Un-ionized Ammonia in the stream; 0.05 mg/l or less.

13. The treatment requirements were determined utilizing a model specifically designed for this purpose and for Kentucky streams. The required treatment level can be met with the following effluent concentrations:

| | |
|---|---|
| $BOD_5$ | 30 mg/l |
| Total Suspended Solids | 30 mg/l |
| Ammonia Nitrogen | 20 mg/l |
| Dissolved Oxygen | 2 mg/l |

14. Additional effluent limitations and water quality standards are contained in the Division of Water Regulations.

# KPDES



**KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM**

**PERMIT**

## AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

**PERMIT NO.:** KYG400000

**AI NO.:** 35050

**Pursuant to authority in Kentucky Revised Statue (KRS) 224 and Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs);**

On-Site Wastewater Treatment System (OSWTS) from single family residences

**are authorized to discharge from facilities located**

Within any of the 120 counties of the Commonwealth of Kentucky

**to receiving waters named**

Those water bodies of the Commonwealth that comprise the Mississippi and Ohio River basins and sub-basins within the political and geographic boundaries of Kentucky

**in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.**

This permit shall become effective on September 1, 2018.

This permit and the authorization to discharge shall expire at midnight, August 31, 2023.

August 31, 2018
**Date Signed**

**Peter T. Goodmann, Director**
**Division of Water**

## THIS KPDES PERMIT CONSISTS OF THE FOLLOWING SECTIONS.

# SECTION 1

## EFFLUENT QUALITY REQUIREMENTS

## 1. EFFLUENT QUALITY REQUIREMENTS

On-site domestic wastewater treatment systems (OSWTSs) serving an individual family residence (IFR) are required to meet specific effluent quality requirements. **Routine effluent monitoring is not required provided the permittee complies with the operational requirements detailed in Section 3 of this permit.**

### 1.1. Existing OSWTSs

The requirements of this section apply to those OSWTSs that were installed prior to January 1, 2013 that may or may not have been granted coverage under KYG400000. Existing facilities are not required to up-date to the requirements for new coverages unless the current system fails or must be replaced.

#### 1.1.1. Surface Water Discharges

Existing OSWTSs discharging to surface waters shall meet the following effluent quality requirements.

| TABLE 1: EXISTING SURFACE WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $BOD_5$ (mg/l) | N/A | 30 | 45 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | N/A | 20 | 30 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 2.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |

#### 1.1.2. Spray Irrigation

Existing OSWTSs land applying treated effluent shall meet the following effluent quality requirements.

| TABLE 2: EXISTING SPRAY IRRIGATION SYSTEMS | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| $BOD_5$ (mg/l) | N/A | 30 | 45 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |

### 1.2. New/Replacement OSWTSs

The requirements of this section apply to all new/replacement OSWTSs installed after the effective date of this permit

#### 1.2.1. Surface Water Discharges

OSWTSs that discharge to surface waterbodies other than those addressed under Subsections 1.2.1.1 and 1.2.1.2 shall meet the following effluent quality requirements.

| TABLE 3: SURFACE WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $BOD_5$ (mg/l) | N/A | 30 | 45 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | N/A | 20 | 30 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 2.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |

### 1.2.1.1. Lake Discharges

OSWTSs that discharge to lakes shall meet the following effluent quality requirements.

| TABLE 4: LAKE DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $CBOD_5$ (mg/l) | N/A | 10 | 15 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | | | | |
| May 1 – October 31 | N/A | 2.0 | 3.0 | N/A |
| November 1 – April 30 | N/A | 5.0 | 7.5 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 7.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |
| Total Phosphorus (mg/l) | N/A | 1.0 | 2.0 | N/A |

### 1.2.1.2. Special Use Water Discharges

Special Use Waters are those waterbodies that are designated as Coldwater Aquatic Habitats (CAHs) or as Outstanding State Resource Waters (OSRWs), or are categorized as Exceptional Waters (EWs). OSWTSs that discharge to Special Use Waters shall meet the following effluent quality requirements.

| TABLE 5: SPECIAL USE WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $CBOD_5$ (mg/l) | N/A | 10 | 15 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | | | | |
| May 1 – October 31 | N/A | 2.0 | 3.0 | N/A |
| November 1 – April 30 | N/A | 5.0 | 7.5 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 7.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |

### 1.2.1.3. Impaired Waters

OSWTSs that discharge to Impaired Waters, where the pollutants of concern are associated with domestic wastewaters and an approved Total Maximum Daily Load (TMDL) has not been developed, shall meet the following effluent quality requirements.

| TABLE 6: IMPAIRED WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $CBOD_5$ (mg/l) | N/A | 10 | 15 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | | | | |
| May 1 – October 31 | N/A | 2.0 | 3.0 | N/A |
| November 1 – April 30 | N/A | 5.0 | 7.5 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 7.0 | N/A | N/A | N/A |

| TABLE 6: IMPAIRED WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |
| Total Phosphorus (mg/l)[2] | N/A | 1.0 | 2.0 | N/A |
| [2]The requirements for Total Phosphorus apply only if the impairment is due to nutrients, or organic enrichment and low dissolved oxygen. | | | | |

OSWTSs that discharge to Impaired Waters, where the pollutants of concern are associated with domestic wastewaters and an approved Total Maximum Daily Load (TMDL) has been developed, shall meet the effluent quality requirements in the preceding table if these requirements are consistent with the TMDL. If the requirements are not consistent with the TMDL, an individual permit will be required.

### 1.2.2. Spray Irrigation

OSWTSs that land apply treated effluent shall meet the following effluent quality requirements.

| TABLE 7: SPRAY IRRIGATION | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| $BOD_5$ (mg/l) | N/A | 30 | 45 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |

### 1.3. Standard Effluent Requirements

The discharges to waters of the Commonwealth shall not produce floating solids, visible foam or a visible sheen on the surface of the receiving waters.

# SECTION 2

## DESIGN AND CONSTRUCTION REQUIREMENTS

## 2. DESIGN AND CONSTRUCTION REQUIREMENTS

### 2.1. All OSWTSs

The minimum treatment provided by all new and replacement OSWTSs shall include an NSF Certified Wastewater Treatment Unit capable of meeting NSF/American National Standards Institute (ANSI) Standard 40 for Residential Wastewater Treatment Systems and disinfection by either chlorination or ultraviolet. Additional treatment shall be required depending on the receiving stream or disposal method.

All new and replacement OSWTSs shall meet the setbacks summarized in the following table:

| TABLE 8: MINIMUM SETBACK DISTANCES | |
|---|---|
| **Structure or Topographic Feature** | **Minimum Distance (Ft.) from OSWTS** |
| Property lines | 5 |
| Building foundations | 10 |
| Basements | 20 |
| Basements (Downslope from system) | 20 |
| Wells | 50 |
| Wells (Properly plugged/abandoned) | 20 |
| Cisterns | 50 |
| Cisterns (Upslope from system with bottom at higher elevation than system) | 10 |
| Natural Lakes or Impoundments (Shoreline) | 25 |
| Streams | 25 |
| Springs (Upslope from system) | 25 |
| (Upslope with curtain interceptor drain) | 10 |
| (Downslope from system) | 50 |
| Drainage Ditches, Cutbanks (Downslope) | 10 |
| Curtain or vertical drain (Upslope and Sides) | 10 |
| Curtain or vertical drain (Downslope) | 25 |
| Sinkhole Throat (Open) | 70 |
| Buried Water Lines or Utility Lines | 10 |
| Utility Easements | 10 |
| Driveways, parking lots, or paved areas | 10 |
| Geothermal Vertical | 50 |
| Geothermal Horizontal (Downslope) | 10 |
| Inground swimming pools | 10 |
| Mine Openings and Air Shafts | 50 |
| Livestock pens, feed lots, corrals, etc. | 10 |

The OSWTS shall be constructed in accordance with DOW approved plans and specifications. No OSWTS shall be constructed such that any of the treatment units cannot be fully inspected or accessed for necessary maintenance.

### 2.2. Spray Irrigation

In addition to the minimum treatment requirements of Section 2.1, OSWTSs that spray irrigates the treated effluent shall comply with the following conditions:

1. The OSWTS shall be equipped with a minimum of three (3) sprinkler heads;

2. A minimum surface area of 0.19 acres with at least 12 inches of soil having an infiltration rate between 0.6 and 6.0 inches/hour (10 and 100 micrometers/second) shall be provided for spray fields with slopes of less than or equal to six (6) percent;
3. A minimum surface area of 0.38 acres with at least 24 inches of soil having an infiltration rate greater than 6.0 inches/hour (100 micrometers/second) shall be provided for spray fields with slopes greater than six (6) percent;
4. The spray field shall not be within 200 feet of an existing dwelling;
5. A twenty (20) foot buffer zone shall be maintained between the outer boundary of the spray field and the permittee's property boundary;
6. At least ninety-five (95) percent of the area of the spray irrigation field shall have sufficient perennial vegetative growth to promote absorption, evaporation, and transpiration;
7. The spray field shall have a temporal or physical barrier that inhibits human contact with the airborne spray.
8. Effluent from the spray irrigation field shall be contained on the owner's property.
9. Effluent derived from a wastewater that contained human waste shall not be applied to an area in active production of food for human consumption.

### 2.3. Discharges to Surface Waters

In addition to the minimum treatment requirements of Section 2.1, OSWTSs that discharge to any surface waters shall include the following additional treatment units: (1) for all surface waters: filtration and de-chlorination; (2) for surface waters that are lakes, special use waters, and impaired waters: post aeration shall be provided.

#### 2.3.1. Outfall Signage

For OSWTSs discharging to the Ohio River the permittee shall comply with the permanent marker requirements of Part V, Section A 3 of ORSANCO's Pollution Control Standards.

For OSWTSs discharging to waters other than the Ohio River the permittee should place and maintain a permanent marker at the discharge location.

#### 2.3.2. Discharge and Monitoring Point Accessibility

In order for the operator or authorized agency personnel to inspect and, if necessary, collect effluent samples the OSWTS's discharge point shall be readily and safely accessible.

# SECTION 3

## OPERATIONAL REQUIREMENTS

## 3. OPERATIONAL REQUIREMENTS

The operational requirements for all OSWTSs serving individual family residences include: (1) operation and maintenance of the plant by a certified operator; (2) a maintenance contract or, if the permittee is the operator, an Operation and Maintenance (O&M) plan; and (3) prohibition of disposal of non-domestic wastes.

### 3.1. Certified Operator

The operation and maintenance of an OSWTS serving an individual family residence shall be performed by a certified wastewater treatment plant operator who has received a certificate from the Energy and Environment Cabinet (EEC) or a resident homeowner. Any class of certified wastewater treatment plant operator may operate and maintain an OSWTS. An uncertified homeowner may only operate an OSWTS that is for their current residence and serves only one residence. The operator shall have the responsibility of inspecting the OSWTS and performing required maintenance to ensure the OSWTS is functioning within the design requirements and producing the required effluent quality.

### 3.2. Maintenance Contract/Operation & Maintenance Plan

In order to ensure the OSWTS is properly operating and producing the required effluent quality, the permittee shall enter into a Maintenance Contract (MC) with an EEC certified wastewater treatment plant operator, or develop and implement an Operation & Maintenance (O&M) Plan if the homeowner is the operator.

The MC/O&M plan shall establish the frequency the operator shall conduct routine inspections of the OSWTS. The following minimum inspection frequencies are required:

a) Newly constructed/installed units or replacement units shall be inspected monthly until the unit is consistently producing the required effluent quality, then quarterly thereafter;
b) OSWTSs that discharge to surface water bodies other than lakes, special use waters, or impaired waters shall be inspected quarterly;
c) OSWTSs that discharge to lakes, special use waters, or impaired waters shall be inspected monthly; and
d) OSWTSs that spray irrigate the treated effluent shall be inspected once every six months.

The MC/O&M plan shall describe the items to be addressed during an inspection including the performance of routine maintenance. At a minimum the operator shall:

a) Check each component of the OSWTS to verify that is operating as designed;
b) Check the discharge structure to ensure it is not clogged with debris;
c) Fill the tablet chlorinator with fresh chlorine tablets; and
d) Clean and make minor repairs as necessary

The results of the inspection(s) and any maintenance performed shall be documented by the operator on an Individual Family Residence OSWTS Inspection Report. This form is available on KDEP's forms library site at: http://dep.ky.gov/formslibrary/Pages/default.aspx. The permittee shall submit copies of each inspection report no later than thirty (30) calendar days from the date of the inspection to the Division of Water at the address listed below.

Division of Water
Surface Water Permits Branch
Permits Support Section
300 Sower Boulevard
Frankfort, Kentucky 40601
Attention: DMR Coordinator

### 3.3. Disposal of Non-Domestic Wastes

The pass through or non-treatment by the OSWTS of chemicals or compounds which may injure, be chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life is not desirable. Materials such as acids, caustics, herbicides, household chemicals or cleansers, insecticides, lawn chemicals, non-biodegradable products, paints, pesticides, pharmaceuticals, and petroleum based products may not be treatable by the OSWTS and should not be introduced to the system. Other environmentally sound methods for disposal of these materials should be utilized. The permittee should educate users of its system that introduction of such chemicals or compounds could result in an adverse environmental impact and provide the users with alternative disposal measures.

# SECTION 4

## OTHER REQUIREMENTS

## 4. OTHER REQUIREMENTS

### 4.1. Administrative Continuation

In the event this general permit expires prior to reissuance by KDOW the conditions and requirements of this version of KYG40 shall continue in effect until KDOW reissues the permit. However new or expanded coverages cannot be authorized until the permit is reissued.

### 4.2. Antidegradation

For those discharges subject to the provisions of 401 KAR 10:030 Section 1(3)(b)5, the permittee shall install, operate, and maintain wastewater treatment facilities consistent with those required in Sections 1 and 2 of this permit.

### 4.3. Connection to a Comprehensive Sewer System

The treatment units authorized by this general permit are temporary and in no way supersede the need to connect to a comprehensive sewer system. For any treatment unit with a design capacity equal to or greater than 1,000 gallons per day, the permittee will eliminate the system and will connect to a comprehensive sewer system when it becomes available as defined in 401 KAR 5:002, provided such system can adequately treat the wastes.

### 4.4. Notice of Intent

Owners of individual family residences seeking authorization to construct and operate a new OSWTS, to replace an existing failing OSWTS, or to renew an existing coverage shall use the currently available form, located at: http://water.ky.gov/permitting/Documents/GPWeb/KYG40PermitPage.pdf. KDOW shall not process any NOI that is incomplete, inaccurate, or in an incorrect format.

#### 4.4.1. New or Replacement OSWTSs

For new or replacement OSWTSs for which authorization to construct and operate is being sought, the following items are to be included with the NOI-IFR:

1. USGS Topographic Map marked to identify facility location and discharge point;
2. Specifications of Treatment System, including drawings of all components of the WWTP including, if applicable, spray field;
3. Site Plan showing layout of residence, components of treatment system in conjunction with dwelling, property boundaries, spray field, and receiving stream. The plan must show the positions of all dwellings within 200 feet of the treatment system (include measurements and distance from residence), and location of drinking water line or potable water source;
4. Copies of the Department for Public Health Onsite Sewage Disposal System Site Evaluation (Form DFS-321) and Onsite Sewage Agency Referral (Form DFS-405);
5. Maintenance Agreement or Operation and Maintenance (O&M) Plan;
6. If the property is located within a regional facility planning area, submit a letter from the planning authority (municipality, sanitation district, etc.) stating that connection to a regional facility is not available and the proposed treatment system is compatible with the regional facility plan; and
7. $450 Construction Permit Fee (Your check must be made payable to KENTUCKY STATE TREASURER)

#### 4.4.2. Renewal of Coverage

For existing OSWTSs for which authorization to operate is being sought, the following items are to be completed on and included with the NOI-IFR:

1. Sections I, IV, and V of the NOI-IFR; and
2. Maintenance Agreement or Operation and Maintenance (O&M) Plan.

#### 4.4.3. NOI Contents

The NOI-IFR is comprised of the following sections: (1) Purpose of the NOI, (2) Owner Information, (3) Treatment System Information, (4) Enclosures, (5) Certified Operator Information, and (6) Certification.

#### 4.4.4. NOI Submission Deadlines

Owners of individual family residences seeking authorization to construct and operate a new or replacement OSWTS shall submit the NOI and supporting information a minimum of 60 days prior to proposed commencement of construction.

Owners of individual family residences seeking continuation of existing coverages shall submit an updated NOI-IFR within 90 days of the effective date of the permit to renew the coverage.

### 4.5. Other Permits

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

### 4.6. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved in accordance with 401 KAR 5:050 through 5:080, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

### 4.7. Schedule of Compliance

The permittee shall attain compliance with all requirements of this permit on the effective date of this permit unless otherwise stated.

Permittees shall meet conditions of the permit addressing new plants within the shortest time period feasible; but shall not exceed ninety (90) days after the start-up of the plant.

# SECTION 5

## STANDARD CONDITIONS

## 5. STANDARD CONDITIONS

The following conditions apply to all KPDES permits.

### 5.1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of KRS Chapter 224 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Any person who violates applicable statutes or who fails to perform any duty imposed, or who violates any determination, permit, administrative regulation, or order of the cabinet promulgated pursuant thereto shall be liable for a civil penalty as provided at KRS 224.99.010.

### 5.2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit.

### 5.3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

### 5.4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### 5.5. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

### 5.6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

### 5.7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

### 5.8. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

### 5.9. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

### 5.10. Signatory Requirement

(1) All applications, reports, or information submitted to the Director shall be signed and certified pursuant to 401 KAR 5:060, Section 4 [40 CFR 122.22].

(2) KRS 224.99-010 provides that any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 shall be guilty of a Class D felony and upon conviction thereof, shall be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment, or by fine and imprisonment, for each separate violation. Each day upon which a violation occurs shall constitute a separate violation

### 5.11. Reporting Requirements

#### 5.11.1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(i) The alteration or addition to a permitted facility may meet one (1) of the criteria for determining whether a facility is a new source in KRS 224.16-050 [40 CFR122.29(b); or
(ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under KRS 224.16-050 [40 CFR 122.42(a)(1)].
(iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

#### 5.11.2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

#### 5.11.3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under KRS 224 [CWA; see 40 CFR 122.61; in some cases, modification or revocation and reissuance is mandatory].

#### 5.11.4. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

### 5.11.5. Twenty-four-Hour Reporting

(i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within twenty-four (24) hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See §122.41(g))
(B) Any upset which exceeds any effluent limitation in the permit.
(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within twenty-four (24) hours.

(iii) The Director may waive the written report on a case-by-case basis for reports under paragraph (l)(6)(ii) of this section if the oral report has been received within twenty-four (24) hours.

### 5.11.6. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 5.11.1, 5.11.2, 5.11.4, and 5.11.5, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 5.11.5.

### 5.11.7. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

## 5.12. Bypass

### 5.12.1. Definitions

(i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
(ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

### 5.12.2. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Section 5.12.1.

### 5.12.3. Notice

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.
(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section 5.11.5.

### 5.12.4. Prohibition of Bypass

(i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
(C) The permittee submitted notices as required under Section 5.12.3.

(ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three (3) conditions listed above in Section 5.12.3.

## 5.13. Upset

### 5.13.1. Definition

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

### 5.13.2. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Section 5.13.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

### 5.13.3. Conditions Necessary for a Demonstration of Upset

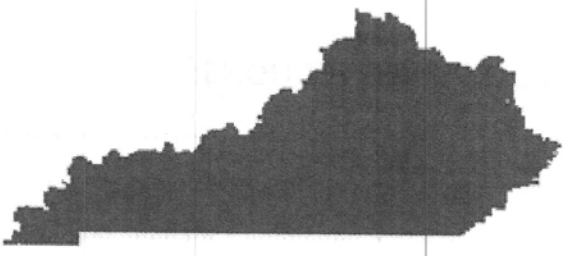
A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An upset occurred and that the permittee can identify the cause(s) of the upset;
(ii) The permitted facility was at the time being properly operated; and
(iii) The permittee submitted notice of the upset as required in Section 5.11.5; and
(iv) The permittee complied with any remedial measures required under Section 5.4.

### 5.13.4. Burden of Proof

In any enforcement preceding the permittee seeking to establish the occurrence of an upset has the burden of proof.

KPDES



KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

# FACT SHEET

**KPDES No.:** KYG400000
**AI No.:** 35050
General Permit For
On-Site Wastewater Treatment Systems (OSWTSs)
Serving Single Family Residences

**Date:** August 31, 2018

**Public Notice Information**

Public Notice Start Date: July 30, 2018

Comment Due Date: August 29, 2018

General information concerning the public notice process may be obtained on the Division of Water's Public Notice Webpage at the following address: http://water.ky.gov/Pages/PublicNotices.aspx.

**Public Notice Comments**
Comments must be received by the Division of Water no later than 4:30 PM on the closing date of the comment period. Comments may be submitted by e-mail at: DOWPublicNotice@ky.gov or written comments may be submitted to the Division of Water at 300 Sower Blvd, Frankfort, Kentucky 40601.

**Reference Documents**
A copy of this proposed fact sheet, proposed permit, and other supporting material may be obtained from the Department for Environmental Protection's Pending Approvals Search Webpage:
http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30.

**Open Records**
Copies of publicly-available documents supporting this fact sheet and proposed permit may also be obtained from the Department for Environmental Protection Central Office. Information regarding these materials may be obtained from the Open Records Coordinator at (502) 782-6849 or by e-mail at EEC.KORA@ky.gov.

## THIS KPDES FACT SHEET CONSISTS OF THE FOLLOWING SECTIONS:

# SECTION 1

## FACILITY INFORMATION

## 1. FACILITIES COVERED

This general permit authorizes the construction and operation of On-Site Wastewater Treatment Systems (OSWTSs) that serve single family residences.

### 1.2. Eligibility Requirements

OSWTSs meeting the following criteria are eligible for coverage under KYG40:

1) Serve a residence designed for occupation by a single family;
2) Are NSF Certified capable of meeting NSF/American National Standards Institute (ANSI) Standard 40 for Residential Wastewater Treatment Systems; and
3) Do not qualify for an on-site system authorized by the local Health Department.
4) Have not been determined by the Division of Water to be more appropriately addressed by an individual permit or alternate general permit.

### 1.3. Location

Within the 120 counties of the Commonwealth of Kentucky.

### 1.4. Treatment Provided

The treatment provided is specific to the facility and is dependent upon the final disposal method of the treated effluent, i.e. discharge to surface waters or spray irrigation. The minimum treatment provided by OSWTSs discharging to surface waters shall consist of extended aeration, filtration, disinfection and de-chlorination. Additional treatment for OSWTSs discharging to lakes, special use waters (Coldwater Aquatic Habitats (CAHs), Outstanding State Resource Waters (OSRWs), Exceptional Waters (EWs)), and impaired waters includes post aeration. OSWTSs spray irrigating shall treat the wastewater using extended aeration and disinfection.

### 1.5. Permitting Action

Reissuance of an existing general KDPES permit KYG400000 addressing the disposal of treated domestic wastewaters from single family residences using on-site wastewater treatment systems. All prior versions of KYG400000 will be superseded upon the issuance of this permit.

### 1.6. Pertinent Changes

This reissuance of general KDPES permit KYG400000 includes an elimination of the maximum design capacity that can be approved for coverage under this general permit for individual family residences. This elimination does not affect the requirement for appropriately designed components based upon treatment capacity size. The permit has also been modified to allow homeowners to act as the operator of a single residence in which they live without wastewater operator certification.

# SECTION 2

## RECEIVING WATER INFORMATION

## 2. RECEIVING / INTAKE WATERS

### 2.1. Receiving Waters

Those water bodies of the Commonwealth that comprise the Mississippi and Ohio River basins and sub-basins within the political and geographic boundaries of Kentucky.

### 2.2. Stream Segment Use Classifications

Includes all water bodies that have been designated by KDOW singularly or in combination thereof as: Warmwater Aquatic Habitat, Coldwater Aquatic Habitat, Primary Contact Recreation, Secondary Contact Recreation, Outstanding State Resource Water and/or Domestic Water Supply.

### 2.3. Stream Segment Antidegradation Categorization

Included are those water bodies which have been categorized as High Quality Waters, Impaired Waters, Exceptional Waters, or Outstanding National Resource Waters.

### 2.4. Stream Low Flow Condition

The 7-day, 10-year low flow conditions of the receiving streams can range from zero (0) cubic feet per second (cfs) to 111,000 cfs for the Mississippi River.

# SECTION 3

## REQUIREMENTS

## 3. REQUIREMENTS

### 3.1. Effluent Quality Requirements

The general permit contains effluent quality conditions for existing and new/replacement OSWTSs that discharge the treated effluent to surface waters and those that land apply the treated effluent via spray irrigation. Existing systems are those OSWTSs that have been previously permitted under prior versions of this general permit and are not subject to the requirements for discharges to Lakes, Special Use Waters, or Impaired Waters. However, an existing OSWTS that must be replaced will be considered as a new system.

The purpose of these conditions is to establish the level of treatment required of an OSWTS and to provide the permittee with design requirements. OSWTSs granted coverage under this general permit, must, at a minimum, be capable of meeting NSF/American National Standards Institute (ANSI) Standard 40 for Residential Wastewater Treatment Systems and provide some form of disinfection. Those OSWTSs that dispose of the final effluent by discharging to waters of the Commonwealth are required to de-chlorinate if chlorine disinfection is used and, in some cases, provide post aeration.

#### 3.1.1. Surface Water Discharges

OSWTSs that discharge to surface waterbodies shall meet the following effluent quality requirements.

| TABLE 1: SURFACE WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $BOD_5$ (mg/l) | N/A | 30 | 45 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | N/A | 20 | 30 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 2.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |

#### 3.1.1.1. Lake Discharges

OSWTSs that have a surface discharge to lakes shall meet the following effluent quality requirements.

| TABLE 2: LAKE DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $CBOD_5$ (mg/l) | N/A | 10 | 15 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | | | | |
| May 1 – October 31 | N/A | 2.0 | 3.0 | N/A |
| November 1 – April 30 | N/A | 5.0 | 7.5 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 7.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |
| Total Phosphorus (mg/l) | N/A | 1.0 | 2.0 | N/A |

### 3.1.1.2. Special Use Water Discharges

Special Use Waters are those waterbodies that are designated as Coldwater Aquatic Habitats (CAHs) or Outstanding State Resource Waters (OSRWs), or are categorized as an Exceptional Waters (EWs). OSWTSs that have a surface discharge to Special Use Waters shall meet the following effluent quality requirements.

| TABLE 3: SPECIAL USE WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $CBOD_5$ (mg/l) | N/A | 10 | 15 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | | | | |
| May 1 – October 31 | N/A | 2.0 | 3.0 | N/A |
| November 1 – April 30 | N/A | 5.0 | 7.5 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 7.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |

### 3.1.1.3. Impaired Waters

OSWTSs that have a surface discharge to Impaired Waters, where the pollutants of concern are associated with domestic wastewaters and an approved Total Maximum Daily Load (TMDL) has not been developed, shall meet the following effluent quality requirements.

| TABLE 4: IMPAIRED WATER DISCHARGES | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| pH (Standard Units) | 6.0 | N/A | N/A | 9.0 |
| $CBOD_5$ (mg/l) | N/A | 10 | 15 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |
| Ammonia (as mg/l of $NH_3N$) | | | | |
| May 1 – October 31 | N/A | 2.0 | 3.0 | N/A |
| November 1 – April 30 | N/A | 5.0 | 7.5 | N/A |
| E. Coli (colonies/100 ml) | N/A | 130 | 240 | N/A |
| Dissolved Oxygen (mg/l) | 7.0 | N/A | N/A | N/A |
| Total Residual Chlorine (mg/l) | N/A | 0.011 | 0.019 | N/A |
| Total Phosphorus (mg/l)[2] | N/A | 1.0 | 2.0 | N/A |
| [2]The requirements for Total Phosphorus apply only if the impairment is due to nutrients, or organic enrichment and low dissolved oxygen. | | | | |

OSWTSs that have a surface discharge to Impaired Waters, where the pollutants of concern are associated with domestic wastewaters and an approved Total Maximum Daily Load (TMDL) has been developed, shall meet the effluent quality requirements in the preceding table if these requirements are consistent with the TMDL. If the requirements above are not consistent with the TMDL, an individual permit will be required.

### 3.1.2. Spray Irrigation

OSWTSs that land apply treated effluent shall meet the following effluent quality requirements.

| TABLE 5: SPRAY IRRIGATION | | | | |
|---|---|---|---|---|
| Effluent Characteristic | Effluent Quality Requirements | | | |
| | Minimum | Monthly Average | Weekly Average | Maximum |
| $BOD_5$ (mg/l) | N/A | 30 | 45 | N/A |
| TSS (mg/l) | N/A | 30 | 45 | N/A |

### 3.2. Design and Construction Requirements

The Kentucky Administrative Regulations (KARs) that apply to OSWTSs require permits to be obtained for the construction, modification and operation of the system. The Division of Water issues separate construction and operational permits, typically concurrently. In the case of construction/installation of a new OSWTS replacing an existing OSWTS previously authorized by KYG400000, a separate construction permit will be required.

In addition to the effluent quality conditions specified in this section, the construction or installation of an OSWTS is subject to the following requirements:

1. The basic unit for a OSWTS shall consist of a NSF Certified Wastewater Treatment Unit capable of meeting NSF/ANSI Standard 40 for Residential Wastewater Treatment Systems and disinfection by chlorination, ultraviolet, or other disinfection allowed under 401 KAR 5:005 Section 11;
2. Meet the minimum setback distances specified in this section; and
3. The requirements specified in the Spray Irrigation subsection for those OSWTSs that spray irrigate the treated effluent; or
4. The requirements specified in the Discharge to Surface Waters subsection for those OSWTSs that discharge to surface waters.

#### 3.2.1. Minimum Setback Distances for OSWTSs

Table 6 lists the minimum setback distances between OSWTSs and a structure or topographic feature.

| TABLE 6: MINIMUM SETBACK DISTANCES | |
|---|---|
| Structure or Topographic Feature | Minimum Distance (Ft.) from OSWTS |
| Property lines | 5 |
| Building foundations | 10 |
| Basements | 20 |
| Basements (Downslope from system) | 20 |
| Wells | 50 |
| Wells (Properly plugged/abandoned) | 20 |
| Cisterns | 50 |
| Cisterns (Upslope from system with bottom at higher elevation than system) | 10 |
| Natural Lakes or Impoundments (Shoreline) | 25 |
| Streams | 25 |
| Springs (Upslope from system) | 25 |
| (Upslope with curtain interceptor drain) | 10 |
| (Downslope from system) | 50 |
| Drainage Ditches, Cutbanks (Downslope) | 10 |
| Curtain or vertical drain (Upslope and Sides) | 10 |
| Curtain or vertical drain (Downslope) | 25 |
| Sinkhole Throat (Open) | 70 |

| TABLE 6: MINIMUM SETBACK DISTANCES | |
|---|---|
| **Structure or Topographic Feature** | **Minimum Distance (Ft.) from OSWTS** |
| Buried Water Lines or Utility Lines | 10 |
| Utility Easements | 10 |
| Driveways, parking lots, or paved areas | 10 |
| Geothermal Vertical | 50 |
| Geothermal Horizontal (Downslope) | 10 |
| Inground swimming pools | 10 |
| Mine Openings and Air Shafts | 50 |
| Livestock pens, feed lots, corrals, etc. | 10 |

### 3.2.2. Spray Irrigation

In addition to the basic unit requirements applicable to all systems, an OSWTS that spray irrigates the treated effluent shall comply with the following additional conditions:

1. The spray system shall be equipped with a minimum of three (3) sprinkler heads;
2. The spray field shall have a minimum surface area of 0.19 acres with at least 12 inches of soil having an infiltration rate between 0.6 and 6.0 inches/hour (10 and 100 micrometers/second) for spray fields with slopes of less than or equal to six (6) percent;
3. The spray field shall have a minimum surface area of 0.38 acres with at least 24 inches of soil having an infiltration rate greater than 6.0 inches/hour (100 micrometers/second) for spray fields with slopes greater than six (6) percent;
4. The spray field shall not be within 200 feet of an existing dwelling;
5. A twenty (20) foot buffer zone shall be maintained between the outer boundary of the spray field and the permittee's property boundary;
6. At least ninety-five (95) percent of the area of the spray irrigation field shall have sufficient perennial vegetative growth to promote absorption, evaporation, and transpiration;
7. The spray field shall have a temporal or physical barrier that inhibits human contact with the airborne spray.
8. Effluent from the spray irrigation field shall be contained on the owner's property.
9. Effluent derived from a wastewater that contained human waste shall not be applied to an area in active production of food for human consumption.

### 3.2.3. Discharge to Surface Waters

In addition to the basic unit requirements applicable to all systems, OSWTSs that discharge to any surface water shall include the following additional treatment units: (1) for all surface waters: filtration and de-chlorination for systems with chlorine disinfection; (2) for surface waters that are lakes, special use waters, and impaired waters: post aeration shall be provided.

# SECTION 4

## JUSTIFICATION OF REQUIREMENTS

## 4. JUSTIFICATION OF REQUIREMENTS

The Kentucky Administrative Regulations (KARs) cited have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs). Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44], each federally or delegated state-issued NPDES permit shall include conditions meeting technology-based effluent limitations and standards and water quality standards and state requirements.

### 4.1. Effluent Quality

The effluent quality requirements are separated into those that apply to OSWTSs that dispose of the treated effluent through spray irrigation and those that discharge to waters of the Commonwealth. Pursuant to 401 KAR 5:005, Section 22(3) all OSWTS shall be capable of meeting the "secondary treatment" requirements of 401 KAR 5:045.

Section 2 of 401 KAR 5:045 defines secondary treatment as that level of treatment that results in an effluent quality that meets the minimum requirements in Table 7.

| TABLE 7: SECONDARY TREATMENT REQUIREMENTS | | |
|---|---|---|
| **Parameter** | **Monthly Average Concentration** | **Weekly Average Concentration** |
| Biochemical Oxygen Demand (5 days) ($BOD_5$) | 30 mg/l | 45 mg/l |
| Total Suspended Solids (TSS) | 30 mg/l | 45 mg/l |

Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)] KPDES permits are to include water quality-based effluent limitations (WQBELs) when necessary to protect water quality. The water quality standards applicable to this category of discharges are unionized ammonia (401 KAR 10:031, Section 4(1)(i)), dissolved oxygen (401 KAR 10:31, Section 4(1)(e)), total residual chlorine (401 KAR 10:031, Section 4(1)(k)) and pH (401 KAR 10:031, Section 4(1)(b)).

KDOW develops a waste load allocation (WLA) to determine the appropriate effluent limitations for $BOD_5$, ammonia ($NH_3H$), and dissolved oxygen (DO). The limits determined through the WLA process are representative of secondary, advanced secondary, or tertiary treatment applications. In the majority of cases OSWTSs that discharge to surface waters will be subject to effluent limits achievable through the application of secondary treatment. However, in the case of special use waters, lakes and impaired waters, higher levels of treatment are necessary to protect the quality of these waterbodies. In the case of special use waters the effluent limits are based on the application of advanced secondary treatment requirements which are characterized by the substitution of $CBOD_5$ for $BOD_5$, the application of seasonal limitations for $NH_3N$, and increased levels of DO. For lake discharges and discharges to impaired waters, potential nutrient problems require the imposition of phosphorus, thus necessitating the application of tertiary treatment requirements.

### 4.2. Design and Construction Requirements

The conditions imposed in Section 3 of this Fact Sheet are consistent with the requirements of 401 KAR 5:005, Sections 21 and 22. Section 22 establishes the primary design requirements for OSWTSs, the minimum lot size for OSWTS located in a residential subdivision, and minimum set back conditions. Section 21 establishes the spray field size, slope and soil average saturated hydraulic conductivity, and type of spray equipment for those OSWTSs proposing a spray irrigation system.

### 4.3. Operational Requirements

The current version of KYG400000 expired July 31, 2018. It imposed effluent limitations for the following parameters: Flow, $BOD_5$, TSS, $NH_3N$, E. Coli, pH, DO, and TRC. DOW has analyzed the Discharge Monitoring Reports (DMRs) submitted and has concluded that, as a whole, this category of dischargers has a poor history of compliance. Factors contributing to poor compliance include improper operation, lack of maintenance, cost of monitoring, etc.

A key factor in the proper operation of a wastewater treatment plant is the working condition of the plant and how well it has been maintained. Plants that are not well maintained cannot be operated as efficiently and may not produce the required effluent quality. Therefore it is imperative that routine maintenance be performed to ensure the plant is functioning at optimum levels. To that end DOW included conditions in the current permit requiring the permittee to enter into a maintenance contract with a qualified person such as a "certified operator" in lieu of quarterly monitoring. DOW has determined that with proper operation and maintenance performed by a qualified person an OSWTS should routinely produce effluent that meets the quality requirements imposed.

Pursuant to changes in KRS 224.73-110 the DOW will now also allow homeowners to be the operator for their own single residence without cabinet wastewater operator certification. This includes all operations and maintenance responsibilities along with the requirement to develop an Operations and Maintenance (O&M) Plan, submit semi-annual certification reports and respond to field inspections.

#### 4.3.1. Certified Operator

If the permittee is not the operator of the OSWTS serving the permittee's residence, the requirement to have a certified operator is consistent with KRS 224.73-110 and 401 KAR 5:010, which specifies that wastewater treatment plants that treat domestic wastewaters are required to be operated by a certified operator unless otherwise exempt.

#### 4.3.2. Maintenance Contract/Operation & Maintenance Plan

In the case that the permittee is the operator, the requirement to enter into a maintenance contract with a certified operator has been modified to alternately allow the owner/operator to develop and implement an Operation & Maintenance Plan. This condition is consistent with the requirements of 401 KAR 5:065, Section 2(4) [40 CFR 122.44].

# SECTION 5

## SCHEDULE OF COMPLIANCE

## AND

## OTHER CONDITIONS

## 5. SCHEDULE OF COMPLIANCE AND OTHER CONDITIONS

### 5.1. Schedule of Compliance

The permittee will comply with all requirements by the effective date of the permit except as allowed pursuant to 401 KAR 5:080, Section 6.

### 5.2. Antidegradation

The conditions of 401 KAR 10:029, Section 1 have been satisfied. This permitting action is a reissuance of a KPDES general permit for discharges from OSWTSs for single family residences. As part of the notice of intent the applicant is required to submit copies of the Department for Public Health Onsite Sewage Disposal System Site Evaluation (Form DFS-321) and Onsite Sewage Agency Referral (Form DFS-405) to document that no other alternate treatment system is available. In addition KDOW verifies whether connection to a regional facility's sewer system is possible.

### 5.3. Notice of Intent

The notice of intent for this general permit is NOI-IFR and serves both as an application for construction permit and NOI for coverage under the general permit.

### 5.4. Outfall Signage

The KPDES permit establishes effluent requirements and other conditions to address discharges from the permitted facility. As a member of ORSANCO, KDOW is obligated to include language in KPDES permits that notifies the permittee of the permanent marker requirements of Part V, Section A 3 of ORSANCO's Pollution Control Standards, if the discharge is to the Ohio River. For all other receiving waters, KDOW recommends the permittee place and maintain a permanent marker at each discharge location to better document and clarify these locations.

# SECTION 6

## OTHER INFORMATION

## 6. OTHER INFORMATION

### 6.1. Permit Duration

The permit shall have a duration of five (5) years from the effective date unless modified or reissued. This permit includes facilities is in all five Basin Management Units of the Kentucky Watershed Management Framework.

### 6.2. Permit and Public Notice Information

The draft permit, fact sheet and public notice are available on the DOW Public Notice web page and the Department of Environmental Protection's Pending Approvals Search web page at:

http://water.ky.gov/Pages/PublicNotices.aspx:

http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30

Comments may be filed electronically at the following e-mail address: DOWPublicNotice@ky.gov

Or by sending written comments to:

Division of Water
Surface Water Permits Branch
300 Sower Boulevard
Frankfort, Kentucky 40601

### 6.3. References and Cited Documents

All material and documents referenced or cited in this fact sheet are parts of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the Division of Water's Open Records Coordinator at (502) 782-6849 or by e-mail at EEC.KORA@ky.gov.