MATTHEW G. BEVIN
GOVERNOR

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SECRETARY

AARON B. KEATLEY
COMMISSIONER

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

January 27, 2017

Mr. Edward Basquill
700 West Jefferson Street
La Grange, KY 40031

Re: KPDES Final Permit Issuance
KPDES No.: KY0060577
Country Village WWTP
AI ID: 3335
Oldham County, Kentucky

Dear Mr. Basquill:

Enclosed is the Kentucky Pollutant Discharge Elimination System (KPDES) permit for the above-referenced facility. This action constitutes a final permit issuance under 401 KAR 5:075, pursuant to KRS 224.16-050.

This permit will become effective on the date indicated in the attached permit provided that no request for adjudication is granted. All provisions of the permit will be effective and enforceable in accordance with 401 KAR 5:075, unless stayed by the Hearing Officer under Sections 11 and 13.

Any demand for a hearing on the permit shall be filed in accordance with the procedures specified in KRS 224.10-420, 224.10-440, 224.10-470 and any regulations promulgated thereto. Any person aggrieved by the issuance of a permit final decision may demand a hearing, pursuant to KRS 224.10-420(2), within thirty (30) days from the date of the issuance of this letter. Two (2) copies of request for hearing should be submitted in writing to the Energy and Environment Cabinet, Office of Administrative Hearings, 35-36 Fountain Place, Frankfort, Kentucky 40601 and the Commonwealth of Kentucky, Energy and Environment Cabinet, Division of Water, 200 Fair Oaks Lane, Frankfort, Kentucky 40601. For your record keeping purposes, it is recommended that these requests be sent by certified mail. The written request must conform to the appropriate statutes referenced above.

If you have any questions regarding the KPDES decision, please contact the Operational Permits Section, Surface Water Permits Branch by phone at (502) 564-3410 or via email at SWPBSupport@ky.gov.

Further information on procedures and legal matters pertaining to the hearing request may be obtained by contacting the Office of Administrative Hearings at (502) 564-7312.

Sincerely,

Peter T. Goodmann, Director
Division of Water

PTG: SJB: asw
Enclosure
C: TEMPO

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FACT SHEET

Oldham County Environmental Authority

KPDES No.: KY0060577

AI No.: 3335

Date: January 27, 2017

Public Notice Information

Public Notice Start Date: September 25, 2014

Comment Due Date: October 25, 2014

Information concerning the public notice process may be obtained on the Division of Water's Public Notice Webpage at the following address:

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

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SECTION 1
FACILITY SYNOPSIS

1. FACILITY SYNOPSIS

1.1. Name and Address of Applicant

Oldham County Environmental Authority
700 West Jefferson Street
LaGrange, KY 40031

1.2. Facility Location

Country Village WWTP
4619 Timothy Way
Crestwood, Oldham County, Kentucky

1.3. Description of Applicant's Operation

The applicant operates a sanitary wastewater disposal system that serves a residential subdivision with 142 homes. The activity SIC code is 4952 (Sewerage Systems).

1.4. Outfalls / Internal Monitoring Points / Instream Monitoring Points

Number	Type	Description Of Wastewater	Receiving Water	Latitude	Longitude
001	Direct	Sanitary wastewater	Unnamed Tributary to Currys Fork at NHD Mile Point 1.5	38°19'29"	85°26'17"

1.5. Treatment Provided

DESCRIPTION OF TREATMENT			
Number	**Wastewater Type**	**Design Flow**	**Current Treatment Train**
001	Sanitary wastewater	0.060 MGD	Bar screen, extended aeration, chlorine disinfection, and dechlorination. Sludge solids are thickened and hauled to an approved facility for disposal.

1.6. Permitting Action

This action reissues a minor KPDES permit for an existing discharge from a wastewater treatment plant serving a 142-lot residential subdivision.

SECTION 2
RECEIVING/INTAKE WATERS

2. RECEIVING / INTAKE WATERS

2.1. Receiving Waters

RECEIVING WATERS				
Receiving Water Name	**Use Classification**	**Antidegradation Categorization**	**7Q10 Low Flow (cfs)**	**Harmonic Mean Flow (cfs)**
Unnamed Tributary to Currys Fork	WAH PCR SCR DWS	HQ	0.00	No parameter limited by Harmonic Mean
Impaired Water Status				
The Unnamed Tributary is not listed in the Final 2010 Integrated Report to Congress on the Condition of Water Resources in Kentucky and therefore is classified as a High Quality Water. The receiving segment of Currys Fork is listed as impaired for Warm Water Aquatic Habitat (partial support) and Primary Contact Recreation (nonsupport). Pollutants of concern include fecal coliform, nutrient/eutrophication biological indicators, dissolved oxygen, and sedimentation/siltation. Suspected sources include package plants. These stream segments are within the impaired Floyd's Fork watershed and thus monitoring for total Phosphorus and total Nitrogen will be continued from the previous permit.				

2.2. Intake Waters – Nearest Downstream Intake

INTAKE WATERS
No parameter limited by 7Q10 at Intake

SECTION 3
REPORTED DISCHARGE LEVELS

3. REPORTED DISCHARGE LEVELS

REPORTED DISCHARGE LEVELS									
Effluent Characteristics	**Units**	**Minimum**		**Monthly Average**		**Max Weekly Average**		**Maximum**	
		DMR	**Application**	**DMR**	**Application**	**DMR**	**Application**	**DMR**	**Application**
Flow	MGD	N/A	N/A	0.069	0.069	N/A	N/A	0.277	0.872
$CBOD_5$	mg/l	N/A	N/A	6.2	5.7	N/A	N/A	12.0	48
Total Suspended Solids	mg/l	N/A	N/A	9.7	9	N/A	N/A	18.0	142
Ammonia (May 1 – October 31)	mg/l	N/A	N/A	1.7	1.6	N/A	N/A	3.2	17.2
Ammonia (November 1 – April 30)	mg/l	N/A	N/A	3.8	4.1	N/A	N/A	6.6	16.9
E. coli (colonies/100 ml)	#/100 ml	N/A	N/A	6.5	23	N/A	N/A	78	2420
Dissolved Oxygen	mg/l	6.0	N/R	8.0	N/R	N/A	N/A	N/A	N/A
pH (Standard Units)	SU	6.9	N/R	N/A	N/A	N/A	N/A	8.3	8.6
Total Residual Chlorine	mg/l	N/A	N/A	0.0077	0.010	N/A	N/A	0.0080	0.010
Total Phosphorus	mg/l	N/A	N/A	2.17	N/R	N/A	N/A	3.29	N/R
Total Nitrogen (mg/l)[1]	mg/l	N/A	N/A	11.4	N/R	N/A	N/A	18.4	N/R

[1]Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen
N/A means Not Applicable
N/R means Not Reported

SECTION 4

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The following table identifies the effluent limitations and monitoring requirements for Outfall 001.

EFFLUENT LIMITATIONS							MONITORING REQUIREMENTS	
Effluent Characteristic	Loadings (lbs/day)		Concentrations (specify units)				Monitoring Frequency	Sample Type
	Monthly Average	Max Weekly Average	Minimum	Monthly Average	Max Weekly Average	Maximum		
Flow (MGD)	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
$CBOD_5$	12.5	18.8	N/A	25 mg/l	37.5 mg/l	N/A	1/Week	24-Hr Composite
Total Suspended Solids	15	22.5	N/A	30 mg/l	45 mg/l	N/A	1/Week	24-Hr Composite
Ammonia (as mg/l NH_3N)								
May 1 – October 31	2.0	3.0	N/A	4.0 mg/l	6.0 mg/l	N/A	1/Week	24-Hr Composite
November 1 – April 30	5.0	7.5	N/A	10 mg/l	15 mg/l	N/A	1/Week	24-Hr Composite
E. Coli (colonies/100 ml)[1]	N/A	N/A	N/A	130	240	N/A	1/Week	Grab
Dissolved Oxygen	N/A	N/A	7.0 mg/l	N/A	N/A	N/A	1/Week	Grab
pH (Standard Units)	N/A	N/A	6.0 SU	N/A	N/A	9.0 SU	1/Week	Grab
Total Residual Chlorine	N/A	N/A	N/A	0.011 mg/l	0.019 mg/l	N/A	1/Week	Grab
Total Phosphorus (mg/l)	N/A	N/A	N/A	Report	Report	N/A	1/Week	24-Hr Composite
Total Nitrogen (mg/l)[2]	N/A	N/A	N/A	Report	Report	N/A	1/Week	24-Hr Composite

[1]The effluent limitations for *Escherichia Coli* are 30-day and 7-day Geometric Means.
[2]Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen
N/A means Not Applicable

SECTION 5

JUSTIFICATION OF EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

5. JUSTIFICATION OF EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The proposed effluent limitations and monitoring requirements were developed using the processes and procedures detailed in Section 8.

5.1. Reasonable Potential

In accordance with the reasonable potential procedures outlined in Section 8.2.1, DOW has determined that biochemically degradable wastes have reasonable potential to cause or contribute to an excursion of specific water quality standards. Therefore DOW is proposing effluent limitations for the following pollutants: $CBOD_5$, TSS, Ammonia, E coli, Dissolved Oxygen, pH, and Total Residual Chlorine.

5.2. Carbonaceous Biochemical Oxygen Demand ($CBOD_5$), Ammonia, and Dissolved Oxygen

The effluent limitations for these parameters were developed using the QUAL2K model. The results of this model are presented in the following table.

QUAL2K WASTELOAD ALLOCATION MODEL RESULTS				
Effluent Characteristics	**Units**	**Minimum**	**Monthly Average**	**Max Weekly Average**
$CBOD_5$	mg/l	N/A	25	37.5
Ammonia (May 1 – October 31)	mg/l	N/A	4.0	6.0
Ammonia (November 1 – April 30)	mg/l	N/A	10	15
Dissolved Oxygen	mg/l	7.0	N/A	N/A

5.2.1. Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

The proposed limitations for $CBOD_5$ are consistent with both the secondary treatment requirements for biochemically degradable wastes as established in 401 KAR 5:045, Section 2 and state water quality standards as established in 401 KAR 10:031, Section 4.

5.2.2. Ammonia

The proposed limitations for ammonia are consistent with state water quality standards as established in 401 KAR 10:031, Section 4.

5.2.3. Dissolved Oxygen

The proposed limitations for dissolved oxygen are consistent with state water quality standards as established in 401 KAR 10:031, Section 4.

5.3. Total Suspended Solids (TSS)

The applicable technology-based effluent limitations for TSS are 30 mg/l as a monthly average and 45 mg/l as weekly average. These limitations are representative of the secondary treatment requirements for biochemically degradable wastes established in 401 KAR 5:045, Section 2. Kentucky's water quality standards do not include numeric criteria for TSS but includes a narrative standard. It is the opinion of DOW the application of the technology-based effluent limitations will not significantly increase the TSS loading on the stream therefore these limitations are adequate to protect water quality.

The proposed limitations for TSS are consistent with both the secondary treatment requirements for biochemically degradable wastes as established in 401 KAR 5:045, Section 2 and state water quality standards as established in 401 KAR 10:031, Section 4.

5.4. Total Phosphorus and Total Nitrogen

The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(4) [40 CFR 122.44(i)(1)(ii)]. Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen.

5.5. Total Residual Chlorine

The proposed limitations for total residual chlorine are consistent with state water quality standards as established in 401 KAR 10:031, Section 4.

5.6. Flow

The monitoring requirements for this parameter are consistent with the requirements of 401 KAR 5:065, Section 2(4) [40 CFR 122.44(i)(1)(ii)].

5.7. E. coli and pH

The proposed limitations for E. coli and pH are consistent with state water quality standards as established in 401 KAR 10:031, Section 4.

5.8. Antidegradation

The conditions of 401 KAR 10:029, Section 1, have been satisfied. This permitting action is a renewal of a KPDES permit for existing discharges only. No new or expanded discharges are being authorized by this action therefore a review under 401 KAR 10:030, Section 1, is not applicable.

SECTION 6
SCHEDULE OF COMPLIANCE
AND
OTHER CONDITIONS

6. SCHEDULE OF COMPLIANCE AND OTHER CONDITIONS

6.1. Schedule of Compliance

The permittee will comply with all effluent limitations by the effective date of the permit except as allowed pursuant to 401 KAR 5:080, Section 6. Special KPDES program requirements related to new sources and new discharges shall be as established in 40 CFR 122.29, effective July 1, 2008.

6.2. Outfall Signage

The KPDES permit establishes monitoring points, effluent limitations, and other conditions to address discharges from the permitted facility. In an effort to better document and clarify these locations the permittee should place and maintain a permanent marker at each of the monitoring locations.

6.3. Disposal of Non-Domestic Wastes

The pass through or non-treatment by the wastewater treatment plant 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 wastewater treatment plant and should not be introduced and other environmentally sound methods for disposal 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.

6.4. Certified Operators

Pursuant to 401 KAR 5:010, Section 1, a treatment plant with a design capacity of more than 50,000 gallons per day, but less than or equal to two (2) million gallons per day shall be under the primary responsibility of a certified operator holding an active Class II, III, or IV treatment certificate.

6.5. Connection to Regional Sewer System

Pursuant to 401 KAR 5:005, Section 4(6), this treatment unit is temporary and in no way supersedes the need of a regional sewer system. The permittee will eliminate the discharge and treatment unit by connection to a regional sewer system when it becomes available as defined in 401 KAR 5:002, Section 1(10).

6.6. Certified Laboratory Requirements

All laboratory analyses and tests required to demonstrate compliance with the conditions of this permit shall be performed by Energy and Environment (EEC)-certified general wastewater laboratories and EEC-certified field-only laboratories. Compliance with this requirement shall commence on January 1, 2015, for analyses and tests performed by a general wastewater laboratory and January 1, 2016, for field-only wastewater laboratories.

SECTION 7
OTHER INFORMATION

7. OTHER INFORMATION

7.1. Permit Duration

The permit shall have duration of five (5) years from the effective unless modified or reissued. This facility is in the Salt-Licking Basin Management Unit as per the Kentucky Watershed Management Framework.

7.2. Permit and Public Notice Information

The application, 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

7.3. 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 Department for Environmental Protection's Open Records Coordinator at (502) 564-3410 or by e-mail at dep.kora@ky.gov.

7.4. Location Map

SECTION 8
LIMITS AND REQUIREMENTS DEVELOPMENT PROCEDURES

8. LIMITS AND REQUIREMENTS DEVELOPMENT PROCEDURES

This section of the fact sheet provides information regarding the general process for the development of limits and requirements for most KPDES permits. Some processes and requirements are universal and apply to all permits, while others are specific to particular categories of permits. Sections 1 thru 5 present permit-specific information regarding the development of effluent limitations and requirements.

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. For new sources or new dischargers, these technology-based limitations and standards are subject to the provisions of 401 KAR 5:080, Section 6 [40 CFR 122.29].

8.1. Technology-Based Effluent Limitations

401 KAR 5:065, Section 2(4) [40 CFR 122.44(a)(1)] requires the imposition of effluent limitations and standards promulgated under Section 301 of the Clean Water Act (CWA), or new source performance standards promulgated under section 306 of the CWA, on a case-by-case determination under Section 402(a)(1) of the CWA, or a combination of the three, in accordance with 401 KAR 5:080, Section 2(3) [40 CFR 125.3]. In accordance with Section 301(b) of the CWA, 401 KAR 5:080, Section 2(3) [40 CFR 125.3] establishes the minimum technology-based treatment requirements which are to be imposed on permits issued under section 402 of the CWA. These standards are divided into two categories: Publicly Owned Treatment Works (POTWs) and dischargers other than POTWs (Industrial). In the case of Non-Publicly Owned Treatment Works (Non-POTWs) EPA has not developed national technology-based technology requirements. However, Kentucky has established a minimum treatment requirement for biochemically degradable waste. 401 KAR 5:045, Section 1 requires facilities that receive an influent that is biochemically degradable to provide a minimum of secondary treatment. The secondary treatment requirements defined in 401 KAR 5:045, Section 2 are similar but not equivalent to the national secondary treatment requirements established for POTWs at 401 KAR 5:080, Section 8 [40 CFR 133].

Secondary Treatment Standards as defined in 401 KAR 5:045, Section 2 is present in the following table.

Effluent Characteristic	30 Day Average	7 Day Average
Biochemical Oxygen Demand (BOD_5)	30 mg/l	45 mg/l
Total Suspended Solids (TSS)	30 mg/l	45 mg/l

8.2. Water Quality-Based Effluent Limitations

401 KAR 5:065 Section 2(4) [40 CFR 122.44(d)(1)] requires the imposition of water quality standards and state requirements to consider any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under Sections 301, 304, 306, 307, 318 and 405 of the CWA necessary to achieve water quality standards established under Section 303 of the CWA, including state narrative criteria for water quality.

401 KAR 5:065 Section 2(4) [40 CFR 122.44(d)(1)(i)] stipulates that limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.

When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above a narrative or numeric criteria within a state water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water, pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(1)(ii)]. For any discharge causing, having the reasonable potential to cause, or contribute to an instream excursion above the allowable ambient concentration of a state numeric criteria within a state water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.

When the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above the numeric criterion for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity.

401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(1)(vi)] requires the permitting authority to establish effluent limits for a specific chemical that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contribute to an excursion above a narrative criterion within the state water quality standard.

Pursuant to 401 KAR 5:065, Section (5) [40 CFR 122.45(d)(2)], all effluent limitations necessary to achieve water quality standards for POTWs shall be stated as average weekly and average monthly limitations. It is the Best Professional Judgment of DOW that effluent limitations for non-POTWs treating domestic wastewaters also be expressed as average weekly and average monthly limitations.

8.2.1. Reasonable Potential Analysis

In late 1999 and early 2000, the Division of Water (DOW) documented its procedures for conducting a reasonable potential analysis. In June 2000, this documentation entitled *Permitting Procedures for Determining Reasonable Potential* (Natural Resources and Environmental Protection Cabinet, Division of Water, May 1, 2000) was submitted to EPA Region IV for review. On July 7, 2000, EPA issued a letter approving the Division of Water's procedures. Both chemical-specific numeric and whole effluent toxicity (WET) procedures were developed.

8.2.1.1. Chemical-Specific Procedures

When conducting a chemical-specific reasonable potential analysis DOW must first determine the pollutants of concern. Depending on the type of facility being permitted, the wastewaters discharged and the source of the pollutants, this analysis may be performed on a select number of pollutants or may be performed on the entire list of water quality standards found in 401 KAR 10:031. DOW determines the pollutants of concern through the review of the permit application, applicable effluent guidelines, the water quality standards, Discharge Monitoring Reports (DMRs) for existing facilities, etc. For municipal permits this review will include verification of industrial user contribution and, for those with approved pretreatment programs, toxic scans of influent, effluent, and sludge in addition to audits and inspections.

8.2.1.1.1. Numeric Procedures

If DOW determines that a promulgated Effluent Limitation Guideline (ELG) applies or has developed limits for a pollutant based upon its Best Professional Judgment (BPJ), then reasonable potential is considered to exist and effluent limitations and monitoring are imposed in the permit. For pollutants where neither an ELG nor BPJ developed limits apply DOW shall develop a Waste Load Allocation (WLA) for the pollutant to determine if reasonable potential exists. DOW utilizes one or more of the computer models in subsequent sections to develop WLAs, taking into account site-specific background receiving water conditions.

The models use actual or predicted background data and discharge data. In running these models, DOW considers five (5) data points as sufficient dataset in most cases. In cases where insufficient data is available, DOW may condition the permit to include a monitoring-only requirement to generate the data; to require additional data collection prior to the development of the permit; or, in cases where the pollutant concentration in the wastewater is not highly variable, a single data point may be used. While most effluents exhibit a lognormal distribution relative to concentrations of constituents being released, DOW has elected not to assume any coefficient of variation for the data set and instead prefers to use the average concentration or loading as indicative of future discharge.

The output of the WLA is compared to the discharge quality to determine reasonable potential using the following criteria: If the average discharge quality is less than 70% of the WLA then monitoring may not be required; if within the range of 70% to 90% then monitoring shall be required; if greater than 90% then a limit shall be required. In the case where insufficient data, i.e. less than 5 data points, exists, or where predicted values were used the permit shall require monitoring for the pollutants at a frequency of once per month for the first year at the end of which a new reasonable potential analysis shall be conducted and the permit may be reopened to modify the conditions.

8.2.1.1.2. Narrative Procedures

DOW uses biotic indices, as discussed in 8.2.2.1.3.3, to assess streams to determine the level of support for aquatic life. These indices are used to implement Kentucky's narrative criteria. DOW also uses these indices to determine the reasonable potential for the effluent to adversely affect the aquatic community.

Site-specific data is necessary in order to address reasonable potential to cause or contribute to an excursion from narrative criteria. DOW uses a single baseline data point to determine the level of existing support prior to commencement of the permitted activity. In cases where baseline data is unavailable, DOW may require data collection prior to the development of the permit or condition the permit to include a requirement to generate the data. Additional sample data is required to determine whether reasonable potential to cause an excursion from the narrative standard exists after the permitted activity commences. DOW compares the additional data to baseline biotic indices. Should negative changes in the biotic indices occur, then reasonable potential may exist and DOW may require either an action by the permittee or modification of the permit. Should the negative change in the biotic indices be of sufficient scale as to cause a categorical decline, e.g. moving from the Fair category to the Poor category, then reasonable potential has been demonstrated. A categorical decline is an excursion of the narrative criteria and a violation of the permit unless demonstrated by the permittee that the categorical decline is a result of other causes.

8.2.1.2. Whole Effluent Toxicity Procedures

Complex wastestreams have a number of variable contributing sources which may be individually toxic or collectively act synergistically to cause toxicity and therefore have present a reasonable potential to cause or contribute to instream toxicity. Those industrial facilities which have been rated as "majors" using EPA's major rating protocols and municipalities with approved pretreatment programs are considered to have a reasonable potential by DOW and therefore have whole effluent toxicity (WET) testing included in the permit.

Additionally, 401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(vi)(C)] allows for the establishment of limits on an indicator parameter for narrative water quality standards. 401 KAR 10:031, Section 4(1)(f) and (g) include Kentucky's narrative standards for TDS or SC and TSS respectively, which should not be changed to the extent that the indigenous aquatic community is affected. Coupled with site-specific biotic surveys, DOW uses WET testing as an indicator parameter for these pollutants.

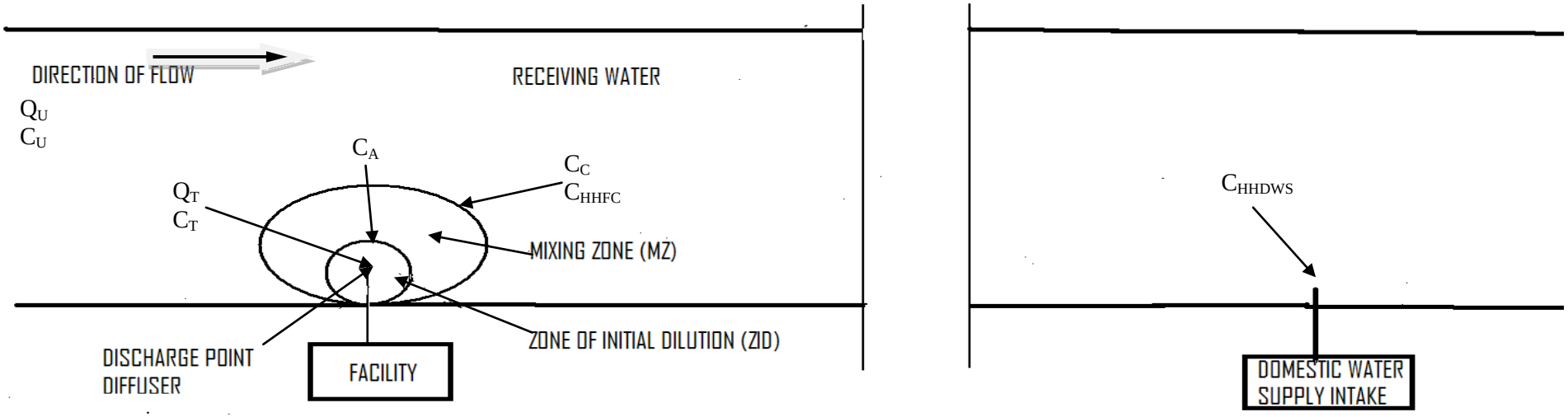
8.2.2. Derivation of Limitations

8.2.2.1. Chemical-Specific Criteria

The allowable instream concentrations for specific pollutants are found in 401 KAR 10:031, Section 6(1) Table 1. These water quality criteria are divided into the categories of those for the protection of human health and aquatic life. These categories are further divided into the subcategories of Domestic Water Supply (C_{HHDWS}) and Fish Consumption (C_{HHFC}) for human health and Acute Criteria (C_A) and Chronic Criteria (C_C) for aquatic life. Section 4(2) of 401 KAR 10:029 specify the points within the receiving stream where AC, CC, and FC criteria apply. The point where DWS criteria apply is specified by 401 KAR 10:031, Section 3. This section also specifies the stream flows that are used in derivation of water quality based effluent limitations. The following summarizes these requirements.

CHEMICAL-SPECIFIC CRITERIA APPLICATION CONDITIONS			
Criteria	**Sub-Criteria**	**Point of Application**	**Stream Flow**
Aquatic Life	Acute	No Diffuser – End-of-pipe	Not applicable
		Diffuser – Edge of the ZID Receiving Water	7Q10
	Chronic	Edge of Mixing Zone Receiving Water	7Q10
Human Health	Fish Consumption	Edge of Mixing Zone Receiving Water	Harmonic Mean
	Domestic Water Supply	Point of Withdrawal Intake Water	Carcinogen – Harmonic Mean
			Non-Carcinogen – 7Q10

The following figure illustrates the application points for these criteria.



C_A – Acute criteria for aquatic life

C_C – Chronic criteria for aquatic life

C_{HHDWS} - Human Health criteria domestic water supply

C_{HHFC} - Human Health criteria fish consumption

C_T – End-of-pipe effluent limit

C_U – Background pollutant concentration

Q_T – Total Effluent Flow

Q_U – Upstream Flow

8.2.2.1.1. Mass-balance Equation

The chemical-specific water quality limitations are calculated using the following mass-balance equation:

$$(C_U)(Q_U)+(C_T)(Q_T)=(C_D)(Q_U+Q_T)$$

Where:

C_D = pollutant concentration downstream (water quality criteria)
C_T = End-of-pipe effluent limit
C_U = pollutant concentration upstream (stream background condition)
Q_T = wastewater flow
Q_U = receiving stream flow upstream

Solving the equation for CT first requires rearranging the equation as

$$C_T=\frac{[(C_D)(Q_T+Q_U)-(C_U)(Q_U)]}{Q_T}$$

In the event that the applicable Q_U is zero, $C_T = C_D$.

8.2.2.1.2. Mixing Zones and Zones of Initial Dilution

A mixing zone (MZ) is an area where effluent discharge undergoes dilution and is extended to cover the secondary mixing in the ambient waterbody. It is also an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented. 401 KAR 10:029, Section 4 sets forth the requirements for the granting of mixing zones, zones of initial dilution (ZIDs) and the application point of the aquatic life and human health criteria found in Kentucky's Water Quality Standards at 401 KAR 10:031. 401 KAR 10:029, Section 4(1) establishes requirements for the granting of an MZ, and Section 4(2) establishes the points of application for the aquatic life and human health criteria and the requirements and restrictions associated with a ZID.

When granting an MZ, DOW must assign definable geometric limits including the linear distance from the point of discharge, the surface area involved, and the volume of the receiving water, and shall take into account other nearby MZs. For streams and rivers, the assigned MZ shall not exceed 1/3 of the width of the waterbody nor 1/2 of the waterbody's cross-sectional area in any spatial direction. For lakes and reservoirs, the assigned MZ shall not exceed 1/10 of width of the waterbody in any spatial direction. The MZ shall not adversely affect the designated uses of the receiving stream nor adversely affect an established community of aquatic organisms. The location of an MZ shall not interfere with fish spawning or nursery areas, fish migration routes, public water supply intakes, or bath areas; preclude the free passage of fish or aquatic life, or jeopardize the continued existence of endangered or threatened aquatic species or result in the destruction or adverse modification of their critical habitat. Unless assigned by the Cabinet on or before September 8, 2004, there shall be no MZ for bioaccumulative chemicals of concern. Existing MZs assigned by the Cabinet for bioaccumulative chemicals of concern shall expire no later than September 8, 2014. The dilution afforded by an MZ is not allowed unless the applicant requests an MZ and DOW assigns the geometric limits.

A ZID is a regularly-shaped area surrounding the discharge structure that encompasses the regions of high pollutant concentrations under design conditions. ZIDs are restricted to facilities with a submerged high-rate multi-port outfall structure (diffuser). Within the ZID, acutely-toxic concentrations may exist; as such, the acute criteria must be met at the edge of the defined ZID. When determining the size of the ZID, DOW evaluates three cases, the most restrictive of which is used to establish the dimensions of the ZID and the allowable dilutions. The three cases that are evaluated are as follows: (1) within 10% of the distance from the edge of the outfall to the edge of the assigned mixing zone in any spatial direction; (2) within 50 times the square root of the cross-sectional area of a discharge port in any spatial direction; and (3) horizontally within 5 times the natural water depth that prevails under mixing zone design conditions, and exists before the installation of a discharge outlet. Unless assigned on or before December 8, 1999, a ZID for a pollutant shall not be allowed in an Exceptional

Water. Like MZs, the dilution afforded by a ZID is not allowed unless the applicant requests a ZID and DOW assigns the geometric limits.

8.2.2.1.2.1. Mixing Zone

When an MZ is granted, the available upstream flow Q_U is modified by the MZ factor (MZF). The MZF represents the maximum proportion of the flow allowed to be used for the MZ. The mass-balance equation becomes

$$C_T = \frac{\left[C_D\left(Q_T + \left(MZF\right)\left(Q_U\right)\right) - C_U\left(MZF\right)\left(Q_U\right)\right]}{Q_T}$$

Assuming that the depth is much smaller than width and that the flow is therefore width-dependent, the MZF cannot exceed 0.333 for most streams and rivers. For larger rivers, the cross-sectional limitation of 0.5 is allowed, but 0.333 is generally used to be conservative. Because of the low-flow regime present in lake systems, 0.1 is the maximum MZF for lakes. The MZ dilution (MZD) is then defined as product of the MZF and the ratio of the downstream flow to the upstream flow, or

$$MZD = \frac{\left(MZF\right)\left(Q_U\right) + Q_T}{Q_T}$$

Substituting MZD into the prior equation yields

$$C_T = \left[MZD\left(C_D - C_U\left(\frac{\left(MZF\right)Q_U}{Q_T + \left(MZF\right)Q_U}\right)\right)\right]$$

In the case where the receiving water flow condition is many times greater than the discharge flow, $\frac{\left(MZF\right)Q_U}{\left(Q_T + \left(MZF\right)Q_U\right)}$ approaches 1, which is a conservative assumption since it results in smaller values of C_T. The mass-balance equation can be approximated as

$$C_T = \left(C_D - C_U\right)MZD$$

8.2.2.1.2.2. Zone of Initial Dilution

A ZID is granted when a high rate multi-port submerged diffuser is installed on the effluent pipe. In such cases the ZID dilution (ZIDD) is defined as the ratio of the downstream flow to the upstream flow, or

$$ZIDD = \frac{\left(Q_T + Q_U\right)}{Q_T}$$

And the mass-balance equation is expressed as

$$C_T = \left[ZIDD\left(C_D - C_U\left(\frac{Q_U}{Q_T + Q_U}\right)\right)\right]$$

In cases where the receiving water flow condition is many times greater than the discharge flow, $\frac{Q_U}{\left(Q_T + Q_U\right)}$ approaches 1, which is a conservative assumption since it results in smaller values of CT. The mass-balance equation can be approximated as

$$C_T = \left(C_D - C_U\right)ZIDD$$

8.2.2.1.3. Aquatic Life Criteria

Effluent discharge limitations for a particular constituent for the aquatic live criteria are based on the instream pollutant concentration limits for both acute conditions (C_A) and chronic conditions (C_C) and an associated ZIDD and/or MZD. The numerical values of the effluent discharge limits for a particular constituent are determined using the following equations. The 7Q10 low-flow condition of the receiving stream is used in place of Q_U when calculating these criteria.

8.2.2.1.3.1. Acute Aquatic Life Criteria

The acute aquatic life criterion (C_A) is applied at either the edge of the ZID or at the end of the discharge pipe. When a ZID is granted, the mass-balance equation is written as

$$C_T = (LC_1 - C_U)(ZIDD)$$

Where LC_1 is the concentration of toxic substance or mixture of toxic substances which is lethal (or immobilizing, if appropriate) to one (1) percent of the organisms tested in a toxicity test during a specified exposure period. The LC_{50} is the concentration of toxic substance or mixture of toxic substances which is lethal (or immobilizing, if appropriate) to fifty (50) percent of the organisms tested in a toxicity test during a specified exposure period. Due to the difficulty in deriving an LC1, the equivalent value of the LC_{50}, i.e. 1/3 LC_{50}, is used instead. The equation can thus be rewritten as

$$C_T = (0.333LC_{50} - C_U)(ZIDD)$$

The acute criteria listed in Table 1 in 401 KAR 10:031, Section 4 is the LC_{50} values for those specific pollutants therefore the equation is ultimately written as

$$C_T = (C_A - C_U)(ZIDD)$$

In the case where a ZID has not been granted, the equation becomes:

$$C_T = (C_A - C_U)$$

8.2.2.1.3.2. Chronic Aquatic Life Criteria

As previously stated, the chronic criterion (C_C) is applied at the end of the discharge pipe or at the edge of the assigned regulatory MZ. When an MZ is granted, the mass-balance equation for non-bioaccumulative or non-persistent chemicals is

$$C_T = (0.1LC_{50} - C_U)(MZD)$$

And for bioaccumulative or persistent chemicals is

$$C_T = (0.01LC_{50} - C_U)(MZD)$$

The chronic criteria listed in Table 1 in 401 KAR 10:031, Section 4 is the $0.1LC_{50}$ and $0.01LC_{50}$ values for those specific pollutants therefore the mass-balance equation is ultimately written as

$$C_T = (C_C - C_U)(MZD)$$

In the case where a MZ has not been granted, the equation becomes

$$C_T = (C_C - C_U)$$

Note: As previously stated in Section 8.2.2.1.2, unless granted prior to September 8, 2004, no new MZs shall be granted for bioaccumulative chemicals and any existing MZ shall expire no later than September 8, 2014. The following table lists those chemicals which are currently defined under 401 KAR 10:029, Section 4(1)(h)2b as bioaccumulative chemicals.

BIOACCUMULATIVE CHEMICALS OF CONCERN

alpha-Hexachlorocyclohexane	Hexachlorobenzene	Pentachlorobenzene
beta-Hexachlorocyclohexane	Hexachlorobutadiene	Photomirex
Chlordane	Hexachlorocyclohexane	Toxaphene
DDD	Lindane	1,2,3,4-Tetrachlorobenzene
DDE	Mercury	1,2,4,6-Tetrachlorobenzene
DDT	Mirex	2,3,7,8-TCDD (Dioxin)
delta-Hexachlorocyclohexane	Octachlorostyrene	
Dieldrin	PCBs	

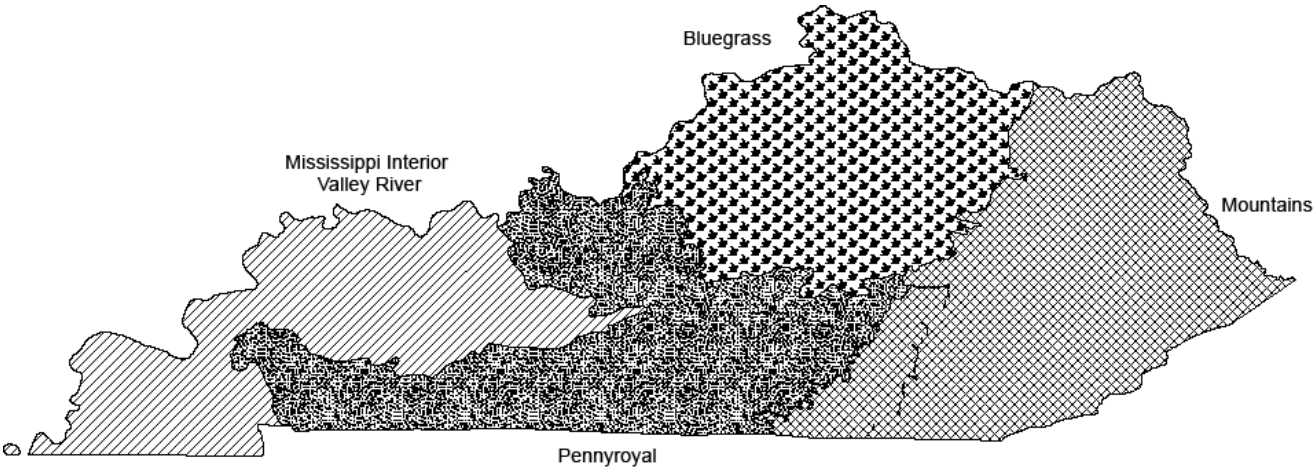
8.2.2.1.3.3. Narrative Criteria

40 CFR 131.11 requires that states must identify water bodies where toxic pollutants may be adversely affecting water quality or the attainment of such designated use, or where the level of such toxic pollutants are at a level to warrant concern and must adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use. In establishing narrative criteria, 40 CFR 131.11(b)(2) specifies that criteria should be based on biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria. Kentucky has developed criteria to protect aquatic life in 401 KAR 10:031, Section 4, including narrative criteria related to total dissolved solids or specific conductance, total suspended solids, settleable solids, and flow.

Aquatic community integrity may be assessed by monitoring biological indicators, including benthic macroinvertebrates (benthics), fish, and related habitats. DOW utilizes the Kentucky MBI and KIBI developed by DOW to assess benthic and fish communities, respectively, in conjunction with the RBP habitat field methods developed by USEPA to evaluate stream conditions for meeting the designated uses of warm and cold water aquatic life, including the narrative criteria, as cited in 401 KAR 10:026, Section 3.

The Kentucky MBI and KIBI include metric scores based on bioregions across the state for benthics and fish, respectively. Numeric metric scores relate to five (5) narrative categories that determine whether the stream meets its designated use for aquatic life. The categories are Excellent, Good, Fair, Poor, and Very Poor. Categories Excellent and Good indicate full support of the designated use; Fair, Poor, and Very Poor indicate non-support of the designated use.

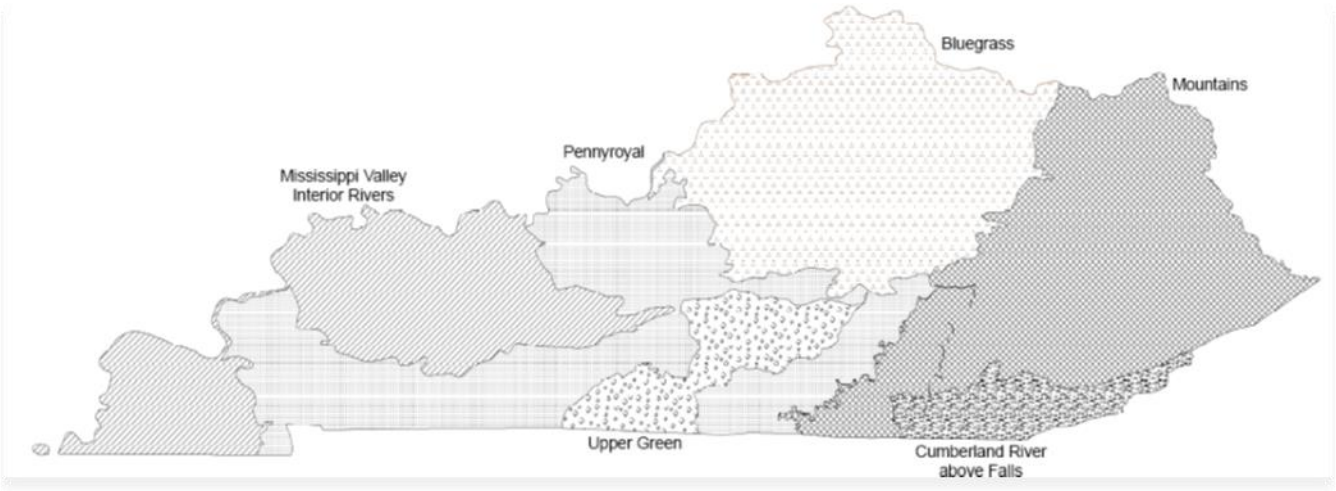
The four (4) bioregions for MBI metrics are the Bluegrass, the Mountains, the Pennyroyal, and the Mississippi Valley and Interior Rivers, as illustrated in the following figure. Associated MBI ranges for each category based on stream size are listed in the following table.



Stream Size	MBI Category	Bluegrass	Mountains	Pennyroyal	Mississippi Valley – Interior River
Headwater (< 5 mi^2	Excellent	≥ 58	≥ 83	≥ 72	≥ 63
	Good	51 - 57	72 - 82	65 - 71	56 - 62

drainage)	Fair	39 - 50	48 - 71	43 - 64	35 - 55
	Poor	19 - 38	24 - 47	22 - 42	19 - 34
	Very Poor	0 - 18	0 - 23	0 - 21	0 - 18
Wadeable ($\geq$ 5 mi^2 drainage)	Excellent	$\geq$ 79	$\geq$ 82	$\geq$ 81	$\geq$ 58
	Good	61 - 79	75 - 81	72 - 80	48 - 57
	Fair	41 - 60	50 - 74	49 - 71	24 - 47
	Poor	21 - 40	25 - 49	25 - 48	13 - 23
	Very Poor	0 - 20	0 - 24	0 - 24	0 - 12

The six (6) bioregions for the KIBI metrics for fish are Bluegrass, Mountains, Pennyroyal, Mississippi Valley and Interior Rivers, Cumberland River above the Falls, and the Green River Valley, as illustrated in the following figure. Associated KIBI ranges for each category are listed in the following table.



KIBI Category	Bluegrass	Mountains	Pennyroyal	Mississippi Valley – Interior River	Cumberland River above Falls	Upper Green
Excellent	$\geq$ 52	$\geq$ 71	$\geq$ 67	$\geq$ 67	$\geq$ 56	$\geq$ 86
Good	47 - 51	59 - 70	53 - 66	48 - 66	47 - 55	76 - 85
Fair	31 - 46	39 - 58	35 - 52	32 - 47	31 - 46	51 - 75
Poor	16 - 30	19 - 38	17 - 34	16 - 31	16 - 30	26 - 50
Very Poor	0 - 15	0 - 18	0 - 16	0 - 15	0 - 15	0 - 25

8.2.2.1.4. Human Health Criteria

For the purposes of protecting human health there are two criteria that must be satisfied, one for fish consumption (C_{HHFC}) and one for domestic water supply (C_{HHDWS}). Either the 7Q10 low-flow condition or harmonic mean stream flow of the receiving water or the source water of the nearest downstream public water supply is used in place of QU when calculating effluent limits based on these criteria, as stated below.

8.2.2.1.4.1. Fish Consumption Criteria

Like C_C, C_{HHFC} is applied at the edge of the assigned regulatory MZ. However, the harmonic mean flow of the receiving water is used when calculating effluent limits based on these criteria. When an MZ is granted, the mass-balance equation is written as

$$C_T = (C_{HHFC} - C_U)(MZD)$$

In the case where an MZ has not been granted, the equation becomes

$$C_T = (C_{HHFC} - C_U)$$

8.2.2.1.4.2. Domestic Water Supply Criteria

The domestic water supply criteria (C_{HHDWS}) may apply to a pollutant that is categorized as a carcinogen or a non-carcinogen, based on a one-in-a-million or 10^6 cancer risk-protection level. C_{HHDWS} is applied at the point of withdrawal of the nearest downstream public water supply intake using appropriate flow regime of the source water for the public water supply, i.e. the harmonic mean stream flow for carcinogens and the 7Q10 low-flow condition for non-carcinogens. Table B found in 401 KAR 10:026, Section 5(2)(b) lists the surface water intakes for domestic water supply use. Because of this application point, C_{HHDWS} is calculated assuming a complete mix. The mass-balance equation is written for a carcinogen as

$$C_T = \frac{[(C_{HHDWS})(Q_T + Q_{SWHM}) - (C_U)(Q_{SWHM})]}{Q_T}$$

And for a non-carcinogen as

$$C_T = \frac{[(C_{HHDWS})(Q_T + Q_{SW7Q10}) - (C_U)(Q_{SW7Q10})]}{Q_T}$$

8.2.2.1.5. Waste Load Allocation Models

DOW uses the QUAL2K, CORMIX and SSTWAM models to assist in the development the WLA. The QUAL2K model develops effluent limitations for biochemically degradable wastewaters from residential types of effluents. CORMIX is a mixing zone analysis model used to determine the size and effect of a mixing zone. SSTWAM is a WLA model that generates effluent limits for toxic pollutants which have water quality criteria. These models are detailed below.

8.2.2.1.5.1. CORMIX

CORMIX is an EPA-supported simulation and decision support system developed by MixZone for environmental impact assessment of mixing zones resulting from continuous point-source discharges. The system emphasizes the role of boundary interaction to predict mixing behavior and plume geometry.

The CORMIX methodology contains systems to model and design single-port, multiport diffuser discharges and surface discharge sources. Effluents considered may be conservative, non-conservative, heated, dense brine discharges or contain suspended sediments. Advanced information systems provide documented water quality modeling, NPDES regulatory decision support, visualization of regulatory mixing zones, and tools for outfall specification.

DOW primarily utilizes this model to determine plume geometry, i.e., allowable MZ and ZID, for multi-port high-rate submerged diffusers with conservative discharges.

8.2.2.1.5.2. River and Stream Water Quality Model

The River and Stream Water Quality Model (QUAL2K) is a non-uniform, steady-state mass-balance model that assumes mixing vertically and laterally. The model has the ability to accept many combinations of point or nonpoint sources or withdrawals.

QUAL2K was developed by EPA to modernize QUAL2E, developed by Brown and Barnwell in 1987.

DOW primarily uses the model to develop effluent limitations for biochemically-degradable wastewaters, including BOD, Ammonia, and Dissolved Oxygen.

8.2.2.1.5.3. Steady-State Toxics Wasteload Allocation Model

The Steady-State Toxics Wasteload Allocation Model (SSTWAM) models is a uniform, steady-state mass-balance model that models water quality using the formulas developed above.

SSTWAM was originally developed by DOW in the 1990s as a steady-state mass-balance workbook in Microsoft Excel. The format was updated in 2010 to a Microsoft Access 2007 database that allows more flexibility to update

and distribute the application when new water quality standards are promulgated, when there is a new interpretation of an existing standard, or when state flow data is updated.

8.2.3. Antidegradation

The CWA requires each State to develop an Antidegradation Policy and associated implementation procedures for the protection and maintenance of a waterbody's existing water quality. Kentucky's Antidegradation Policy is found in 401 KAR 10:029, Section 1. The antidegradation policy implementation methodology is contained in 401 KAR 10:030.

8.2.3.1. Antidegradation Policy

The purpose of 401 KAR 10:026 through 401 KAR 10:031 is to safeguard the surface waters of the commonwealth for their designated uses, to prevent the creation of new pollution of these waters, and to abate existing pollution.

Where the quality of surface waters exceeds that necessary to support propagation of fish, shellfish, wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Cabinet finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the Cabinet's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.

For point source discharges, water quality shall be maintained and protected in these waters according to the procedures specified in 401 KAR 10:030, Section 1(2)(b) or (3)(b).

In allowing degradation or lower water quality, the Cabinet shall assure water quality adequate to protect existing uses fully.

The Cabinet shall assure that there shall be achieved the highest statutory and regulatory requirements for waste treatment by all new and existing point sources and that nonpoint sources of pollutants be controlled by application of all cost effective and reasonable best management practices.

Water quality shall be maintained and protected in a water categorized as an outstanding national resource water according to the procedures specified in 401 KAR 10:030, Section 1(1)(b).

Water quality shall be maintained and protected in those waters designated as outstanding state resource waters according to the procedures specified in 401 KAR 10:031, Section 8.

If potential water quality impairment associated with a thermal discharge is involved, a successful demonstration conducted under Section 316 of the Clean Water Act, 33 U.S.C. 1326, shall be in compliance with this section.

8.2.3.2. Implementation Methodology

All surface waters of the commonwealth have been assigned to an antidegradation category based on specific criteria. These categories are: Outstanding National Resource Water (ONRW), Exceptional Water (EW), Impaired Water (IW) and High Quality Water (HQ).

8.2.3.2.1. Outstanding National Resource Water

An ONRW is surface water that at minimum meets the requirements to be designated an Outstanding State Resource Water (OSRW) pursuant to 401 KAR 10:031, Section 8 and demonstrates national ecological or recreational significance. Kentucky has eight (8) such categorized as ONRWs. A list of these waters can be found in 401 KAR 10:030, Section 1(1) Table 1. The implementation methodology for this category of waters is as follows:

(1) The water quality shall be maintained and protected;
(2) New or expanded discharges that result in permanent or long-term changes in water quality are prohibited; and
(3) Temporary or short term changes in water quality may be approved if the changes do not have a demonstrable impact on the ability of the water to support its designated uses.

8.2.3.2.2. Exceptional Water

The Cabinet has categorized over 250 surface waters as EW. To be categorized as EW, a surface water must meet one of the following criteria:

(1) Designated as a Kentucky Wild River and is not categorized as an ONRW;
(2) Designated as an outstanding state resource water as established in 401 KAR 10:031, Section 8(1)(a)1, 2, and 3 and Section 8(1)(b);
(3) Contains a fish community that is rated "excellent" by the use of the Index of Biotic Integrity included in Development and Application of the Kentucky Index of Biotic Integrity (KIBI), 2003;
(4) Contains a macroinvertebrate community that is rated "excellent" by the Macroinvertebrate Bioassessment Index included in "The Kentucky Macroinvertebrate Bioassessment Index," 2003; or
(5) Included in the Cabinet's reference reach network.

The implementation methodology for new or expanded discharges to an EW is the same as the implementation methodology for an HQW except where the surface water's stream use designation may require more stringent requirements or maintenance of current water quality.

8.2.3.2.3. Impaired Water

Surface waters that have been identified pursuant to 33 U.S.C. 1315(b) are categorized as impaired waters. Impaired waters are those waters which have been assessed by the Cabinet as not fully supporting any applicable designated use unless the designated is OSRW or the impairment is for fish consumption due to mercury contamination. Surface waters categorized as impaired are listed in DOW's biannual *Integrated Report to Congress on the Condition of Water Resources in Kentucky*. The implementation methodology for new or expanded discharges to this category of waters is as follows:

(1) All existing uses shall be protected and the level of water quality necessary to protect those existing uses shall be assured in impaired water; and
(2) The process to allow a discharge into an impaired water and to assure protection of the water shall be regulated by the requirements in the Kentucky Pollution Discharge Elimination System Program, 401 KAR 5:050-5:080.

8.2.3.2.4. High Quality Water

The largest of all of the antidegradation categories is the High Quality Water (HQ) group. It consists of all surface waters that have not been categorized as an ONRW, EW or IW; it is therefore the default category for any surface water that has not been assessed by the Cabinet. The implementation methodology for new or expanded discharges to HQs consists of the following requirements:

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected;
(2) An application for a KPDES permit for a new or expanded discharge shall contain information demonstrating that the lowering of water quality is necessary to accommodate important economic or social development in the area in which the water is located, utilizing Form SDAA;
(3) A permit applicant who has failed to demonstrate the necessity and social or economic development importance for lowering water quality shall not receive a permit unless (a) The applicant submits a revised SDAA that demonstrates the necessity for lowering water quality, or (b) The applicant demonstrates that the discharge shall not consume more than ten (10) percent of the available assimilative capacity of the receiving stream outside of a designated mixing zone or zone of initial dilution for each new or increased pollutant in the discharge;
(4) A permit applicant who demonstrates the necessity and social or economic development importance for lowering water quality shall meet the requirements of the KPDES program, 401 KAR 5:050 through 5:080; and
(5) The Cabinet's determination shall be documented in the permit Fact Sheet and included in the administrative record for the permit or action.

8.2.3.2.5. Socioeconomic Demonstration and Alternates Analysis

8.2.3.2.5.1. Socioeconomic Demonstration

The socioeconomic demonstration portion of this requirement shall consider the following factors:

(1) The boundaries of the affected community;
(2) The potential effect on employment, including a comparison of local unemployment rates and state and national unemployment rates;
(3) The potential effect on median household income levels, including a comparison of the present median household income level, projected median household income level, and number of households affected in the defined community;
(4)) The potential effect on tax revenues, including current tax revenues in the affected community compared to projected increase in tax revenues generated by the permitted project;
(5) The potential effect of the facility on the environment and public health; and
(6) Other potential economic or social effect to the community that the applicant includes in the application.

8.2.3.2.5.2. Alternatives Analysis

The alternatives analysis shall consider the following factors:

(1) Pollution prevention measures, such as changes in plant processes, source reductions, or substitution with less toxic substances;
(2) The use of best management practices to minimize impacts;
(3) Recycle or reuse of wastewater, waste by-products, or production materials and fluids;
(4) Application of water conservation methods;
(5) Alternative or enhanced treatment technology;
(6) Improved operation and maintenance of existing treatment systems;
(7) Seasonal or controlled discharge options;
(8) Land application or infiltration to capture pollutants and reduce surface runoff, on-site treatment, or alternative discharge locations; and
(9) Discharge to other treatment facilities.

8.2.3.2.5.3. Activities Not Subject to Antidegradation Implementation

The following activities are not subject to the EW or HQ antidegradation implementation procedures include:

(1) The renewal of a KPDES permit that does not authorize pollutant loading to the receiving stream in excess of that previously authorized;
(2) An increase in pollutant loading within the limits previously approved by the KPDES permit; or
(3) A new or expanded discharge that the applicant demonstrates shall not consume more than ten (10) percent of the available assimilative capacity of the receiving stream outside of a designated mixing zone or zone of initial dilution for each new or increased pollutant in the discharge.

8.2.3.2.5.4. Activities That Constitute Compliance with Antidegradation Implementation

The approval of a POTW's regional facility plan pursuant to 401 KAR 5:006 shall constitute compliance with the alternatives analysis and socioeconomic demonstration for a regional facility.

8.3. Effluent Limitations and Monitoring Requirements

Having completed an evaluation of the applicable technology-based effluent requirements and applicable water quality based effluent requirements, the permit writer determines (1) the pollutants that are to be controlled by chemical-specific numeric effluent limits, (2) if WET testing is appropriate, (3) the type and frequency of self monitoring, and (4) for permit renewals if anti-backsliding applies.

8.3.1.1. Chemical-Specific Numeric Effluent Limitations

The imposition of chemical-specific numeric effluent limitations is necessary when reasonable potential has been demonstrated. Pursuant to 401 KAR 5:065 Section 2(4) [40 CFR 122.44] the permit must contain effluent limitations that satisfy both technology and water quality based concerns. To comply with this requirement a

comparison of the calculated technology-based effluent limitations to the calculated water quality based effluent limitations is required. When performing such a comparison there must be consistency in the units and the chemical species. Direct comparisons of different speciations of a pollutant are irrelevant and produce illogical results; therefore e.g. calculated technology-based effluent requirements for total chromium must be compared to the calculated water quality based effluents for total chromium not trivalent chromium.

In general technology-based effluent limitations are expressed in terms of mass, i.e. lbs/day, whereas most water quality based effluent limitations are expressed in terms of concentration, i.e. mg/l. The permit writer must convert from lbs/day to mg/l or mg/l to lbs/day using the following formulas in order to perform a comparison of the calculated effluent limitations:

$$\text{Load} = \text{Flow} \times \text{Concentration} \times 8.34, \text{ or}$$

$$\text{Concentration} = \frac{\text{Load}}{\text{Flow} \times 8.34}$$

8.34 is a conversion factor with units of l·lbs/MG·mg

Where load is expressed in lbs/day, flow is expressed in MGD, and concentration is expressed in mg/l.

The final effluent limits for a selected pollutant of concern shall be expressed in appropriate units, i.e. mass, concentration or a combination of the two. 401 KAR 5:065, Section 2(4) [40 CFR 122.44 (f)] requires all pollutants limited in permits to be expressed in terms of mass except for pollutants which cannot appropriately be expressed by mass or the applicable requirements are more appropriately expressed in terms of concentrations. Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.

8.3.2. Monitoring, Analytical and Reporting Requirements

All permits are required by 401 KAR 5:070, Section 3 [40 CFR 122.48] and 401 KAR 5:065, Section 2(4) [40 CFR 122.44(i)] to include monitoring and reporting requirements designed to measure compliance with permit conditions.

8.3.2.1. Monitoring Requirements

The permit must include monitoring requirements for each pollutant limited in the permit and the volume of effluent discharged from each outfall. When establishing monitoring requirements, the permit writer must determine the type, intervals, and frequency of monitoring. The monitoring program is required to be sufficient to yield data that is representative of the monitored activity. In regards to the type of monitoring required, the permit writer must decide if effluent monitoring alone is sufficient or if other monitoring is required. Examples of other types of monitoring and when they are required include:

(1) Influent monitoring when permit conditions are written in the form of a pollutant reduction;
(2) Source water monitoring when permit limits are expressed in the form of net limits;
(3) Internal monitoring when it is infeasible or impractical to monitor at the outfall, i.e. when outfall may be flooded or when it is necessary to demonstrate compliance with a technology-based effluent limit when wastestreams are combined for treatment and discharge; and
(4) Ambient monitoring when permit contains conditions that are measured by changes in receiving water conditions, i.e. hydrographically controlled releases, etc.

In determining the frequency of monitoring, the permit writer considers: size and design of the facility, type of treatment, location of discharge, frequency of discharge (batch, continuous), compliance history, nature of pollutants, number of monthly samples used in developing permit limit, and cost. The frequency of sampling must be of sufficient regularity to provide adequate data to evaluate compliance with the permit limits.

In addition to frequency, the permit writer must specify sample collection requirements. In determining the appropriate sample type, the permit writer considers pollutant characteristics, analytical method requirements, frequency of discharge (batch, continuous), etc. Types of samples most often required are: grab, composite, continuous, and instantaneous.

Grab samples are taken on a one-time basis without consideration of flow rate and time. This sample type is typically used for monitoring batch discharges. Grab samples are required for pollutants that are affected by changes in ambient conditions. Composite samples are made up of two or more discrete aliquots collected over a period of time. They provide a more representative measure of the discharge of pollutants over a given period of time and account for variability in pollutant concentration and discharge rate. Composite samples are defined by the time interval between aliquots and volume of each aliquot and are typically used for pollutants with varying concentration over the period of discharge, i.e. BOD, TSS, chronic toxicity, etc. Continuous and instantaneous samples are used primarily for flow measurements.

8.3.2.2. Analytical Methods Requirements

Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(i)(1)(iv)], pollutant analysis shall be according to test procedures approved under 401 KAR 5:065, Section 2(8) [40 CFR 136] or other methods approved under 401 KAR 5:065, Section 2(9)-(10) [40 CFR subchapters N or O]. 401 KAR 5:065, Section 2(9) [Subchapter N] establishes the ELGs and 401 KAR 5:065, Section 2(10) [Subchapter O] establishes requirements for sewage sludge. When two or more approved analytical methods are available for a pollutant of concern, the method selected must be sufficiently sensitive to demonstrate compliance with the assigned effluent limitation. DOW includes a general statement requiring the permittee to utilize such methods. However, in cases where DOW has determined that a specific analytical method or method detection level (MDL) is required, language is included in the permit requiring that analytical method or MDL, e.g. EPA Method 200.8 for metals, and EPA Method 1631E for mercury.

8.3.2.3. Reporting Requirements

All permits must contain reporting requirements based upon the impact of the regulated activity. At a minimum, monitoring reports must be submitted annually. In accordance with 401 KAR 5:065, Section 2(4) [40 CFR 122.41(l)(4)], DOW requires analytical results to be reported on Discharge Monitoring Report (DMRs) form and submitted on a schedule commensurate with the frequency of monitoring, e.g. monthly monitoring equals monthly submission, etc.

8.3.2.4. Anti-backsliding Provision

Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(l)], when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit.

In the case of effluent limitations established on the basis of ELG, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

Exceptions to the anti-backsliding provision include:

(1) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
(2) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance;
(3) Technical mistakes or mistaken interpretations of law were made in issuing the permit under Section 402(a)(1)(b) of the CWA;
(4) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
(5) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or
(6) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may

reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

In no event may a permit be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under Section 303 applicable to such waters.

8.4. Standard Conditions

All permits issued by DOW include language specific to 401 KAR 5:065, Section 2(1) [40 CFR 122.41], schedules of compliance, and reopener clauses.

8.4.1. Conditions Applicable to All Permits

All permits shall either expressly or by reference include the conditions established by 401 KAR 5:065, Section 2(1) [40 CFR 122.41]. These standard conditions or "boiler plate language" address (1) duty to comply with all conditions of the permit, (2) duty to reapply, (3) need to halt or reduce activity not a defense, (4) duty to mitigate, (5) proper operation and maintenance of treatment facilities and systems, (6) permit actions, (7) property rights, (8) duty to provide information, (9) inspection And Entry, (10) Monitoring And Records, (11) Signatory Requirements, (12) Reporting Requirements, (13) Bypasses, And (14) Upsets.

8.4.2. Schedules of Compliance

All permits contain a general compliance schedule requiring the permittee to be in compliance with all conditions of the permit upon the effective date of the permit. 401 KAR 5:070, Section 2 [40 CFR 122.47] authorizes specific schedules of compliance for the first issuance of a permit to a new source or new discharger when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction and for water quality based effluent limitations for water quality standards adopted after July 1, 1977. Such schedules of compliance must include a final date for achieving compliance and interim compliance and reporting dates if the final compliance date is more than one year from the effective date of the permit.

8.4.3. Reopener Clause

In accordance with 401 KAR 5:070, Section 6(1) [40 CFR 122.62(a)(7)], a permit may be reopened for modification or revoked and reissued when required by the reopener conditions of 401 KAR 5:065, Section 2(4) [40 CFR 122.44(b)]. A 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;
(2) Controls any pollutant not limited in the permit; or
(3)This permit may be reopened to implement the findings of a reasonable potential analysis performed by the DOW.

A permit shall be modified, or alternatively revoked and reissued, if DOW determines surface waters are aesthetically or otherwise degraded by substances that:

(1) Settle to form objectionable deposits;
(2) Float as debris, scum, oil, or other matter to form a nuisance;
(3) Produce objectionable color, odor, taste, or turbidity;
(4) Injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;
(5) Produce undesirable aquatic life or result in the dominance of nuisance species; or
(6) Cause fish flesh tainting.

8.5. Special Conditions

Special conditions are used to address unique situations, incorporate preventative requirements and incorporate other programmatic requirements. Typical special conditions are (1) best management practices, (2) pretreatment programs, (3) sludge disposal, (4) combined sewer overflows, and (5) incorporation by reference.

8.5.1. Incorporation by Reference

When necessary to implement conditions or requirements that have not been directly developed through the permitting process, the permit may be conditioned to implement these conditions or requirements through incorporation by reference. Documents typically referenced by reference include: (1) consent orders, (2) agreed orders, (3) water quality certifications, and (4) other permits or authorizations.

8.6. State Conditions

State conditions are those conditions DOW has determined that are necessary to implement requirements promulgated under state or federal laws and regulations

8.6.1. 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.

8.6.2. Outfall Signage

KRS 224.18-760 establishes Kentucky as a member of the Ohio River Valley Water Sanitation Compact (ORSANCO). Article I of the Compact pledges faithful cooperation between the signatory states. Article IV authorizes the Commission to adopt, prescribe and promulgate rules, regulations and standards for administering and enforcing the Compact. Part V, Section A.3 of the ORSANCO pollution control standards for discharges to the Ohio River require that holders of an individual NPDES permit post and maintain a permanent marker having specific dimensions at each Ohio River outfall. DOW includes language in permits for discharges to the Ohio River requiring compliance with the ORSANCO signage requirements. For discharges to receiving waters other than the Ohio River DOW includes language recommending the installation of a permanent marker at each of the monitoring to better document and clarify these locations.

8.6.3. Disposal of Non-Domestic Wastes

The pass through or non-treatment by the wastewater treatment plant 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 wastewater treatment plant and should not be introduced and other environmentally sound methods for disposal 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. This requirement is consistent with the requirements of 401 KAR 5:065, Section 1(5) and 401 KAR 5:080, Section 2(3).

SECTION 9

DEFINITIONS, ABBREVIATIONS, AND ACROYNMS

9. DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

30-Day Average –The arithmetic mean of pollutant parameter values for samples collected in a period of 30 consecutive days.
401(a) Certification - A requirement of CWA section 401(a) that all federally issued permits be certified by the state in which the discharge occurs. The state certifies that the proposed permit will comply with state water quality standards and other state requirements.
7-Day Average – The arithmetic mean of pollutant parameter values for samples collected in a period of 7 consecutive days.
Acute Criteria - The highest instream concentration of a toxic substance or an effluent to which an organism can be exposed for one (1) hour without causing an unacceptable harmful effect.
Acute Effect - The effect of a stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect generally observed in 96 hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute effect is not always measured in terms of lethality.
Acute Toxicity - Lethality or other harmful effect sustained by either an indigenous aquatic organism or a representative indicator organism used in a toxicity test, due to a short-term exposure, of ninety-six (96) hours or less, to a specific toxic substance or mixture of toxic substances.
Acute Toxicity Unit - The reciprocal of the effluent dilution that causes the acute effect, or LC_{50}, by the end of the acute exposure period.
Acute-Chronic Ratio - The ratio of the acute toxicity, expressed as an LC_{50}, of an effluent or a toxic substance, to its chronic toxicity. It is used as a factor to estimate chronic toxicity from acute toxicity data.
Administrator - The Administrator of the United States Environmental Protection Agency, or an authorized representative
Adversely Affect or Adversely Change - To alter or change the community structure or function, to reduce the number or proportion of sensitive species, or to increase the number or proportion of pollution tolerant aquatic species so that aquatic life use support or aquatic habitat is impaired.
Annual Sewer User Survey – Annual survey conducted by a POTW to determine if conditions warrant the development and implementation of a pretreatment program.
Anti-backsliding - In general, a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards that are less stringent than those established in the previous permit.
Antidegradation - A policy developed and adopted as part of a state's water quality standards that ensures protection of existing uses and maintains the existing level of water quality where that water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This policy also includes special protection of water designated as Outstanding National Resource Waters.
Applicable Standards and Limitations - All standards and limitations to which a discharge or a related activity is subject pursuant to KRS Chapter 224 and 401 KAR Chapters 4 through 11, including effluent limitations, water quality standards, standards of performance, or toxic effluent standards.
Application - means the document submitted by an applicant to the cabinet that provides information used by the cabinet in the issuance of a permit or approval.
Approved POTW Pretreatment Program – A program administered by a POTW that means the requirements of 401 KAR 5:057, Sections 6 and 7.
Available – means located within the planning area and: (a) Located within one and zero-tenths (1.0) mile of a regional facility for a WWTP with an average daily design capacity larger than 1,000 gpd; or (b) For new construction if the distance is one and zero-tenths (1.0) mile or more, where it is cost-effective to connect as determined by a twenty (20) year present worth cost analysis.
Average Monthly Discharge Limitation - The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during that month divided by the number of daily discharges measured during that month.
Balanced Indigenous Community - A biotic community typically characterized by diversity, the capacity to sustain itself through cyclic seasonal changes, presence of necessary food chain species, and a lack of domination by pollution tolerant species. The community may include historically nonnative species introduced in connection with a program of wildlife management and species whose presence or abundance results from substantial,

irreversible environmental modification. Normally such a community does not include species whose presence or abundance is attributable to the introduction of pollutants that will be eliminated by compliance of all sources with 401 KAR 5:065, and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to 401 KAR 5:055.

Best Available Technology Economically Achievable (BAT) - Technology standard established by the CWA as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. BAT limitations in effluent guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Best Conventional Pollutant Control Technology (BCT) - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, oil and grease. The BCT is established in light of a two-part cost reasonableness test, which compares the cost for an industry to reduce its pollutant discharge with the cost to a POTW for similar levels of reduction of a pollutant loading. The second test examines the cost- effectiveness of additional industrial treatment beyond BPT. EPA must find limits which are reasonable under both tests before establishing them as BCT.

Best Management Practice (BMP) - (a) For agriculture operations, as defined by KRS 224.71-100(3); or (b) For all other purposes: 1. 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

Best Practicable Control Technology Currently Available (BPT) - The first level of technology standards established by the CWA to control pollutants discharged to waters of the U.S. BPT limitations in effluent guidelines are generally based on the average of the best existing performance by plants within an industrial category or subcategory.

Best Practicable Waste Treatment Technology (BPWTT) - Generally means the cost effective technology that can treat wastewater, combined sewer overflows, and non-excessive infiltration and inflow in POTWs to meet Secondary Treatment Standards, Water Quality Standards or more stringent state standards. 401 KAR 5:080, Section 2(3) [40 CFR 125.3(a)(1)] requires permits for POTWs to include BPWTT requirements no later than July 1, 1983. The determination of BPWTT is pollutant specific.

Best Professional Judgment (BPJ) - The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.

Bioassay - A test used to evaluate the relative potency of a chemical or a mixture of chemicals by comparing its effect on a living organism with the effect of a standard preparation on the same type of organism.

Biochemical Oxygen Demand (BOD) - 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.

Bypass - The intentional diversion of sewage or waste-streams from a portion of a facility or industrial user's treatment facility.

Calendar Day - For the purpose of this permit, any 24-hour period.

Capacity, Management, Operation, and Maintenance (CMOM) Program -

Carbonaceous Biochemical Oxygen Demand (CBOD) –The biochemical oxygen demand of carbonaceous sources. This differs from BOD in that BOD measures both nitrogenous and carbonaceous sources, whereas CBOD excludes nitrogenous sources (e.g., nitrifying bacteria) from determination through the addition of a nitrification inhibitor.

Certified Operator -An individual who holds an active certified operator’s certificate issued in accordance with 401 KAR 11:050.

Chronic Criteria - The highest instream concentration of a toxic substance or an effluent to which organisms are able to be exposed for ninety-six (96) hours without causing an unacceptable harmful effect.

Chronic Effect - The effect of a stimulus that lingers or continues for a relatively long period, often one-tenth of the life span or more. The measurement of a chronic effect can be reduced growth, reduced reproduction, and such, in addition to lethality.

Chronic Toxicity – Lethality, reduced growth or reproduction or other harmful effect sustained by either indigenous aquatic organisms or representative indicator organisms used in toxicity tests due to long-term exposures, relative to the life span of the organisms or a significant portion of their life span, due to toxic substances or mixtures of toxic substances.

Chronic Toxicity Unit (TU_C) - The reciprocal of the effluent dilution that causes twenty-five (25) percent inhibition of growth or reproduction to the test organisms by the end of the chronic exposure period.

Clean Water Act (CWA) - The Clean Water Act is a statute passed by the U.S. Congress to control water pollution. It was formerly referred to as the Federal Water Pollution Control Act of 1972 or Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500), 33 U.S.C. 1251 *et seq.*, as amended by: Public Law 96-483; Public Law 97-117; Public Laws 95-217, 97-117, 97-440, and 100-04.

Code of Federal Regulations (CFR) - A codification of the final rules published daily in the *Federal Register*. Title 40 of the CFR contains regulations for the protection of the environment.

Cold Water Aquatic Habitat (CAH) - Surface waters and associated substrate that are able to support indigenous aquatic life or self-sustaining or reproducing trout populations on a year-round basis.

Combined Sewers – A sewer or sewer line designed to carry storm water runoff as well as sanitary wastewater.

Combined Sewer Overflow – The flow from a combined sewer in excess of the interceptor or regulator capacity that is discharged into a receiving water without going to a POTW.

Compliance Schedule (or Schedule of Compliance) - A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the CWA and regulations.

Composite Sample - Sample composed of two or more discrete aliquots (samples). The aggregate sample will reflect the average water quality of the compositing or sample period.

Continuous Facility Discharge - A discharge that occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Conventional Pollutant –DOW defines as: 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. EPA defines as: BOD, TSS, fecal coliform bacteria, oil and grease, and pH

Criteria - Specific concentrations or ranges of values, or narrative statements of water constituents that represent a quality of water expected to result in an aquatic ecosystem protective of designated uses of surface waters. Criteria are derived to protect legitimate uses such as aquatic life, domestic water supply, and recreation and to protect human health.

Daily Maximum Concentration - The daily determination of concentration as an instantaneous maximum that cannot be exceeded by any sample.

Daily Precipitation Log - A daily record of precipitation levels maintained by the permittee to provide proof that a qualifying event has occurred within the preceding 24 hours. This may take the form of daily readings of local rain gages, National Oceanic and Atmospheric Administration data, etc.

Day - means a twenty-four (24) hour period.

Designated Uses - Those uses specified in water quality standards for each waterbody or segment whether they are being attained

Development Document - A report prepared during development of an effluent guideline by EPA that provides the data and methodology used to develop effluent guidelines and categorical pretreatment standards for an industrial category.

Direct Discharge - The discharge of a pollutant into waters of the commonwealth if the discharge is not included under the definition of indirect discharger and does not include a discharge of animal waste onto land by land application if the discharge does not reach the waters of the commonwealth.

Disappearing Stream - An intermittent or perennial surface stream that terminates and drains underground through caves, fractures, or swallets in the stream bed.

Discharge Monitoring Report (DMR) - The state approved form, including any subsequent additions, revisions, or modifications for the reporting of self- monitoring results by permittees.

Discharge or Discharge of a Pollutant - The addition of a pollutant or combination of pollutants to waters of the commonwealth from a point source.

Diversion - means a channel, embankment, or other manmade structure constructed for the purpose of diverting water from one area to another

Division - The Kentucky Division of Water, within the Department for Environmental Protection, Energy and Environment Cabinet.

Domestic - 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 - 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.

Domestic Water Supply (DWS) - Surface waters that with conventional domestic water supply treatment are suitable for human consumption through a public water system as defined in 401 KAR 8:010, culinary purposes, or for use in a food or beverage processing industry; and meet state and federal regulations under the Safe Drinking Water Act, as amended, 42 U.S.C. 300f - 300j-26.

Draft Permit -A document prepared pursuant to 401 KAR 5:075 indicating the cabinet's preliminary decision to issue or deny, modify, revoke and reissue, revoke, or reissue a permit. It includes a notice of intent to revoke a permit and a notice of intent to deny a permit as provided in 401 KAR 5:075. It does not include a proposed permit; a denial of a request for modification, revocation, and reissuance; or a denial of a request for revocation.

E. coli or "Escherichia coli" - An aerobic and facultative anaerobic gram negative, nonspore forming, rod shaped bacterium that can grow at forty-four and five tenths (44.5) degrees Celsius, that is ortho-nitrophenyl-B-D-galactopyranoside (ONPG) positive, and Methylumbelliferyl glucuronide (MUG) positive. It is a member of the indigenous fecal flora of warm-blooded animals.

Effluent Ditch - means that portion of a treatment system that is a discrete, person-made conveyance, either totally owned, leased or under valid easement by the discharger that transports a discharge to surface waters of the commonwealth.

Effluent Limitation - Any restriction imposed by the KPDES permit on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into waters of the Commonwealth.

Effluent Limitations Guidelines (Effluent Guidelines or ELG) - A regulation published by the Administrator under CWA section 304(b) to adopt or revise effluent limitations.

Environmental Protection Agency, "EPA", or "U.S.EPA" - The U.S. Environmental Protection Agency.

Eutrophication - The enrichment of a surface water by the discharge or addition of a nutrient.

Exceptional Water (EW) - A surface water categorized as exceptional by the cabinet pursuant to 401 KAR 10:030.

Existing Use – A legitimate use being attained in or on a surface water of the commonwealth on or after November 28, 1975, irrespective of its use designation.

Expanded Discharge - An increase in pollutant loading.

Facility - (a) As used in 401 KAR 5:005 or 401 KAR 5:006, a document issued by the cabinet that authorizes the permittee to construct, modify, or operate a facility; or (b) In 401 KAR 5:050 through 401 KAR 5:080 and if used in conjunction with activity, any KPDES point source, or any other facility, including land or related appurtenances, that is subject to regulation under the KPDES program.

Fact Sheet - A document that must be prepared for all draft KPDES permits, the document summarizes the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit and explains how the public may comment.

Fecal Coliform - The portion of the coliform group of bacteria that are present in the intestinal tract or the feces of warm-blooded animals. It includes organisms that are capable of producing gas from lactose broth in a suitable culture medium within twenty-four (24) hours at forty-four and five-tenths (44.5) degrees plus or minus two-tenths (0.2) degrees C.

Fundamentally Different Factors (FDF) - Those components of a petitioner’s facility that are determined to be so unlike those components considered by EPA during the effluent guidelines and pretreatment standards rulemaking that the facility is worthy of a variance from the effluent guidelines or categorical pretreatment standards that would otherwise apply.

Grab Sample -A sample taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without consideration of time.

Groundwater - 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.

Harmonic Mean Flow - The reciprocal of the mean of the reciprocal daily flow values.

Hazardous Substance - Any substance as designated under Part 116 pursuant to CWA section 311—that presents an imminent and substantial danger to the public health or welfare, including fish, shellfish, wildlife, shorelines, and beaches, upon discharge to navigable waters of the United States.

High Quality Water (HQ) - A surface water categorized as high quality by the cabinet pursuant to 401 KAR 10:030.

Impact - A change in the chemical, physical, or biological quality or condition of a surface water.

Impairment - A detrimental impact to a surface water that prevents attainment of a designated use.

Indigenous Aquatic Community - Naturally occurring aquatic organisms including bacteria, fungi, algae, aquatic insects, other aquatic invertebrates, reptiles, amphibians, and fishes. Under some natural conditions one (1) or more of the above groups may be absent from a surface water.

Industrial Wastewater Treatment Plant (IWWTP) - A privately owned WWTP with more than ninety (90) percent of the influent flow from sources of industrial waste.

Infiltration – Water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

Inflow – Water other than wastewater that enters a sewer system (including sewer service connections)from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from, infiltration.

Influent Concentration – The concentration of a pollutant in the raw wastewater received by a POTW.

Inhibition Concentration of Twenty-Five (25) Percent (IC_{25}) - The concentration that is determined by a linear interpolation method for estimating the concentration at which a twenty-five (25) percent reduction is shown in reproduction or growth in test organisms, and which statistically approximates the concentration at which an unacceptable chronic effect is not observed.

Injection - A type of land application in which the waste is placed directly beneath the land surface.

Instantaneous Maximum Limit - The maximum allowable concentration or other measure of a pollutant determined from the analysis of any discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.

Instantaneous Minimum Limit - The minimum allowable concentration or other measure of a pollutant determined from the analysis of any discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.

Interference – A discharge alone or in conjunction with other discharges from other sources that inhibits or disrupts: (1) a POTW's treatment process or operation that results in the violation or an increase in magnitude or duration of a violation of the POTW's KPDES permit or (2) a POTW's sludge process, use, or disposal that prevents the use or disposal of the sludge in compliance with federal, state, or local regulations.

Intermittent Water - A stream that flows only at certain times of the year.

Interstate Agency - An agency of which Kentucky and one (1) or more states is a member established by or under an agreement or compact, or any other agency, of which Kentucky and one (1) or more other states are members, having substantial powers or duties pertaining to the control of pollution as determined and approved by the secretary or administrator pursuant to 33 U.S.C. 1251 – 1387 or KRS Chapter 224.

Karst - The type of geologic terrain underlain by carbonate rocks where significant solution of rock has occurred due to flowing groundwater.

Kentucky Index of Biotic Integrity (KIBI) – Fish community assessment tool as incorporated by reference in 401 KAR 10:030.

Kentucky Intersystem Operational Permit (KISOP) – A permit issued pursuant to 401 KAR 5:005, Section 26 for the operation of a publicly or privately owned sewer system that discharges to a WWTP or a sewer system that is owned by another person.

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

Kentucky Pollutant Discharge Elimination System (KPDES) - The Kentucky program for issuing, modifying, revoking and reissuing, revoking, monitoring and enforcing permits to discharge, and imposing and enforcing pretreatment requirements.

KPDES Permit - A Kentucky Pollutant Discharge Elimination System permit issued to a facility, including a POTW, or activity pursuant to KRS Chapter 224 for the purpose of operating the facility or activity.

LC_1 - That concentration of a toxic substance or mixture of toxic substances that is lethal, or immobilizing if appropriate, to one (1) percent of the organisms tested in a toxicity test during a specified exposure period.

LC_{50} - That concentration of a toxic substance or mixture of toxic substances that is lethal, or immobilizing if appropriate, to fifty (50) percent of the species tested in a toxicity test during a specified exposure period.

Load Allocation (LA) - The portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished.

Macroinvertebrate Bioassessment Index (MBI) – Macroinvertebrate community assessment tool as incorporated by reference in 401 KAR 10:030.

Maintain - To preserve or keep in present condition by not allowing an adverse permanent or long-term change to water quality or to a population of an aquatic organism or its habitat.

Major Alteration - A coal mine for which the DOW determines that a new, altered, or increased discharge of pollutants has occurred after May 29, 1981, in connection with the mine for which the KPDES permit is being considered. In making this determination, the DOW shall take into account one or more of the following events: 1) Extraction of a coal seam not previously extracted by that mine; 2) Discharge into a drainage area not previously affected by wastewater discharges from the mine; 3) Extensive new surface disturbance at the mining operation; 4) Construction of a new shaft, slope, or drift; and 5) Such other factors as the Director deems relevant.

Major Facility - A KPDES facility or activity classified as a KPDES facility by the cabinet in cooperation with the regional administrator. Designation as a major industry as used in KRS 224.70-120, does not indicate automatic classification as a major facility.

Maximum Daily Effluent Limitation (MDEL) – The highest allowable daily discharge of a pollutant.

Measurement - The ability of the analytical method or protocol to quantify as well as identify the presence of the substance in question.

Method Detection Limit (MDL) - The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

Milligrams per Liter (mg/l) - The milligrams of substance per liter of solution and are equivalent to parts per million in water, assuming unit density.

Million Gallons per Day (or MGD) - A unit of flow commonly used for wastewater discharges. One million gallon per day is equivalent to 1.547 cubic feet per second.

Minimum Level (ML) - The level at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Mixing Zone - A domain of a water body contiguous to a treated or untreated wastewater discharge with quality characteristics different from those of the receiving water. The discharge is in transit and progressively diluted from the source to the receiving system. The mixing zone is the domain where wastewater and receiving water mix.

Monthly Average Concentration - The arithmetic average of all sample concentrations collected during a calendar month.

Monthly Operating Report (MOR) – A monthly report of the process control monitoring performed on a daily basis by the POTW.

National Pollutant Discharge Elimination System (NPDES) - The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA sections 307, 318, 402, and 405. The term includes approved program. NPDES permits regulate discharges of pollutants from point sources to waters of the United States. Such discharges are illegal unless authorized by an NPDES permit.

National Pretreatment Standard – Any regulation containing pollutant discharge limitations promulgated by the EPA.

Natural Resources Conservation Service (NRCS) - The organization created pursuant to 7 U.S.C. 6962 in the U.S. Department of Agriculture.

Natural Temperature - The temperature that would exist in waters of the commonwealth without the change of enthalpy of artificial origin, as contrasted with that caused by climatic change or naturally occurring variable temperature associated with riparian vegetation and seasonal changes.

Natural Water Quality - Those naturally occurring physical, chemical, and biological properties of waters.

Net Discharge - The amount of substance released to a surface water by excluding the influent value from the effluent value if both the intake and discharge are from and to the same or similar body of water.

New Source Performance Standards (NSPS) - Technology standards for facilities that qualify as new sources under § 122.2 and § 122.29. Standards consider that the new source facility has an opportunity to design operations to more effectively control pollutant discharges.

Nonconventional Pollutant - DOW defines as pollutant not considered to be a conventional pollutant, including priority pollutants identified in 401 KAR 5:060. EPA defines as all pollutants that are not included in the list of conventional or toxic pollutants in Part 40, includes pollutants such as chemical oxygen demand (COD), total organic carbon (TOC), nitrogen, and phosphorus.

Nonexcessive Infiltration – The quantity of flow which is less than 120 gallons per capita per day (domestic base flow and infiltration) or the quantity of infiltration which cannot be economically and effectively eliminated from a sewer system as determined in a cost-effectiveness analysis.

Nonexcessive Inflow – The maximum total flow rate during storm events which does not result in chronic operational problems related to hydraulic overloading of the treatment works or which does not result in a total flow of more than 275 gallons per capita per day (domestic base flow plus infiltration plus inflow). Chronic operational problems may include surcharging, backups, bypasses, and overflows.

Nonpoint Source - Diffuse pollution sources (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet). The pollutants are generally carried off the land by stormwater. Atmospheric deposition and hydromodification are also sources of nonpoint source pollution.

North American Industrial Classification System (NAICS) - The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

Nutrients - Chemical elements and compounds found in the environment that plants and animals need to grow and survive. Nutrients include compounds of nitrogen (nitrate, nitrite, ammonia, organic nitrogen) and phosphorus (orthophosphate and others), both natural and man-made.

Operator - A person involved in the operation of a facility or activity.

Outfall - For municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to waters of the Commonwealth, but does not include open conveyances connecting two (2) municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the Commonwealth and are used to convey waters of the Commonwealth.

Other Wastes - Sawdust, bark or other wood debris, garbage, refuse, ashes, offal, tar, oil, chemicals, acid drainage, wastes from agricultural enterprises, and other foreign substances not included within the definitions of industrial wastes and sewage that may cause or contribute to the pollution of waters of the Commonwealth.

Outstanding National Resource Water (ONRW) - A surface water categorized by the cabinet as an outstanding national resource water pursuant to 401 KAR 10:030.

Outstanding State Resource Water (OSRW) - A surface water designated by the cabinet as an outstanding state resource water pursuant to 401 KAR 10:031.

Overflow - Any intentional or unintentional diversion of flow from a facility.

Owner - A person who has legal ownership of a facility or activity regulated pursuant to 401 KAR Chapter 5.

Pass Through – A discharge that exits a POTW into waters of the Commonwealth in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation or increase in magnitude or duration of a violation of any requirement of the POTW's KPDES permit.

Percent Removal – A percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the raw wastewater influent pollutant concentration to the facility and 30-day average values of the effluent pollutant concentrations for a given time period.

Permitting Authority - The agency authorized to issue and enforces specific requirements of the NPDES permit program. The permitting authority may be EPA, or a state, territorial, or tribal agency that has been authorized under CWA section 402(b) to administer the NPDES program within its jurisdiction.

pH - A measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration in mg/L. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

Plan of Study - (1) a report that contains the following information required for a regional facility plan by 401 KAR 5:006, Section 4: (a) Planning area maps; (b) A discussion of the need for sewer service in the area; (c) Population projections; and (d) An estimation of the twenty (20) year cost by category; or (2) a plan required by the permit for the purposes of collecting data to determine background stream physical, chemical and biological conditions and discharge conditions.

Point Source - means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, culvert, tunnel, conduit, well, discrete fissure, container, wet seals, mine adits, seeps, or sumps, from which pollutants are or may be discharged.

Pollutant - Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended [42 U.S.C. 2011 *et seq.*)], heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean a. Sewage from vessels. b. Water, gas, or other material that is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the state in which the well is located, and if the state determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Pollutant, Conservative - Pollutants that do not readily degrade in the environment and that are mitigated primarily by dilution after entering receiving waters (e.g., metals, total suspended solids).

Pollutant, Non-Conservative - Pollutants that are mitigated by natural biodegradation or other environmental decay or removal processes in the receiving water after mixing and dilution have occurred (e.g., biochemical oxygen demand, pH, volatile organic compounds

Primary Contact Recreation Water (PCRW) - means those waters suitable for full body contact recreation during the recreation season of May 1 through October 31.

Primary Industry Category - Any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train,* 8 E.R.C. 2120 [D.D.C. 1976], modified 12 E.R.C. 1833 [D.D.C. 1979]); also listed in Appendix A of Part 122.

Primary Responsibility - Personal, first-hand responsibility to conduct or actively oversee and direct procedures and practices necessary to ensure that the wastewater treatment plant or wastewater collection system is operated in accordance with accepted practices and with KRS Chapter 224 and 401 KAR Chapters 5 and 11 having the authority to conduct the procedures and practices necessary to ensure that the wastewater system or any portion thereof is operated in accordance with accepted practices, laws, and administrative regulations of the commonwealth, or to supervise others in conducting these practices.

Priority Pollutants - Those pollutants considered to be of principal importance for control under the CWA based on the NRDC Consent Decree (*NRDC et al. v. Train*, 8 E.R.C. 2120 [D.D.C. 1976], modified 12 E.R.C. 1833 [D.D.C. 1979]); a list of the pollutants is provided as Appendix A to 40 CFR Part 423.

Privately-Owned Treatment Works - Any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a "POTW."

Process Wastewater - Any water [that], during manufacturing or processing, comes into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product.

Production-Based Standard - A discharge standard expressed in terms of pollutant mass allowed per unit of product manufactured or some other measure of production. 1996 PWM

Productive Aquatic Community - means an assemblage of indigenous aquatic life capable of reproduction and growth.

Professional Engineer or Engineer is defined by KRS 322.010(2).

Propagation - The continuance of a species by successful spawning, hatching, and development or natural generation in the natural environment, as opposed to the maintenance of the species by artificial culture and stocking.

Proposed Permit - A KPDES permit prepared after the close of the public comment period and, if applicable, any public hearing and administrative appeals that is sent to U.S. EPA for review before final issuance by the cabinet. A proposed permit is not a draft permit.

Public Water System - A system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "non-community water system."

RCRA - The Resource Conservation Recovery Act as amended, 42 U.S.C. 6901 - 6992k.

Recommencing Discharger - A source that recommences discharge after terminating operations.

Recurring Discharge - As it relates to a sewer system overflow, a discharge that occurs two (2) or more times in a twelve (12) month period.

Regional Administrator - The regional administrator of the Region IV office of the U.S. EPA or the authorized representative of the regional administrator.

Representative Indicator Organism - An aquatic organism designated for use in toxicity testing because of its relative sensitivity to toxicants and its widespread distribution in the aquatic environment.

Run-Off Coefficient - The fraction of total rainfall that will appear at a conveyance as run-off.

Sanitary Sewer Overflow – Untreated or partially treated sewage overflows from a sanitary sewer collection system.

SARA - The Superfund Amendments and Reauthorization Act, 42 U.S.C. 9601 – 9675.

Schedule of Compliance - 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.

Secondary Contact Recreation Waters (SCRW) - Those waters suitable for partial body contact recreation, with minimal threat to public health due to water quality.

Section 304(a) Criteria - Developed by EPA under authority of CWA section 304(a) based on the latest scientific information on the relationship that the effect of a constituent concentration has on particular aquatic species and/or human health. This information is issued periodically to the states as guidance for use in developing criteria.

Self-Monitoring - Sampling and analyses performed by a facility to determine compliance with effluent limitations or other regulatory requirements.

Seven-Q-Ten or "$7Q_{10}$" - That minimum average flow that occurs for seven (7) consecutive days with a recurrence interval of ten (10) years.

Significant Industrial User (SIU) – An indirect discharger that is the focus of control efforts under the national pretreatment program; includes all indirect dischargers subject to national categorical pretreatment standards, and all other indirect dischargers that contribute 25,000 gpd or more of process wastewater, or which make up five percent or more of the hydraulic or organic loading to a municipal treatment plant, subject to certain exceptions [40 CFR 403.3(t)]

Sinkhole - A naturally occurring topographic depression in a karst area. Its drainage is subterranean and serves as a recharge source for groundwater. It is formed by the collapse of a conduit or the solution of bedrock.
Site - As used in 401 KAR 5:060 through 5:080, the land or water area where a facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.
Source - A building, structure, facility, or installation from which there is or may be a discharge of pollutants.
Spill Prevention Control and Countermeasure Plan (SPCC) - A plan prepared by a facility to minimize the likelihood of a spill and to expedite control and cleanup activities if a spill occurs. Such plans are required for certain facilities under the Oil Pollution Prevention Regulations at 40 CFR 112.
Standard Industrial Classification (SIC) Code - A code number system used to identify various types of industries. A particular industry may have more than one SIC code if it conducts several types of commercial or manufacturing activities onsite. An online version of the 1987 SIC Manual <www.osha.gov/pls/imis/sic_manual.html> is available courtesy of the Occupational Safety & Health Administration (OSHA).
STORET - EPA's computerized STOrage and RETrieval water quality data base that includes physical, chemical, and biological data measured in waterbodies throughout the United States. 1996 PWM
Storm Water (or Stormwater) - Stormwater runoff, snow melt runoff, and surface runoff and drainage.
Supernatant - The water that accumulates in the upper portion of a lagoon and contains not greater than two and zero-tenths (2.0) percent total solids by dry weight analysis.
Surface Waters - 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 to be surface waters of the commonwealth.
Technology-Based Effluent Limitation (TBEL) – An effluent limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration or mass loading level. TBELs for POTWs are derived from the secondary treatment regulations in Part 133 or state treatment standards. TBELs for non-POTWs are derived from effluent guidelines, state treatment standards, or by the permit writer on a case-by-case basis using best professional judgment.
Tiered Permit Limits - Permit limits that apply to the discharge only when a certain threshold (e.g., production level), specific circumstance (e.g., batch discharge), or time frame (e.g., after 6 months, during the months of May through October) triggers their use. Adapted from 1996 PWM
Total Dissolved Solids (TDS) - The total dissolved solids (filterable residue) as determined by use of the method specified in 40 CFR Part 136.
Total Maximum Daily Load (TMDL) - The sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If best management practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.
Total Suspended Solids (TSS) - The total suspended solids (non-filterable residue) as determined by use of the method specified in 40 CFR Part 136.
Toxic Pollutant - Any pollutant listed as toxic under CWA section 307(a)(1) or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing CWA section 405(d).
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.
Toxicity Reduction Evaluation (TRE) - A site-specific study conducted in a step-wise process designed to identify the causative agent(s) of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.
Toxicity Test – A procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect on exposed test organisms of a specific chemical or effluent.

Treatability Manual - Five-set library of EPA guidance manuals that contain information related to the treatability of many pollutants. The manual may be used in developing effluent limitations for facilities and pollutants, which, at the time of permit issuance, are not subject to industry-specific effluent guidelines. The five volumes that comprise this series consist of Volume I – Treatability Data (EPA-600/8-80-042a); Volume II – Industrial Descriptions (EPA-600/8-80-042b); Volume III – Technologies (EPA-600/8-80- 042c); Volume IV – Cost Estimating (EPA-600/8-80-042d); and Volume V – Summary (EPA-600/8-80-042e).

UIC - Underground Injection Control.

Underground Injection Control Well - A well used for the emplacement of fluids into the subsurface.
excludes surface disturbances associated with the underground mine.

Upset - 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.

Variance - A mechanism or provision pursuant to 401 KAR Chapter 5 that allows modification to or waiver of the generally applicable effluent limitation requirements or time deadlines.

Warm Water Aquatic Habitat (WAH) - A surface water and associated substrate capable of supporting indigenous warm water aquatic life.

Water or Waters of the Commonwealth - 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

Water Quality Management Plan (WQM Plan) - (a) A plan consisting of initial plans produced in accordance with 33 U.S.C. 1288 and 1313 and certified and approved updates to those plans; or (b) A state or area-wide waste treatment management plan developed and updated in accordance with 33 U.S.C. 1281, 1285j, 1288, and 1313e and 40 CFR Part 130.

Water Quality Standard - An administrative regulation promulgated by the cabinet establishing the designated use of a surface water and the water quality criteria necessary to maintain and protect that designated use.

Water Quality-Based Effluent Limit(s) - Effluent limits derived from Kentucky's Water Quality Standards.

Well or Water Well - Any excavation or opening in the surface of the earth that is drilled, cored, bored, washed, driven, jetted, or otherwise constructed when the actual or intended use in whole or part of an excavation is the removal of water for any purpose, including but not limited to culinary and household purposes, animal consumption, food manufacture, use of geothermal resources for domestic heating purposes and industrial, irrigation, and dewatering purposes, but not including wells to be used for watering stock or for general farmstead use if the wells do not provide water for human consumption

Wellhead Protection Area - (a) The surface and subsurface area surrounding a water well, well field, or spring, supplying a public water system, through which pollutants are reasonably likely to move toward and reach the water well, well field, or spring; or (b) An area defined as a wellhead protection area in a county water supply plan.

Wetlands - Land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

Zone of Initial Dilution (ZID) - The limited area permitted by the cabinet surrounding or downstream from a discharge location where rapid, first-stage mixing occurs. The zone of initial dilution is the domain where wastewater and receiving water initially mix.

ACRONYMS AND ABBREVIATIONS			
Acronym or abbreviation	**Full phrase**	**Acronym or abbreviation**	**Full phrase**
7Q10	7-day, 10-year Low Flow	MGD	Million Gallons per Day
ACR	Acute-to-Chronic Ratio	ML	Minimum Level
AML	Average Monthly Limitation	N/A	Not Applicable
ASR	Alternative State Requirement	NEMI	National Environmental Methods Index

ACRONYMS AND ABBREVIATIONS			
Acronym or abbreviation	**Full phrase**	**Acronym or abbreviation**	**Full phrase**
AWL	Average Weekly Limitation	NOAA	National Oceanic and Atmospheric Administration
BAT	Best Available Technology Economically Achievable	NOEC	No Observable Effect Concentration
BCT	Best Conventional Pollutant Control Technology	NPDES	National Pollutant Discharge Elimination System
BPJ	Best Professional Judgment	O&G	Oil and Grease
BPT	Best Practicable Control Technology Currently Available	^{o}C	Degrees Centigrade or Celsius
CAH	Cold Water Aquatic Habitat	^{o}F	Degrees Fahrenheit
CFR	*Code of Federal Regulations*	ONRW	Outstanding National Resource Water
cfs	Cubic Feet per Second	OSRW	Outstanding State Resource Water
CSO	Combined Sewer Overflow	PCR	Primary Contact Recreation
CWA	Clean Water Act	RBP	Rapid Bioassessment Protocol
DMP	Division of Mine Permits	SCR	Secondary Contact Recreation
DMR	Discharge Monitoring Report	SIC	Standard Industrial Classification
DO	Dissolved Oxygen	SIU	Significant Industrial User
EL	Effluent Limit	SPCC	Spill Prevention Control and Countermeasure
ELG	Effluent Limitations Guidelines or Effluent Guidelines	SS	Settleable Solids
ELGF	Effluent Limitation Guideline Factor	SSO	Sanitary Sewer Overflow
EPA	U.S. Environmental Protection Agency	STORET	EPA Storage and Retrieval Database
ESA	Endangered Species Act	SU	Standard Units
EW	Exceptional Water	TBEL	Technology-Based Effluent Limit(s)
FR	*Federal Register*	TIE	Toxicity Identification Evaluation
FWS	U.S. Fish and Wildlife Service	TMDL	Total Maximum Daily Load
GC/MS	Gas Chromatography/Mass Spectroscopy	TRE	Toxicity Reduction Evaluation
gpd	Gallons per Day	TSD	Technical Support Document for Water Quality-based Toxics Control
HQ	High Quality Water	TSS	Total Suspended Solids
IC	Inhibition Concentration	TTO	Total Toxic Organics
KIBI	Kentucky Index of Biological Integrity	TU	Toxic Units
LA	Load Allocation	TU_A	Toxic Units – Acute
lbs/day	Pounds per Day	TU_c	Toxic Units – Chronic
LC_1	Lethal Concentration to 1% of test organisms	TWTDS	Treatment Works Treating Domestic Sewage
LC_{50}	Lethal Concentration to 50% of test organisms	U.S.C.	*United States Code*
LOEC	Lowest Observed Effect Concentration	UAA	Use Attainability Analysis
LTA	Long-Term Average	USGS	United States Geological Survey
LTCP	Long-Term Control Plan	WET	Whole Effluent Toxicity
MBI	Macroinvertebrate Bioassessment Index	WLA	Waste Load Allocation
MDEL	Maximum Daily Effluent Limitation	WQBEL	Water Quality-Based Effluent

ACRONYMS AND ABBREVIATIONS			
Acronym or abbreviation	**Full phrase**	**Acronym or abbreviation**	**Full phrase**
			Limit(s)
MDL	Method Detection Limit	WQS	Water Quality Standard(s)
MEP	Maximum Extent Practicable	µg/L	Micrograms per Liter
mg/L	milligrams per liter	ρCi/l	Pico Curies per Liter

KPDES

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0060577

AI NO.: 3335

AUTHORIZATION TO DISCHARGE UNDER THE

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

Oldham County Environmental Authority
700 West Jefferson Street
LaGrange, KY 40031

is authorized to discharge from a facility located at

Country Village WWTP
4619 Timothy Way
Crestwood, Oldham County, Kentucky

to receiving waters named

Unnamed Tributary at Latitude/Longitude 38°19'29", 85°26'17" to Currys Fork

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

This permit shall become effective on April 1, 2017.

This permit and the authorization to discharge shall expire at midnight, March 31, 2022.

Sara J Beard

January 27, 2017

Date Signed

Peter T. Goodmann, Director

Division of Water

DEPARTMENT FOR ENVIRONMENTAL PROTECTION

Division of Water, 300 Sower Boulevard, Frankfort, Kentucky 40601

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1. EFFLUENT AND MONITORING REQUIREMENTS

1.1. Monitoring Locations

The following table lists the outfalls authorized by this permit, the latitude and longitude of each, and the DOW assigned KPDES outfall number.

MONITORING LOCATIONS					
Number	**Type**	**Latitude (N)**	**Longitude (W)**	**Receiving Waters**	**Description of Outfall**
001	Direct	38°19'29"	85°26'17"	Unnamed Tributary to Currys Fork	Sanitary wastewater

1.2. Effluent Limitations and Monitoring Requirements

Beginning on the effective date and lasting through the term of this permit discharges from Outfall 001 shall comply with the effluent limitations.

EFFLUENT LIMITATIONS							MONITORING REQUIREMENTS	
Effluent Characteristic	**Loadings (lbs/day)**		**Concentrations (specify units)**				**Monitoring Frequency**	**Sample Type**
	Monthly Average	**Max Weekly Average**	**Minimum**	**Monthly Average**	**Max Weekly Average**	**Maximum**		
Effluent Flow (design capacity 0.060 MGD)	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
$CBOD_5$	12.5	18.8	N/A	25 mg/l	37.5 mg/l	N/A	1/Week	24-Hr Composite
TSS	15	22.5	N/A	30 mg/l	45 mg/l	N/A	1/Week	24-Hr Composite
Ammonia (as NH_3N)								
May 1 – October 31	2.0	3.0	N/A	4.0 mg/l	6.0 mg/l	N/A	1/Week	24-Hr Composite
November 1 – April 30	5.0	7.5	N/A	10 mg/l	15 mg/l	N/A	1/Week	24-Hr Composite
E. Coli (colonies/100 ml)[1]	N/A	N/A	N/A	130	240	N/A	1/Week	Grab
Dissolved Oxygen	N/A	N/A	7.0 mg/l	N/A	N/A	N/A	1/Week	Grab
pH (Standard Units)	N/A	N/A	6.0	N/A	N/A	9.0	1/Week	Grab
Total Residual Chlorine	N/A	N/A	N/A	0.011 mg/l	0.019 mg/l	N/A	1/Week	Grab
Total Phosphorus (mg/l)	N/A	N/A	N/A	Report	Report	N/A	1/Week	24-Hr Composite
Total Nitrogen (mg/l)[2]	N/A	N/A	N/A	Report	Report	N/A	1/Week	24-Hr Composite

[1] The effluent limitations for *Escherichia Coli* are 30-day and 7-day Geometric Means.
[2]Total Nitrogen is the summation of the analytical results for Total Nitrates, Total Nitrites, and Total Kjeldahl Nitrogen

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.

Samples and measurements taken in accordance with the requirements of specified Section 1.2 shall be representative of the volume and nature of the monitored discharge and shall be taken at nearest accessible point after final treatment, but prior to actual discharge to or mixing with the receiving waters or wastestreams from other outfalls.

SECTION 2
ADDITIONAL REQUIREMENTS

2. ADDITIONAL REQUIREMENTS

2.1. Schedule of Compliance

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

2.2. 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.

2.3. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit, i.e. the Method Detection Limit (MDL) shall be at or below the effluent limit. In that instance where an EPA-approved method does not exist that has an MDL at or below the established effluent limitation, the permittee shall: (1) use the method specified in the permit; or (2) the EPA-approved method with an MDL that is nearest to the established effluent limit.

2.4. Reporting of Monitoring Results

Monitoring results obtained during each monitoring period must be reported. The completed Discharge Monitoring Report (DMR) for each monitoring period must be submitted no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

2.4.1. Electronic Submittal

The completed DMR for each monitoring period must be entered into the Division of Water approved electronic system no later than midnight on the 28th day of the month following the monitoring period for which monitoring results were obtained. The use of mailed (hardcopy) DMRs shall cease and electronic DMR submittal shall begin with the initial DMR.

For information regarding electronic submittal of DMRs please visit the Division's website at http://water.ky.gov/permitting/Pages/netDMRInformation.aspx or contact the DMR Coordinator at (502) 564-3410.

2.5. 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.

This permit may be reopened to implement the findings of a reasonable potential analysis performed by the Division of Water.

This permit shall be reopened if Division of Water determines surface waters are aesthetically or otherwise degraded by substances that:

(a) Settle to form objectionable deposits;
(b) Float as debris, scum, oil, or other matter to form a nuisance;
(c) Produce objectionable color, odor, taste, or turbidity;

(d) Injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;
(e) Produce undesirable aquatic life or result in the dominance of nuisance species; or
(f) Cause fish flesh tainting.

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

2.6. Outfall Signage

The KPDES permit establishes monitoring points, effluent limitations, and other conditions to address discharges from the permitted facility. In an effort to better document and clarify these locations the permittee should place and maintain a permanent marker at each of the monitoring locations.

2.7. Discharge and Monitoring Point Accessibility

As stated in Section 3.9, the permittee shall allow authorized agency representatives to inspect the facility and collect samples to determine compliance. In order for such monitoring to be conducted either by the permittee or authorized agency personnel all monitoring and discharge points required by this permit shall be readily and safely accessible in all weather conditions.

2.8. Disposal of Non-Domestic Wastes

The pass through or non-treatment by the wastewater treatment plant 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 wastewater treatment plant and should not be introduced and other environmentally sound methods for disposal 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.

2.9. Certified Operators

Pursuant to 401 KAR 5:010, Section 1 a treatment plant with a design capacity of more than 50,000 gallons per day, but less than or equal to two (2) million gallons per day shall be under the primary responsibility of a certified operator holding an active Class II, III, or IV treatment certificate.

2.10. Connection to Regional Sewer System

This treatment unit is temporary and in no way supersedes the need of a regional sewer system. The permittee will eliminate the discharge and treatment unit by connection to a regional sewer system when it becomes available as defined in 401 KAR 5:002.

2.11. Certified Laboratory Requirements

All laboratory analyses and tests required to demonstrate compliance with the conditions of this permit shall be performed by Energy and Environment Cabinet (EEC)-certified general wastewater laboratories and EEC-certified field-only laboratories. Compliance with this requirement shall commence on January 1, 2015, for analyses and tests performed by a general wastewater laboratory and January 1, 2016, for field-only wastewater laboratories.

SECTION 3
STANDARD CONDITIONS

3. STANDARD CONDITIONS

The following conditions apply to all KPDES permits.

3.1. 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.

3.2. 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.

3.3. 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.

3.4. 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.

3.5. 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. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.6. 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.

3.7. Property Rights

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

3.8. 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.

3.9. 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.

3.10. Monitoring and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 401 KAR 5:065 Section 2(10) [40 CFR 503]), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;
(ii) The individual(s) who performed the sampling or measurements;
(iii) The date(s) analyses were performed;
(iv) The individual(s) who performed the analyses;
(v) The analytical techniques or methods used; and
(vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 401 KAR 5:065 Section 2(8) [40 CFR 136] unless another method is required under 401 KAR 5:065 Section 2(9) or (10) [40 CFR subchapters N or O].

(5) KRS 224.99-010 provides that any person who knowingly violates KRS 224.70-110 or other enumerated statutes, or who knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall be guilty of a Class D felony and, upon conviction, shall be punished by a fine of not more than $25,000, or by imprisonment, or both. Each day upon which a violation occurs shall constitute a separate violation.

3.11. 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 b 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

3.12. Reporting Requirements

3.12.1. 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.

3.12.2. 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.

3.12.3. 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].

3.12.4. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
(ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 401 KAR 5:065 Section 2(8) [40 CFR 136], or another method required for an industry-specific waste stream under 401 KAR 5:065 Section 2(9) or (10) [40 CFR subchapters N or O], the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
(iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

3.12.5. 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.

3.12.6. 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 40 CFR 122.44 (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.(See 40 CFR 122.44(g))

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

3.12.7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 3.12.4, 3.12.5, and 3.12.6, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 3.12.6.

3.12.8. 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.

3.13. Bypass

3.13.1. 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.

3.13.2. 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 3.13.1.

3.13.3. 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 3.12.6.

3.13.4. 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 3.13.3.

(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 3.13.3(i).

3.14. Upset

3.14.1. 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.

3.14.2. 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 3.14.3 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.

3.14.3. 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;
(iii) The permittee submitted notice of the upset as required in Section 3.12.6; and
(iv) The permittee complied with any remedial measures required under Section 3.4.

3.14.4. Burden of Proof

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

SECTION 4

ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

4. ABBREVIATIONS, ACRONYMS AND DEFINITIONS

Abbreviation or Acronym	Full Phrase	Definition
MGD	Million Gallons Per Day	A measure of flow
cfs	cubic feet per second	A measure of flow
SU	Standard Units	A measure of pH
mg/l	milligrams per liter	A measure of pollutant concentration (1000 milligrams = 1 gram)
µg/l	micrograms per liter	A measure of pollutant concentration (1000 micrograms = 1 milligram)
^{o}F	Degrees Fahrenheit	A measure of temperature
^{o}C	Degrees Centigrade or Celsius	A measure of temperature
N/A	Not Applicable	
lbs/day	pounds per day	A measure of pollutant loading
Grab	Grab Sample	A sample taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without consideration of time.
24-Hr Composite	24-hour Composite Sample	Sample composed of discrete equal volume aliquots (100 ml minimum) collected every 15 minutes over a 24-hour period and aggregated by an automated sampling device. The aggregate sample will reflect the average water quality of the compositing or sample period.