KPDES

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

7AUTHORIZATION TO DISCHARGE UNDER THE
KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NO.: KY0002020

AGENCY INTEREST NO.: 3148

Pursuant to Authority in KRS 224,

Kentucky Utilities Company
P.O. Box 32010
Louisville, Kentucky 40232

is authorized to discharge from a facility located at

Kentucky Utilities – E.W. Brown Generating Station
815 Dix Dam Road
Harrodsburg, Mercer County, Kentucky

to receiving waters named

Herrington Lake (Dix River)

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

This permit shall become effective on November 1, 2019.

This permit modification will become effective on August 1, 2022.

This permit and the authorization to discharge shall expire at midnight, October 31, 2024.

Date Signed: June 10, 2022

Carey M. Johnson, Director
Division of Water

THIS KPDES PERMIT CONSISTS OF THE FOLLOWING SECTIONS:

SECTION 1

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. Compliance Monitoring Locations (Outfalls)

The following table lists the outfalls authorized by this permit, the location and description of each, and the DOW assigned KPDES outfall number:

TABLE 1.

Outfall No.	Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
001	External	37.784741°	84.715331°	Herrington Lake (Dix River)	Landfill Inactive Areas Perimeter Access & Adjacent Drainage Areas Stormwater Runoff Landfill Liner Underdrain-Monitoring System Future Stormwater Runoff from Closed/Capped Auxiliary Ash Pond
002	External	37.786910°	84.712715°	Herrington Lake (Dix River)	Direct precipitation upon the Units 1-2 buildings roofs.
003	External	37.787529°	84.714465°	Herrington Lake (Dix River)	Unit 3 Cooling Tower Blowdown Direct precipitation to cooling towers and unit 3 building roof drains
004	Internal	37.788653°	84.713311°	Outfall 006	Boiler Chemical cleaning Wastewater
005	Plant Intake	37.783567°	84.709256°	Plant Intake from Herrington Lake	Raw Water Intake
006	External	37.782714°	84.715321°	Herrington Lake (Dix River)	Discharge to Herrington Lake from new Process Pond that contains flows from the following: FGD Wastewater (Future Outfall 007), Bottom Ash Sluice Water, Landfill Leachate, Low Volume Waste, Coal Pile Runoff, chemical (Outfall 004) and nonchemical metal cleaning wastewater, Abutment and Wick-Drain Sumps, Closed Main Ash Pond Toe Drain Sump, Auxiliary Ash Pond Dewatering Flows, and Stormwater.
006A	External	37.782714°	84.715321°	Herrington Lake (Dix River)	Additional requirements when the facility is dewatering from ATB's
007	Internal	37.787328°	84.716126°	Outfall 006	Treated FGD Wastewater
008	External	37.787492°	84.714583°	Herrington Lake (Dix River)	High Rain Overflow of Railway Stormwater/Wick-Drain

1.2. Effluent Limitations and Monitoring Requirements

1.2.1. Outfall 001

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

TABLE 2.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous
Total Suspended Solids	mg/l	N/A	N/A	N/A	Report	100	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab
Hardness (as mg/l $CaCO_3$)	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Arsenic	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Cadmium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Chromium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Copper	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Lead	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Mercury	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Nickel	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Silver	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Zinc	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab

1.2.2. Outfall 002

The stormwater runoff from the areas served by Outfall 002 shall be managed using appropriate Best Management Practices (BMPs) to prevent the discharge of pollutants from those areas.

1.2.3. Outfall 003

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 003 shall comply with the following effluent limitations:

TABLE 3.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Week	Instantaneous
Temperature	°F	N/A	N/A	N/A	Report	110	N/A	1/Week	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Week	Grab
Free Available Chlorine[1]	mg/l	N/A	N/A	N/A	0.2	0.5	N/A	1/Occurrence[2]	Multiple Grab[5]
Total Residual Chlorine	mg/l	N/A	N/A	N/A	Report	0.019	N/A	1/Occurrence[2]	Multiple Grab[5]
Total Residual Oxidants[1,6]	mg/l	N/A	N/A	N/A	Report	0.2	N/A	1/Occurrence[3]	Multiple Grab[5]
Oxidant Discharge Time[1]	Min/unit/day	N/A	N/A	N/A	N/A	120	N/A	1/Occurrence[4]	Log
Total Chromium[1]	mg/l	N/A	N/A	N/A	0.2	0.2	N/A	1/Year	Grab
Total Zinc[1]	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Year	Grab
Priority Pollutants[1,7]	No Detectable Amount							1/Year	Calculated[8]

[1]Sampling of cooling tower blowdown must be taken at the nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.

[2] The measurement frequency "Occurrence" means only during periods of chlorination addition to cooling water, but no more frequent than once per week.

[3] The measurement frequency "Occurrence" means only during periods of oxidation addition to cooling water, but no more frequent than once per week.

[4]The measurement frequency "Occurrence" means during periods of chlorination or oxidation addition to cooling water, but no more frequent than once per week.

[5]The sample type 'Multiple Grab' means grab samples collected at the approximate beginning of oxidant discharge and once every fifteen (15) minutes thereafter until the end of the oxidant discharge.

[6]The term Total Residual Oxidants (TRO) means the value obtained by using the amperometric titration or DPD methods for Total Residual Chlorine described in 40 CFR Part 136. In the event of addition of an oxidant other than Chlorine, the permittee shall receive prior approval from the DOW permitting staff before the initial use. TRO monitoring and limits only apply if the applicant chooses to utilize an oxidant other than Chlorine.

[7]Priority Pollutants are those contained in chemicals added for cooling tower maintenance and shall be monitored annually by grab sample or by engineering calculations. The results of the analyses/engineering calculations shall be totaled and reported as a single concentration on the DMR. The laboratory bench sheets/engineering or electronic equivalent calculations showing the results for each pollutant shall be attached to the DMR. The term priority pollutants means the 126 priority pollutants listed in 40 CFR Part 423 Appendix A except total chromium and total zinc.

TABLE 3.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
[8]Compliance with the limitations, for the 126 priority pollutants, in paragraph (b)(10) of 40 CFR 423.15 may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.									
Neither free available chlorine nor total residual chlorine or oxidants may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available chlorine or total residual chlorine or oxidants at any one time unless the utility can demonstrate to the DOW that the units in a particular location cannot operate at or below this level of chlorination or oxidant addition.									

1.2.4. Outfall 004

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 004 shall comply with the following effluent limitations:

TABLE 4.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Batch[1]	Calculated
Total Recoverable Copper	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch[1]	Grab
Total Recoverable Iron	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch[1]	Grab
[1]Monitoring shall be conducted once per metal cleaning operation.									
Metal cleaning waste shall mean any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning. In accordance with the conditions of the previous permits, the permittee is allowed to discharge Non-Chemical metal cleaning wastewater directly to the ash pond or process pond without limitations or monitoring requirements, pursuant to the Jordan Memorandum. Monitoring is required only when chemical metal cleaning activities are being performed.									

1.2.5 Outfall 005

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 005 shall comply with the following Intake limitations:

TABLE 5.

INTAKE LIMITATIONS								MONITORING REQUIREMENTS	
Intake Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow [1]	MGD	Report	Report	N/A	N/A	N/A	N/A	Daily	Calculated
Temperature[1]	°F	N/A	N/A	N/A	Report	Report	N/A	Daily	Grab
[2]Cooling Water Intake Inspection	Fail=1 Pass=0	N/A	N/A	N/A	N/A	N/A	Report[3]	1/Week	Inspection[4]
[1]Intake from Stream									
[2]Weekly monitoring of the cooling water intake system shall be performed, during the period the cooling water intake structure is in operation, to ensure that the design and construction technology required by §125.94 (i.e., intake flow commensurate with closed cycle cooling) is functioning as designed and is being appropriately maintained and operated.									
[3]If the intake flow through the screen is not commensurate with closed cycle cooling a "1" is to be reported. If intake flow is commensurate with closed cycle cooling "0" is to be reported.									
[4]This inspection may take the form of either visual inspections or the use of remote monitoring devices.									
An annual certification statement signed by the authorized representative shall be submitted to the DOW surface water permits branch no later than January 31st for the previous year. See Section 5.8.3.3. "Reporting Requirements for Cooling Water Intake" for additional details.									

1.2.6. Outfall 006

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 006 shall comply with the following effluent limitations:

TABLE 6.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Effluent Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	2/Month	Instantaneous
Flow, process wastewater[1,3]	GPD	N/A	33,339[2]	N/A	N/A	N/A	N/A	Continuous	Metered
Total Suspended Solids									
Tier 1	mg/l	N/A	N/A	N/A	30.0	83.0	N/A	2/Month	Grab

TABLE 6.									
EFFLUENT LIMITATIONS								**MONITORING REQUIREMENTS**	
Effluent Characteristic	**Units**	**Loadings (lbs./day)**		**Concentrations**				**Frequency**	**Sample Type**
		Monthly Average	**Daily Maximum**	**Minimum**	**Monthly Average**	**Daily Maximum**	**Maximum**		
Tier 2[3]	mg/l	N/A	N/A	N/A	30.0	81.7	N/A	2/Month	Grab
Oil & Grease									
Tier 1	mg/l	N/A	N/A	N/A	12.7	17.2	N/A	2/Month	Grab
Tier 2[3]	mg/l	N/A	N/A	N/A	12.6	17.5	N/A	2/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	2/Month	Grab
Total Recoverable Mercury[4]	mg/l	N/A	N/A	N/A	0.000051	0.0014	N/A	1/Month	Grab
Total Recoverable Cadmium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Selenium	mg/l	N/A	N/A	N/A	0.075[5]	Report	N/A	1/Quarter	Grab
Total Recoverable Selenium (Fish Tissue)	mg/kg dry weight	N/A	N/A	N/A	N/A	N/A	8.6	([3])	([3])
Total Recoverable Thallium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Hardness (as mg/l $CaCO_3$)	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Acute WET[6]	TU_A	N/A	N/A	N/A	N/A	N/A	1.00	1/Quarter	([7])

[1]This represents discharge from the bottom ash transport system

[2]30 – Consecutive day rolling average

[3]These limits shall become effective on July 1, 2023 and are representative of the allowed 10% bottom ash purge and the FGD system being converted to a zero discharge.

[4]These limitations shall apply on the date specified in the compliance schedule for this effluent (see Section 5.1.1) and continue in effect for the remainder of the permit. Until the limitations are effective, the permittee shall report monitored values for both the monthly average requirements and daily maximum requirements.

[5]Should the monthly average concentration of Total Recoverable Selenium exceed 0.075 mg/l, see permit Section 5.10 for additional requirements.

[6]WET – Whole Effluent Toxicity

[7]Two (2) discrete grab samples shall be collected 12 hours apart

The reported results from Outfall 006A "Additional Requirements during Ash Pond Dewatering" shall be used as compliance results for this outfall as well.

1.2.7. Outfall 006A (Additional Requirements during Ash Pond Dewatering through Outfall 006)

This outfall is for the additional monitoring requirements if any Auxiliary Pond dewatering takes place during the month through Outfall 006. The facility shall give the DOW regional office notice prior to commencement of any dewatering activity. If the facility does not dewater during the month, they can report NODI Code 9 "Conditional Monitoring-Not Required This Period" on that months DMR for this outfall. Beginning on the effective date and lasting until the facilities high-rate multiport diffuser is installed or through the term of this permit, discharges from Outfall 006A shall comply with the following effluent limitations:

TABLE 7.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Hardness (as mg/l $CaCO_3$)	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Month	Grab
Total Recoverable Antimony[1]	mg/l	N/A	N/A	N/A	0.195	Report	N/A	1/Month	Grab
Total Recoverable Arsenic[1]	mg/l	N/A	N/A	N/A	1.03	1.03	N/A	1/Month	Grab
Total Recoverable Beryllium[1]	mg/l	N/A	N/A	N/A	0.140	Report	N/A	1/Month	Grab
Total Recoverable Cadmium[1]	mg/l	N/A	N/A	N/A	0.0051	0.023	N/A	1/Month	Grab
Total Recoverable Chromium[1]	mg/l	N/A	N/A	N/A	3.49	Report	N/A	1/Month	Grab
Total Recoverable Copper[1]	mg/l	N/A	N/A	N/A	0.131	0.131	N/A	1/Month	Grab
Total Recoverable Iron[1]	mg/l	N/A	N/A	N/A	10.5	12.2	N/A	1/Month	Grab
Total Recoverable Lead[1]	mg/l	N/A	N/A	N/A	0.106	1.20	N/A	1/Month	Grab
Total Recoverable Nickel[1]	mg/l	N/A	N/A	N/A	1.35	4.08	N/A	1/Month	Grab
Total Recoverable Selenium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Month	Grab
Total Recoverable Silver[1]	mg/l	N/A	N/A	N/A	Report	0.079	N/A	1/Month	Grab
Total Recoverable Thallium[1]	mg/l	N/A	N/A	N/A	0.007	Report	N/A	1/Month	Grab
Total Recoverable Zinc[1]	mg/l	N/A	N/A	N/A	1.03	1.03	N/A	1/Month	Grab
Acute WET[2]	TU_A	N/A	N/A	N/A	N/A	N/A	Report	1/Month	([3])

[1]The Monthly Average and Daily Maximum concentrations for these pollutants are not effluent limitations, but water quality triggers that, if exceeded for two (2) consecutive dewatering months (this includes even if the facility stops dewatering in-between the two months), require permittee action. See the Best Management Practices Plan Section - Additional BMP Conditions Subsection for additional requirements related to these triggers.

[2]WET – Whole Effluent Toxicity

[3]Two (2) discrete grab samples shall be collected 12 hours apart

1.2.8. Outfall 007

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 007 shall comply with the following effluent limitations:

TABLE 8.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow [1]	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Instantaneous
Total Recoverable Arsenic[1]	µg/l	N/A	N/A	N/A	8	18	N/A	1/Month	Grab
Total Recoverable Mercury[1]	ng/l	N/A	N/A	N/A	34	103	N/A	1/Month	Grab
Total Recoverable Selenium[1]	µg/l	N/A	N/A	N/A	29	70	N/A	1/Month	Grab
Nitrate/nitrite as N[1]	mg/l	N/A	N/A	N/A	3	4	N/A	1/Month	Grab
[1]These limits and monitoring requirements do not become effective till July 1st, 2023									

1.2.9. Outfall 008

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 008 shall comply with the following effluent limitations:

TABLE 9.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Instantaneous
Total Suspended Solids	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	Report	N/A	N/A	Report	1/Quarter	Grab
Hardness (as mg/l $CaCO_3$)	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Arsenic	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Cadmium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Chromium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Copper	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Lead	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab

TABLE 9.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Total Recoverable Mercury	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Nickel	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Silver	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Zinc	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Until this outfall is constructed and the high rain overflow wastewater starts discharging through this outfall NODI Code 9 “Conditional Monitoring-Not Required This Period” can be used for the monitoring requirements for this outfall.									

1.3. Standard Effluent Requirements

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

SECTION 2

STANDARD CONDITIONS

2. STANDARD CONDITIONS

The following conditions apply to all KPDES permits.

2.1. 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.

2.2. 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.

2.3. 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.

2.4. 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.

2.5. 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.

2.6. 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.

2.7. Property Rights

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

2.8. 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.

2.9. 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.

2.10. 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:

a) The date, exact place, and time of sampling or measurements;
b) The individual(s) who performed the sampling or measurements;
c) The date(s) analyses were performed;
d) The individual(s) who performed the analyses;
e) The analytical techniques or methods used; and
f) 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 for not less than one (1) year and not more than five (5) years, or by both fine and imprisonment for each separate violation. Each day upon which a violation occurs shall constitute a separate violation.

2.11. 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 be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment, or by fine and imprisonment, for each separate violation. Each day upon which a violation occurs shall constitute a separate violation.

2.12. Reporting Requirements

2.12.1. 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:

(1) 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 CFR 122.29(b)]; or

(2) 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)].

(3) 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.

2.12.2. 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.

2.12.3. 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].

2.12.4. Monitoring Reports

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

(1) 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.

(2) 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.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

2.12.5. 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.

2.12.6. Twenty-four-Hour Reporting

(1) 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.

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

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

(3) The Director may waive the written report on a case-by-case basis under 40 CFR 122.41 (l), if the oral report has been received within twenty-four (24) hours.

2.12.7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 2.12.1, 2.12.4, 2.12.5 and 2.12.6, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 2.12.6.

2.12.8. 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.

2.13. Bypass

2.13.1. Definitions

(1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

(2) 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.

2.13.2. 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 2.13.3 and 2.13.4.

2.13.3. Notice

(1) 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.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section 2.12.6.

2.13.4. Prohibition of Bypass

(1) 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 2.13.3.

(2) 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 2.13.4

2.14. Upset

2.14.1. 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.

2.14.2. 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 2.14.3 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.

2.14.3. 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:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated; and

(3) The permittee submitted notice of the upset as required in Section 2.12.6; and

(4) The permittee complied with any remedial measures required under Section 2.4.

2.14.4. Burden of Proof

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

SECTION 3

BEST MANAGEMENT PRACTICES PLAN (BMPP) REQUIREMENTS

3. BEST MANAGEMENT PRACTICES PLAN (BMPP) REQUIREMENTS

The permittee shall develop and implement a Best Management Practices Plan (BMPP) consistent with 401 KAR 5:065, Section 2(4).

3.1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.1-010(35) and who have operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant, or (2) an environmental emergency, as defined in KRS 224.1-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

3.2. Plan

The permittee shall develop and implement a BMPP consistent with 401 KAR 5:065, Section 2(4) pursuant to KRS 224.70-110, which prevents or minimizes the potential for the release of "BMP pollutants" from ancillary activities through site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage.

3.3. Implementation

The permittee shall implement the BMPP upon of the commencement of regulated activity. Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be implemented as soon as possible.

3.4. General Requirements

The BMPP shall:

(1) Be documented in narrative form, and shall include any necessary plot plans, drawings, or maps.

(2) Establish specific objectives for the control of toxic and hazardous pollutants.

   a. Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

   b. Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants", the plan should include a prediction of the direction, rate of flow, and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.

(3) Establish specific BMPs to meet the objectives identified under paragraph (2) b of this section, addressing each component or system capable of causing a release of "BMP pollutants".

(4) Include any special conditions established in part b of this section.

(5) Be reviewed by engineering staff and the site manager.

3.5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document", and shall include the following baseline BMPs as a minimum:

(1) BMP Committee

(2) Reporting of BMP Incidents
(3) Risk Identification and Assessment
(4) Employee Training
(5) Inspections and Records
(6) Preventive Maintenance
(7) Good Housekeeping
(8) Materials Compatibility
(9) Security
(10) Materials Inventory

3.6. SPCC Plans

The BMPP may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act and 40 CFR Part 112, and may incorporate any part of such plans into the BMPP by reference.

3.7. Hazardous Waste Management

The permittee shall assure the proper management of solids and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.

3.8. Documentation

The permittee shall maintain a copy of the BMPP at the facility and shall make the plan available upon request to EEC personnel.

3.9. BMPP Modification

The permittee shall modify the BMPP whenever there is a change in the facility or change in the operation of the facility that materially increases the potential for the release of "BMP pollutants".

3.10. Modification for Ineffectiveness

The BMPs and the BMPP shall be reviewed and appropriate modifications implemented to utilize other practicable measures if any of the following events occur:

(1) As a result of either a fixed or episodic event-driven evaluation, the permittee determines the selected BMPs are not achieving the established performance benchmarks;

(2) As a result of deficiencies identified during an evaluation or inspection by Cabinet personnel; or

(3) A release of any petroleum-based product, toxic or hazardous substance, except for releases contained within secondary containment.

3.11. Periodically Discharged Wastewater Not Specifically Covered By Effluent Conditions

The permittee shall include in this BMP plan procedures and controls necessary for the handling of periodically discharged wastewaters such as intake screen backwash, meter calibration, fire protection, hydrostatic testing water, water associated with demolition projects, etc.

3.12. Additional BMP Conditions during Dewatering

3.12.1. BMP Evaluation Triggers

Water Quality Trigger: The monthly average and daily maximum discharge concentrations for the listed metals in tables 3 and 4 are triggers that once exceeded for two (2) consecutive dewatering months (this

includes even if the facility stops dewatering in-between the two months), requires the permittee to initiate an evaluation of the currently employed BMP's related to dewatering.

WET Trigger: The permittee shall review the BMPs currently employed, related to dewatering, when the findings of a Toxicity Reduction Evaluation (TRE) indicates that one or more of the pollutants monitored was the toxicant.

3.12.2. Evaluation of BMPs

The permittee shall notify DOW within five (5) days that a BMP evaluation trigger has occurred and within forty five (45) days shall complete a BMP evaluation.

At a minimum, the findings of this evaluation shall include:

1) A list of known, practicable control measures;
2) The order of implementing identified control measures;
3) Monitoring plans and schedules to support evaluating the effectiveness of each control measure;
4) A description of decision-making criteria and timelines for evaluating whether a particular measure has been effective and whether additional or different measures are required;
5) Identification of a process for revising the BMP Plan (BMPP) should data obtained from monitoring the effectiveness of particular control measures warrant such revisions; and
6) Any proposed changes to the BMPP shall be implemented within 90 days of the finalization of evaluation.

SECTION 4

WET TESTING REQUIREMENTS

4. WET TESTING REQUIREMENTS

The permittee shall initiate, within thirty (30) days of the effective date of this permit, or continue the series of tests described below to evaluate wastewater toxicity of the discharge from Outfall 006.

4.1. Sampling Requirements

Tests shall be conducted on each of two grab samples collected over the period of discharge,(i.e., discrete sample #1 taken at commencement of discharge, sample #2 taken approximately 12 hours later, sooner if discharge is expected to cease). The elapsed time between the collection of each grab sample and the initiation of each test shall not exceed 36 hours.

4.2. Test Requirements

The Acute WET test requirements consists of two 48-hour static non-renewal toxicity tests with water flea (Ceriodaphnia dubia, Daphnia magna, or Daphnia pulex) and two 48-hour static non-renewal toxicity tests with fathead minnow (Pimephales promelas) performed on discrete grab samples of 100% effluent ($1.00TU_A$) at the frequency specified. Testing of each sample shall begin within 36 hours of the collection of that sample.

4.3. Serial Dilutions

Effluent concentrations for the tests must include the percent effluent required by the permit and at least four additional effluent concentrations.

For a required percent effluent of 100%, test concentrations shall be 20%, 40%, 60%, 80% and 100%.

For a required percent effluent less than 100% but greater than or equal to 75%, the test concentrations shall include the required percent effluent, two (2) concentrations below that are based on a 0.5 dilution factor, and two (2) concentrations above: one (1) at mid-point between 100% and the required percent effluent, and one (1) at 100% effluent.

For a required percent effluent less than 75%, test concentrations shall include the required percent effluent, two (2) concentrations below on a 0.5 dilution factor, and two (2) concentrations above the required percent effluent based on a 0.5 dilution factor, if possible; otherwise, one (1) at mid-point between 100% and the required percent effluent, and one (1) at 100% effluent.

Selection of different effluent concentrations must be approved by DOW prior to testing. Controls shall be conducted concurrently with effluent testing using synthetic water.

4.4. Controls

Control tests shall be conducted concurrent with effluent testing using synthetic water. The analysis will be deemed reasonable and good only if the minimum control requirements are met.

Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period.

Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test.

Control survival is 90% or greater in test organisms held in synthetic water.

4.5. Test Methods

All test organisms, procedures, and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-

821-R-02-012 (5th edition), the most recently published edition of this publication, or as approved in advance by DOW.

4.6. Reduction to Single Species Testing

After at least six (6) consecutive passing toxicity tests using both, the water flea and the fathead minnow, a request for testing with only the most sensitive species may be submitted to DOW. Upon approval, the most sensitive species may be considered as representative and all subsequent compliance tests may be conducted using only that species unless directed at any time by DOW to change or revert to both.

4.7. Reduction in Monitoring Frequency

The permittee may request a reduction in the frequency of WET testing upon demonstration that no test failures, incomplete tests, or invalid tests occurred during the following specified timeframes:

(1) Existing facilities: four (4) consecutive quarters;
(2) New or expanded facilities: eight (8) consecutive quarters.

New and expanded facilities are defined in the above Requirements Effective Dates Section of this permit. In the event of the failure of an annual test or non-submission by January 28th of the year following the completion of the test, the permittee will again be subject to quarterly WET testing.

4.8. Reporting Requirements

Results of all toxicity tests conducted with any species shall be reported according to the most recent format provided by DOW (See the Section for Submission of DMRs of this permit). Notification of failed test shall be made to DOW within five days of test completion. Test reports shall be submitted to DOW within thirty (30) days of completion. A control chart including the most recent reference toxicant test endpoints for the effluent test method (minimum of 5, up to 20 if available) shall be part of the report.

4.9. Test Results

If noncompliance occurs in an initial test, the permittee shall repeat the test using new samples. Results of this second round of testing will be used to evaluate the persistence of the toxic event and the possible need for a Toxicity Reduction Evaluation (TRE).

Noncompliance is demonstrated if the LC_{50} is less than 100% effluent. If noncompliance occurs in an initial test, the permittee shall repeat the test using new grab samples collected approximately twelve (12) hours apart. Sampling must be initiated within ten (10) days of completing the failed test. The second round of testing shall include both species unless approved for only the most sensitive species by DOW.

4.10. Accelerated Testing

If the second round of testing also demonstrates noncompliance, the permittee will be required to perform accelerated testing as specified in the following paragraphs.

Complete four (4) additional rounds of testing to evaluate the frequency and degree of toxicity within sixty (60) days of completing the second failed round of testing. Results of the initial and second rounds of testing specified above plus the four (4) additional rounds of testing will be used in deciding if a TRE shall be required.

If results from any two (2) of six (6) rounds of testing show a significant noncompliance with the Toxicity limit, i.e., ≥1.2 times the TU, or results from any four of the six tests show toxicity as defined above, a TRE will be required.

The permittee shall provide written notification to DOW within five (5) days of completing the accelerated testing, stating that: (1) toxicity persisted and that a TRE will be initiated; or (2) that toxicity did not persist and normal testing will resume.

Should toxicity prove not to be persistent during the accelerated testing period, but reoccur within twelve (12) months of the initial failure at a level ≥ 1.2 times the TU, then a TRE shall be required.

4.11. WET TRE

Having determined that a TRE is required, the permittee shall initiate and/or continue at least monthly testing with both species until such time as a specific TRE plan is approved by DOW. A TRE plan shall be developed by the permittee and submitted to DOW within thirty (30) days of determining a TRE is required. The plan shall be developed in accordance with the most recent Environmental Protection Agency (EPA) and DOW guidance. Questions regarding this process may be submitted to DOW.

The TRE plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE plan will establish an implementation schedule to begin immediately upon approval by DOW, to have duration of at least six (6) months, and not to exceed twenty-four (24) months. The implementation schedule shall include quarterly progress reports being submitted to DOW, due the last day of the month following each calendar quarter.

Upon completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and actions taken or to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed one-hundred-eighty (180) days.

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the planned conclusion of the TRE, the permittee will notify DOW within five (5) days of making that determination and take appropriate actions to implement the solution within one-hundred-eighty (180) days of that notification.

SECTION 5

OTHER CONDITIONS

5. OTHER CONDITIONS

5.1. Schedule of Compliance

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

5.1.1. Outfall 006

The permittee shall comply with all Outfall 006 effluent limitations by the effective date of the permit except as noted below. At the permittee's request, the DOW has developed a compliance schedule consistent with 40 CFR 122.47 (as incorporated in 401 KAR 5:050, Section 3), for meeting the monthly average requirements for Total Recoverable Mercury at Outfall 006. Outfall 006 consists of existing Auxiliary Ash Pond legacy wastewater including ash sluice flows and FGD dewatering flows. While the new process wastewater treatment system-FGD wastewater treatment system will operate by late 2019 to reduce mercury concentrations below the required limit for new flows, the large volume of legacy wastewater will required a significant amount of time to manage. The Auxiliary Ash Pond water that needs to be dewatered through the new Process Pond discharge structure is estimated to be 5-10 million gallons and may require 6+ months to gradually comingle these legacy flows with treated wastewaters, while remaining in compliance with the limits for the blended flows. The compliance schedule request is contained within the information submitted by the permittee on May 24, 2019. The milestones and compliance dates in the following schedule of compliance are based on the request and timelines provided there in. The following table outlines each of the compliance schedule's milestones and the corresponding compliance duration:

TABLE 10.

Milestone	Compliance Date
The permittee shall achieve compliance with the Total Recoverable Mercury limitation.	As soon as possible, but not later than August 1, 2020

5.2. 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.

5.3. Continuation of Expiring Permit

This permit shall be continued in effect and enforceable after the expiration date of the permit provided the permittee submits a timely and complete application in accordance with 401 KAR 5:060, Section 2(4).

5.4. Antidegradation

For those discharges subject to the provisions of 401 KAR 10:030 Section, 1(3)(b)5, the permittee shall install, operate, and maintain wastewater treatment facilities consistent with those identified in the SDAA submitted with the KPDES permit application.

5.5. 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.

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

5.6. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals to the Division of Water for review and establishment of appropriate control parameters.

5.7. Outfall Signage

This 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.

5.8. Cooling Water Intake Requirements

5.8.1 Authority to Operate

The permittee shall at all times properly operate and maintain all water intake facilities. The permittee shall give advance notice to the Division of any planned changes in the location, design, operation, or capacity of the intake structure. The permittee is authorized to use the cooling water intake system which consists of the following:

Brown is located near Burgin, Kentucky on Herrington Lake adjacent to the Dix Dam. The facility had three closed-cycle condenser cooled coal-fired units. Units 1 & 2 were retired in March 2019. Units 1-3 withdraw all of the Closed-cycle Recirculating System (CCRS) makeup water from Herrington Lake. Brown employs two cooling water intake structures. One structure includes three service water pumps that were originally designed to provide water to Units 1 and 2, and the second structure includes two service water pumps that provide water to Unit 3. While Units 1 and 2 had their own intake that includes use of a CCRS for all cooling water withdrawn from Herrington Lake, that intake and CCRS are no longer used except for redundancy.

Unit 3 withdraws its CCRS makeup water from Herrington Lake. Under normal operation water is withdrawn from Herrington Lake by the two Unit 3 submerged pumps which are supported by steel framed platforms. There is no underwater intake structure or screen house. Each pump has a fixed panel screen attached to the intake opening, approximately 38” long and 28” diameter. Specific screen opening sizes are not available. Pumps are located at elevation 661’, compared to the average water level of 734’. The pump intake is typically submerged 55’ to 96’ depending on the lake level. No backwash of the screens is installed. When a pump is turned off the water in the intake pipe to the pump will reverse course back into the lake. The pumps have a total design intake flow of 25.92 MGD. Based on the last five years of operating data (2014-2019) Brown withdrew an average of 28.6 cfs from Herrington Lake, which is based on all three Units in operation.

Units 1 and 2 each had a single mechanical draft cooling tower while Unit 3 has two parallel mechanical draft cooling tower. Brown Unit 3 has used a re-circulating cooling water system since the unit began

operating in 1972. The system utilizes two counter flow, induced draft cooling towers to cool the re-circulating water through evaporation. Service Water Return (make-up water) is used to replenish losses from the system due to drift, evaporation, and blowdown. Blowdown is necessary to maintain the proper level in the cooling towers and to ensure that minerals, such as calcium and magnesium don't become so concentrated that scaling occurs in the condenser and piping. An anti-scalant chemical is added to the system as well, to allow operation at higher cycles of concentration. The use of Service Water Return as the cooling medium, permits safe operation of the circulating water system at 2.5 cycles of concentration or above, thus further reducing blowdown flow. There is no emergency intake at the facility.

As discussed above, the cooling makeup water for the CCRSs is withdrawn from pumps that are typically submerged 55' to 96' depending on lake level. By withdrawing cooling water from the deep water behind the dam it is water with lower densities of entrainable life states. Herrington Lake upstream of the Dam is stratified during portions of the year and hypoxic conditions exist below 10-15 feet during primarily the summer months, but may occur in lake spring and fall. At times, hypoxic levels of oxygen occur throughout the entire water column and near anoxic conditions are common at bottom depths during the summer. Thus it is expected that impingeable sized fish avoid these areas during periods of low dissolved oxygen and entrainable life stages are not likely to survive at lower depths where the intake pipe withdraws cooling water during these periods.

5.8.2. Best Technology Available (BTA) Determination

The cooling water intake is approved as BTA for minimizing adverse environmental impact in accordance with the requirements in 40 CFR 125 Subpart J and section 316(b) of the Clean Water Act. The chosen impingement method of compliance is the closed-cycle recirculating system of 40 CFR 125.94(c)(1).

5.8.3. Intake Structure Standard Requirements

5.8.3.1. Future BTA Determinations for Cooling Water Intake Structure(s)

BTA determinations for entrainment mortality and impingement mortality at cooling water intake structures will be re-confirmed in each permit reissuance, in accordance with 40 CFR 125.90-98. In subsequent permit reissuance applications, the permittee shall provide all the information required in 40 CFR 122.21(r).

Exemptions from some permit application requirements are possible in accordance with 40 CFR 125.95(c) and 125.98(g), where information already submitted is sufficient. If an exemption is desired, a request for reduced application material requirements must be submitted at least 2 years and 6 months prior to permit expiration. Past submittals and previously conducted studies may satisfy some or all of the application material requirements.

5.8.3.2. Visual or Remote Inspection

The permittee shall conduct a weekly visual inspection or employ a remote monitoring device during periods when the cooling water intake is in operation. The inspection frequency shall be weekly to ensure the intakes are maintained and operated to function as designed.

5.8.3.3. Reporting Requirements for Cooling Water Intake

The permittee shall adhere to the reporting requirements listed below:

<u>Discharge Monitoring Reports (DMRs)</u>

The monitoring requirements for units at existing facilities under 40 CFR 125.96 for cooling water withdrawals, blowdown volume, and visual or remote inspections have been established at the appropriate outfalls and shall be reported on the DMR for those outfalls.

Annual certification Statement and Report

Submit an annual certification statement to DOW Surface Water Permits Branch signed by the authorized representative with information on the following, no later than January 31st for the previous year:

- Certification that water intake structure technologies are being maintained and operated as set forth in this permit, or a justification to allow a modification of the practices.
- If there are substantial modifications to the operation of any unit that impacts the cooling water withdrawals or operation of the water intake structure, provide a summary of those changes.
- If the information contained in the previous year's annual certification is still applicable, the certification may simply state as such.

Reporting Records Retention

In accordance with 40 CFR 125.97 (d) records of all submissions that are part of the permit application and reporting requirements must be retained until the subsequent permit is issued to document compliance. Additionally, all records supporting the determination of BTA for entrainment under 40 CFR 125.98(f) or (g) must be retained until such time the determination of BTA for entrainment in the permit is revised.

5.8.3.4. Endangered Species Act

Nothing in this permit authorizes take for the purpose of a facility's compliance with the Endangered Species Act. Refer to 40 CFR 125.98(b)(1) and (2).

5.9. Polychlorinated Biphenyls

Pursuant to the requirements of 40 CFR Part 423.12(b) (2), there shall be no discharge, from any point source, of Polychlorinated Biphenyl compounds such as those commonly used in transformer fluids. The permittee shall implement this requirement as a specific section of the BMP plan developed for this section.

5.10. Outfall 006 Additional Requirements for Total Recoverable Selenium

The monthly average discharge concentration for total recoverable selenium of 0.075 mg/l is a trigger that once exceeded, requires the permittee to collect and analyze fish tissue for selenium residue, and is not a permit violation if the fish tissue confirms compliance.

5.10.1 Tissue Collection and Analysis

The following requirements apply:

(1) Collection and analysis shall be performed in the vicinity of Outfall 006 within the calendar month following the calendar month the 0.075 mg/l monthly average trigger was exceeded;
(2) Fish tissue collection and analysis shall be performed in accordance with the DOW protocols specified in "Methods for the Collection of Selenium Residue in Fish Tissue Used to Determine KPDES Permit Compliance" **http://water.ky.gov/Pages/SurfaceWaterSOP.aspx**;
(3) Results of the analysis shall be reported as Total Recoverable Selenium (Fish Tissue) on the Discharge Monitoring Report (DMR) for the month during which the analysis were performed.

5.10.2 Results of Analysis

The results of the fish tissue shall be interpreted as follows:

(1) less than or equal to 8.6 mg/Kg dry weight selenium residue there is no permit violation;
(2) greater than 8.6 mg/Kg dry weight selenium residue there is a permit violation; and

(3) unable to obtain fish tissue, the 0.075 mg/l trigger becomes the effluent limitation and there is a permit violation

5.11. Point Source Discharge of Combustion Residual Leachate

Pursuant to 40 CFR 423.11(r), the term combustion residual leachate ("leachate") means "leachate from landfills or surface impoundments containing combustion residuals. Leachate is composed of liquid, including any suspended or dissolved constituents in the liquid, that has percolated through waste or other materials emplaced in a landfill, or that passes through the surface impoundment's containment structure (*e.g.,* bottom, dikes, berms). Combustion residual leachate includes seepage and/or leakage from a combustion residual landfill or impoundment unit to the surface. Combustion residual leachate includes wastewater from landfills and surface impoundments located on non-adjoining property when under the operational control of the permitted facility."

This permit authorizes the discharge of leachate from outfall 006. For newly discovered leachate seeps from a CCR surface impoundment or a CCR landfill, as defined at 40 CFR 257.53, to the surface that discharge or have a potential to discharge from a point source to a water of the commonwealth other than through outfall 006, the permittee shall develop and implement a plan to address such surface seeps. The plan shall be included as part of the on-site BMP Plan and shall address, at a minimum, (1) scheduled inspections for identifying surface leachate seeps, (2) maintenance of CCR landfills and/or impoundments to minimize the potential for surface leachate seeps, and (3) corrective measures that will be implemented upon the discovery of a surface leachate seep that is not being controlled by a permitted outfall authorized for discharge of leachate. The permittee shall notify the DOW Surface Water Permits Branch and the appropriate DOW Field Office of planned corrective measures for any identified surface seeps of leachate as soon as feasible after discovery of such a leachate seep, but no later than ten (10) days after the discovery. Such corrective measures may include: (1) plans to reduce or eliminate the leachate seep to the surface; (2) actions to route the surface leachate seep (via a conveyance designed to contain the flow or eliminate the possibility of infiltration) to an outfall permitted to discharge leachate; and (3) combinations of actions to eliminate or, if elimination is not feasible, reduce and control a surface leachate seep and ensure any discharge to a receiving stream is authorized by the permit. Please note that this does not exempt the permittee from 24-hour reporting Section 2.12 of the permit.

5.12. Bottom Ash and FGD ELG Compliance Schedule

Uncertainties on how EPA's reconsideration of Bottom Ash Transport wastewater and FGD wastewater could effected the current ELG compliance schedule granted to the facility. Given that uncertainty, Kentucky Division of Water is requiring Kentucky Utilities to provide an updated evaluation of the appropriate compliance date for FGD and Bottom Ash Transport wastewater within 6 months of EPA finalizing their reconsideration. This will allow the Division to re-evaluate and update the ELG compliance schedule if any significant changes are made as a result of this reconsideration.

SECTION 6

MONITORING AND REPORTING REQUIREMENTS

6. MONITORING AND REPORTING REQUIREMENTS

6.1. KPDES Outfalls

Discharge samples and measurements shall be collected at the compliance point for each KPDES Outfall identified in this permit. Each sample shall be representative of the volume and nature of the monitored discharge.

6.2. 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 Minimum Level shall be at or below the effluent limit. In the instance where an EPA-approved method does not exist that has a Method Minimum Level 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 ML that is nearest to the established effluent limit.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

6.3. Certified Laboratory Requirements

All laboratory analyses and tests required to demonstrate compliance with the conditions of this permit shall be performed by a laboratory holding the appropriate general or field-only certification issued by the Cabinet pursuant to 401 KAR 5:320.

6.4. Submission of DMRs

The completed DMR for each monitoring period must be entered into the DOW approved electronic system no later than midnight on the 28th day of the month following the monitoring period for which monitoring results were obtained.

For more information regarding electronic submittal of DMRs, please visit the Division's website at: **https://eec.ky.gov/Environmental-Protection/Water/SubmitReport/Pages/NetDMR.aspx** or contact the DMR Coordinator at (502) 564-3410.