STATE OF INDIANA	)	BEFORE THE INDIANA OFFICE OF ENVIRONMENTAL ADJUDICATION
	)	
COUNTY OF MARION	)	
	)	
IN THE MATTER OF:	)	
	)	
OBJECTION TO THE ISSUANCE OF NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NO. IN0004693 TO AES INDIANA-EAGLE GENERATING STATION, MARTINSVILLE MORGAN COUNTY, INDIANA	)	
	)	CAUSE NO. 23-W-J-5247
HOOSIER ENVIRONMENTAL COUNCIL, INC,	)	
	)	
Petitioner,	)	
	)	
INDIANAPOLIS POWER & LIGHT COMPANY d/b/a AES INDIANA - EAGLE VALLEY GENERATING STATION	)	
Permittee/Respondent,	)	
	)	
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT,	)	
Respondent.	)	

PETITION FOR ADMINISTRATIVE REVIEW

Petitioner, the Hoosier Environmental Council, Inc. ("HEC"), by counsel, hereby submits this Petition for Administrative Review of the Indiana Department of Environmental Management's ("IDEM's") issuance of the National Pollutant Discharge Elimination System ("NPDES") Permit No. IN0004693 to Indianapolis Power & Light Company d/b/a AES Indiana-Eagle Valley Generating Station ("AES Indiana" or "Eagle Valley"), dated March 31, 2023, attached hereto as Exhibit A. This NPDES permit allows discharges of wastewater and releases of coal ash contaminants to the West Fork of the White River from the Eagle Valley steam electric generating station and associated coal ash ponds that are located at 4040 Blue Bluff Road, Martinsville, Morgan County, Indiana.

On March 31, 2023, IDEM also served HEC with written notice by email of the Eagle Valley NPDES Permit issuance. (Exh. A at pdf 1-3). Pursuant to Indiana Code § 4-21.5-3-2, § 4-21.5-3-7, and 315 IAC 1-3-2, HEC has timely filed this Petition for Administrative Review.

Background

1. The Eagle Valley Generating Station began operating in 1949 as a coal-fired power plant, which AES Indiana decommissioned in 2016 and replaced with a combined-cycle natural-gas turbine ("CCGT") operation in 2018. During its 70-year history as a coal-fired plant, Eagle Valley generated millions of tons of toxic coal combustion waste (also referred to as "coal ash," "coal combustion residuals," or "CCR") that was mixed with water and dumped into unlined surface impoundments that are located just west of the power plant.

2. As confirmed by the U.S. EPA, coal ash is a toxic brew of carcinogens, neurotoxins and poisons including arsenic, boron, cadmium, hexavalent chromium, lead, lithium, mercury, molybdenum, selenium, and thallium. *See* EPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule,* 75 Fed. Reg. 35,128 at 35,137-35,140, 35,153, 35,167-35,172 (June 21, 2010) ("EPA Proposed CCR Rule"); *see also* EPA, *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule,* 80 Fed. Reg. 21,301 at 80 FR 21,311, 21,325-21,327 (Apr. 17, 2015) ("EPA Final CCR Rule"). Coal ash is also "one of the largest industrial waste streams generated in the U.S." EPA Final CCR Rule, 80 FR 21,301 at 21,303.

3. Unfortunately, prior to the U.S. EPA's 2015 promulgation of the CCR Rule, which is codified at 40 CFR part 257, disposal of this dangerous waste stream was largely unregulated. EPA Final CCR Rule, 80 FR 21,302, 21,322-21,325. During that time, the favored industry

disposal practice—as it was at Eagle Valley—was to mix the waste with water for transport and dumping into large, unlined surface impoundments or "ponds." *See* EPA Final Rule, 80 FR 21,302, 21,303, 21,324.

4. Indiana has the highest number of these coal ash ponds—more than any other state in the nation. EPA, *Regulatory Impact Analysis (RIA) for EPA's 2015 Coal Combustion Residuals (CCR) Final Rule*, Docket ID No. EPA-HQ-RCRA-2009-0640-12034 at 2-26, Exhibit 3-D (Dec. 2014) ("RIA for the 2015 CCR Rule") And many of these ponds—like those at Eagle Valley—are sitting in the floodplains of Indiana's major rivers.[1] Indeed, there are five coal ash ponds at Eagle Valley, (the "Ash Pond System"), that encompass approximately 60 acres within the White River floodplain, next to the West Fork of the White River. These unlined waste ponds are carved into the earth at depths just directly above, and in some areas within, the shallow sand and gravel groundwater system that adjoins the river.

5. Due to decades of persistent and pervasive leaching from coal ash in the ponds into the uppermost aquifer and in some places the direct contact between the coal ash and the aquifer, contamination of groundwater with toxic constituents from the coal ash is ongoing. Eagle Valley's annual groundwater monitoring reports from 2017 through 2022 have consistently shown elevated levels of CCR contaminants including arsenic, boron, lithium, and molybdenum, above Groundwater Protection Standards ("GWPS") in 40 CFR 257.95(h) and Appendices to the CCR Rule, confirming coal ash contamination of the aquifer, which is also migrating off-site.[2]

[1] Sarah Bowman, *Other States are Making Utilities Dig Up Toxic Coal Ash. Indiana is Letting it Sit There*, Indianapolis Star (Feb. 10, 2021).

[2] *See* Eagle Valley's 2022 Groundwater Monitoring and Corrective Action Report at pdf 6 (confirming "groundwater concentrations [of CCR contaminants] above applicable GWPSs were present at off-site Barnard Farms, Beecham-Dillon Farms and Cragen properties").

6. Due to the confirmed contamination of area groundwater, Eagle Valley is required by the federal CCR Rule to, among other things "immediately take all necessary [corrective] measures to control the source(s) of releases so as to *reduce or eliminate, to the maximum extent feasible, further releases of [CCR] contaminants into the environment."* 40 C.F.R. § 257.90(d) (emphasis added). In addition, Eagle Valley must close its coal ash ponds by either: (a) clean closure, which involves "removing and decontaminating all areas affected by releases" from the coal ash ponds; or (b) through closure-in-place, "ensur[ing] that, at a minimum, the CCR unit is closed in a manner that will *control, minimize or eliminate, to the maximum extent feasible*, post-closure infiltration of liquids into the waste and *releases of CCR, leachate, or contaminated run-off to the ground or surface waters* or to the atmosphere." 40 CFR § 257.101(a)(1); 40 C.F.R. § 257.102 (c), (d) (emphasis added).

7. Eagle Valley opted for closure-in-place and submitted its initial Closure Plan to IDEM on July 28, 2016, proposing to leave around 3.5 million tons of coal ash sitting in the ground and in contact with groundwater in perpetuity contrary to the CCR Rule's closure requirements. That initial Plan has been amended and revised several times with the most recent submittal still under review.[3]

8. Eagle Valley has also proposed three possible corrective measures, which the CCR Rule mandates must be designed to, among other things: "(1) [b]e protective of human health and the environment; (2) [a]ttain the groundwater protection standards as specified pursuant to §257.95(h); and (3) [c]ontrol the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to [the CCR Rule] into the environment." 40 CFR § 257.97(b). Each of the remedial alternatives proposed by Eagle Valley depend on its continuous use of the high-capacity wells at the CCGT plant to provide "hydraulic capture" and "containment" of the groundwater that is flowing through and contaminated by its leaching coal ash ponds.[4]

[3] On October 14, 2022, Eagle Valley submitted a revised Closure Plan for coal ash ponds "A, B and C" and will be submitting a separate Plan for ponds "D and E." (VFC# 83382985)
[4] *See* Haley Aldrich, *Report on Corrective Measures Assessment* (Oct. 2019) at pdf 12, 16-17.

9. Specifically, Eagle Valley installed three "high-production wells" that are "continuously pumping the groundwater in order to supply the large quantity of cooling water required to run the [new CCGT] plant.[5] According to Eagle Valley, these production wells "hydraulically control" the migration of CCR contaminated groundwater from reaching the White River because the wells have reversed the site's groundwater flow from a "west-southwesterly direction toward the White River . . . to the southeast."[6] As Eagle Valley explains it, without the wells, the groundwater would eventually "flow slowly [back] to the west, beneath the Ash Pond system towards the White River."[7] But so long as the wells are operating, "the groundwater flow field is reversed with groundwater being captured by the production wells."[8]

10. The problem with Eagle Valley's corrective measures plan is that operation of the production wells does not in any way control, contain, or otherwise prevent the coal ash contaminants from reaching the White River. Instead, the opposite is true—the plant's processes have been shown to concentrate the CCR contaminants in the pumped groundwater[9] and ensures that the contaminants are then *directly discharged* into the White River through Eagle Valley's NPDES permitted outfall. While the CCR contaminated groundwater that is "captured" by Eagle Valley's production wells is treated prior to use as cooling water, the waste generated from that treatment process is put back into the wastewater stream and then discharged, *untreated*, to the White River as allowed by the IDEM-issued NPDES Permit for Eagle Valley.

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[5] *See* Eagle Valley Revised Closure Plan (Feb. 28, 2020) at pdf 50 (VFC# 82928191). This information is repeated in the revised Closure Plan of October 14, 2022 at pdf 26.
[6] *Id.; see also* Haley Aldrich, *Report on Corrective Measures Assessment* (Oct. 2019) at pdf 17 (explaining that CCR constituents "detected at the boundary of the [coal ash ponds] at concentrations above the GWPS would be addressed with hydraulic containment through groundwater pumping of the existing production wells … to hydrologically control the migration of those constituents downgradient.")
[7] *See* Haley Aldrich, *Corrective Measures Report* (Oct. 2019) at pdf 12 (explaining further that in "a 'pumps off' condition, groundwater from the west edge of the Ash Pond System is expected to take between one and two years to reach the river based on groundwater modeling predictions.")
[8] *Id.*
[9] *See* HEC public comments on draft NPDES permit (Mar. 20, 2023) attached hereto as Exhibit B at pdf 6-7.

11. As such, and as detailed further below, the NPDES Permit violates several provisions of the federal CCR Rule including the corrective measures requirements. The NPDES Permit also violates several provisions of the federal Clean Water Act ("CWA") and its implementing regulations including antidegradation standards, effluent limits and monitoring requirements for Mercury, and fails to assess the reasonable potential to exceed the human health cancer criteria for CCR contaminants that are carcinogenic. Accordingly, the Office of Environmental Adjudication ("OEA") should revoke the NPDES Permit issued to Eagle Valley and order IDEM to address these legal deficiencies.

Interests of Petitioner

12. HEC is an Indiana 501(c)(3) non-profit, public interest environmental policy and advocacy organization. Since its formation in 1983, HEC has been and continues to be committed to protecting Indiana's air, land, waterways, and wildlife habitat through initiatives in education, research, technical assistance, public policy, and legal action to enforce federal and state laws that protect Indiana's natural resources and people. To further its mission, HEC actively seeks federal and state agency implementation of environmental laws and, when necessary, initiates citizen enforcement actions and administrative appeals on behalf of HEC and its members.

13. On March 20, 2023, HEC submitted public comments to IDEM detailing HEC's concerns with the draft NPDES Permit for Eagle Valley. HEC's comments are attached hereto as Exhibit B.

14. HEC brings this administrative appeal on behalf of its members who live and/or recreate near the White River and Eagle Valley power plant in Martinsville and are aggrieved and adversely affected by IDEM's approval of the NPDES Permit to Eagle Valley. The Permit not only allows continued releases of CCR contaminants into the White River from Eagle Valley's

leaching coal ash ponds but directly facilitates and hastens those releases. HEC members utilize the White River for recreation and enjoyment, and the ongoing releases of coal ash contaminants to the White River approved by the NPDES Permit will impact their ability to use and enjoy the River.

15. Because HEC's members are aggrieved and adversely affected by the NPDES permit issued to Eagle Valley, HEC has associational standing to pursue this administrative appeal on their behalf. *Save the Valley, Inc. v. Indiana-Kentucky Elec. Corp.,* 820 N.E.2d 677, 682 (Ind. Ct. App. 2005).

Respondents

16. Respondent IDEM is an administrative agency of the State of Indiana charged with implementing and enforcing federal and state environmental laws for protection of public health and the environment. IDEM is responsible for reviewing and approving NPDES permits that allow point sources to discharge into waters of the State of Indiana. IDEM is also responsible for implementing and enforcing the federal CCR Rule in Indiana. IDEM's decisions, including the NPDES Permit at issue here, are subject to appeal to the OEA.

17. Respondent Indianapolis Power & Light Company is a Domestic For-Profit Corporation formed in 1926 and is registered to do business in Indiana under the assumed name, "AES Indiana." AES Indiana's principal office is in Indianapolis, Indiana.

OEA Jurisdiction

18. The OEA has jurisdiction to decide this appeal pursuant to Indiana Code §§ 4-21.5-7-3 and 13-15-6-3, and to revoke or modify the NPDES Permit at issue pursuant to Ind. Code § 13-15-7-1. In its review, OEA must determine whether IDEM complied with all applicable statutes

and regulations. Ind. Code § 4-21.5-7-3. The OEA has *de novo* review of IDEM's issuance of the NPDES Permit issued to Eagle Valley.

Legal and Technical Deficiencies of the Eagle Valley NPDES Permit

FIRST DEFICIENCY
The NPDES Permit Allows Continuous Releases of CCR Contaminants to the White River in Violation of the CCR Rule and the CWA

19. Pursuant to 327 IAC 5-2-5(b), a NPDES permit may "not authorize any . . . infringement of federal, state, or local laws or regulations." Yet, in this case, the NPDES Permit issued to Eagle Valley does exactly that.

20. IDEM's Fact Sheet for the Eagle Valley NPDES Permit confirms that the groundwater contaminated by Eagle Valley's leaching coal ash ponds is being continuously pumped by the high-production wells and "is the source water for *all* processes" at the Eagle Valley power plant. (Exh. A at pdf 82 (emphasis added)).

21. In turn, Eagle Valley represented in its Assessment of Corrective Measures that these same high-production wells are providing, and will continue to provide, "hydraulic capture" and "containment" of the coal ash contaminants from reaching the White River as necessary for Eagle Valley to comply with the CCR Rule's mandate to "*reduce or eliminate, to the maximum extent feasible, further releases of [CCR] contaminants into the environment,"* including "*releases of CCR* [and] *leachate . . . to the ground or surface waters*." 40 C.F.R. § 257.90(d); 40 C.F.R. § 257.102(d) (emphasis added).[10]

22. Contrary to this representation—notably made under penalties for perjury[11]—Eagle Valley applied for a NPDES Permit to allow for continuous pumping and release of CCR

[10] *See e.g.,* Haley Aldrich, *Report on Corrective Measures Assessment* (Oct. 2019) at pdf 12, 16-17.
[11] *See* 40 CFR §§ 257.90 – 257.98 (requiring a qualified professional engineer to certify and attest to the accuracy of reports and submissions under the CCR Rule's corrective measures provisions).

contaminants directly into the White River *every day, year-round.*[12] According to IDEM's Office of Water Quality ("OWQ"), this outcome is perfectly legal because "other program areas" at IDEM determine what actions meet the CCR Rule's requirements, not the NPDES permitting section. (Exh. A at pdf 109).

23. Taking the opposite view, IDEM's Office of Land Quality ("OLQ") made clear that Eagle Valley's continuous releases of CCR contaminants to the White River should be addressed by the NPDES Permit because the releases are "point source discharges to waters of the state."[13] In other words, the two offices at IDEM are each pointing to the other as being responsible for regulating this continuous release of CCR contaminants to the White River.

24. IDEM cannot have it both ways. Nor can it issue a NPDES Permit that allows a clear violation of the CCR Rule simply because the agency's NPDES permitting section is distinct from its program area that deals with solid waste regulation. IDEM is well within its authority to impose NPDES permitting conditions that require Eagle Valley to do as it said it would do and actually "contain" the releases of CCR contaminants being pumped by its production wells to comply with the CCR Rule.

25. Indeed, a "point source" under Indiana's NPDES permitting regulations is defined to include "a well." 327 IAC 2-1.3-2(37). In turn, a "regulated pollutant" includes "solid waste" that is "discharged to water" and "may be limited in an NPDES permit." *Id.* (38), (43). And those permit limits, contrary to the view of IDEM's OWQ, may include requirements as appropriate to measure, monitor, and limit pollutants in internal waste streams and intake water. 40 CFR §

[12] The CWA also requires NPDES permit applications to be submitted under penalties for perjury. 327 IAC 5-2-22(a)(1)(B), (d).
[13] *See* email exchange between HEC's Dr. Indra Frank and IDEM's OLQ Permits Branch Chief, Stephen Thill, from May 25, 2021 through June 24, 2021 (VFC# 83174214).

122.44(i)(1)(iii); 40 CFR § 122.45(h).[14] They may also include "any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to *any* State law or regulations . . . or *any other* Federal law or regulation." 33 U.S.C. § 1311(b)(1)(C) (emphasis added); 327 IAC 5-2-10(a)(4)(c).[15]

26. That is precisely what IDEM must do now—the agency must modify the NPDES Permit issued to Eagle Valley to require actual "containment" of CCR contaminants being pumped from the production wells at concentrations above GWPS and prohibit Eagle Valley from releasing those contaminants to the White River. Failure to do so violates the CCR Rule and the CWA.

SECOND DEFICIENCY

The NPDES Permit Violates Antidegradation Standards

27. The NPDES Permit issued to Eagle Valley violates Indiana's Antidegradation standards by allowing a new discharge of mercury, a Bioaccumulative Chemical of Concern ("BCC"),[16] without requiring Eagle Valley to first comply with the antidegradation demonstration procedures set forth in 327 IAC 2-1.3-5 and 2-1.3-6.

28. As IDEM states in the Eagle Valley NPDES Permit Factsheet:

> Indiana's antidegradation standards established by 327 IAC 2-1.3 apply to all surface waters of the state … [and prohibit a permittee from] undertaking any deliberate action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality, or antidegradation demonstration submitted and approved in accordance with 327 IAC 2-1.3-5 and 2-1.3-6.

[14] In response to Morgan County SWCD's request for quarterly testing of the production wells for CCR contaminants and to require operational and treatment changes at the plant to comply with the CCR Rule, IDEM's OWQ refused, stating those changes are "outside the scope of the NPDES permitting program." (Exh. A at pdf 102-103)

[15] IDEM's OWQ apparently knows that it can coordinate with the OLQ to impose NPDES permitting requirements that ensure compliance with the CCR Rule. Indeed, the NPDES Permit issued to Eagle Valley requires monitoring for CCR contaminants listed in Appendices III and IV of the CCR Rule, including for hexavalent chromium–a monitoring requirement included at the "discretion of IDEM's OLQ." (Exh. A at pdf 80)

[16] *See* 327 IAC 2-1.3-2(7) (citing 327 IAC 2-1-9 and 2-1.5-6 that list Mercury as a BCC).

(Exh. A at pdf 84).

29. Although the NPDES Permit issued to Eagle Valley includes new effluent limitations for mercury, IDEM concluded that the new discharges "are not subject to the Antidegradation Implementation Procedures" because they "are not the result of a deliberate activity taken by the permittee." (Exh. A at pdf 84). This is wrong.

30. 327 IAC 2-1.3-1(b) is clear that a "deliberate activity" for purposes of Indiana's Antidegradation requirements includes "a change in process or operation," which has certainly occurred at Eagle Valley. Specifically, IDEM's NPDES Permit Fact Sheet identifies "Changes in Operation" at Eagle Valley to include the start of "commercial CCGT operation in 2018," and further explains how "deliberate" that change was:

> AES Indiana Eagle Valley Generating Station was a coal-fired generating station with a normal capacity of 344 megawatts. The facility has decommissioned and demolished the coal units and has commissioned a combined-cycle natural-gas turbine (CCGT) operation which consists of two (2) combined-cycle natural-gas turbines with steam being produced by two (2) Heat Recovery Steam Generators with a duct burner each supplying a steam turbine generator and an auxiliary boiler to replace the coal-fired generation units. The facility stopped coal use in 2016; the CCGT commercial operation began in 2018. The source water for the facility is well-water.

(Exh. A at pdf 70, 74)

31. As to the cause of the new mercury loading, in particular, IDEM's Fact Sheet goes on to explain that it is due to the switch in operation to the new CCCT plant and associated use of groundwater that is pumped by the newly installed production wells for cooling and process water:

> As part of the permit modification issued December 17, 2015 . . . [t]he facility also *provided estimates* of effluent quality from the CCGT plant for regulated pollutants, including mercury, considering well water as a source and cycling in the cooling tower. *Permit limitations for mercury were not included in the 2015 permit as a result of these projections.* [However,] *Actual effluent data from the CCGT plant for regulated pollutants were provided as part of this permit renewal and showed the need to establish water quality-based effluent limitations for mercury.*

(Exh. A at pdf 84 (emphasis added)).

32. Accordingly, the discharges of mercury as allowed under the NPDES Permit are plainly the result of Eagle Valley's change in operation and the installation and use of new production wells, all of which were "deliberate activities" by Eagle Valley. Those mercury discharges are, therefore, subject to Indiana's Antidegradation requirements. And because those requirements were not followed here, the NPDES Permit should be revoked until Eagle Valley conducts an antidegradation demonstration that is approved by IDEM.

THIRD DEFICIENCY

The NPDES Permit Fails to Impose Proper Limits, Monitoring Requirements, and Schedule of Compliance to Ensure the Water Quality Criteria for Mercury is Met

33. Water-quality based effluent limits ("WQBELs") in a NPDES permit for a BCC like mercury is based on the water quality criteria ("WQC") established for that BCC as applied directly to the undiluted discharge—in other words, no mixing zones are allowed. 327 IAC 5-2-11.1(b)(6).

34. In Indiana, the minimum WQC for mercury is 12 nanograms per liter (ng/l). 327 IAC 2-1-6(a)(3), Table 6-1. That means, without dilution or a mixing zone, a WQBEL in a NPDES permit limit must likewise be 12 ng/l. Nevertheless, the NPDES Permit issued to Eagle Valley sets a daily maximum limit of 20 ng/l, above the WQC for mercury (Exh. A at pdf at 6, 114), in violation of 327 IAC 5-2-11.1(b)(6).

35. While the NPDES Permit sets a monthly average limit of 12 ng/l, the monitoring requirements imposed will not assure compliance with that limit in violation of 40 CFR 122.44(i) (requiring all NPDES permits to contain monitoring requirements that assure compliance with permit limits). Specifically, the NPDES Permit requires Eagle Valley to monitor for mercury only six (6) times per year. (Exh. A at pdf 6) At that sampling frequency, it is impossible to calculate a "monthly average" to determine Eagle Valley's compliance with the monthly limit.

36. Not only does the NPDES Permit fail to impose proper limits and monitoring requirements necessary to assure compliance with the WQC for mercury, but it also allows Eagle Valley three years to comply so that Eagle Valley can "identify the source of mercury" and "develop a compliance strategy." (Exh. A at pdf 49, 91) This three-year delay in compliance is especially concerning given that the section of the West Fork of the White River that receives Eagle Valley's mercury-laden discharges is already impaired for mercury. (Exh. A at pdf 75).

37. In response to public comments on this issue, IDEM explained its rationale for allowing Eagle Valley three years to meet the Permit's mercury limits this way:

> This is standard language included in all NPDES permits containing schedules of compliance. The schedule of compliance has been granted in accordance with 327 IAC 5-2-12 (see also 40 CFR 122.47(a)) which must require compliance by the permittee 'as soon as reasonably possible, but not later than… three (3) years from the date applicable standards, limitations, or other requirements are incorporated into the permit.' Therefore, as soon as the permittee comes into compliance with the mercury limit, they will have to abide by the limit.

(Exh. A at pdf 102). IDEM's interpretation of 40 CFR § 122.47 is not supported.

38. That provision states that a NPDES permit "may, *when appropriate*, specify a schedule of compliance leading to compliance with the CWA and regulations." 40 CFR § 122.47(a) (emphasis added). Such a compliance schedule is appropriate for a new source or discharger "*only* when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction but less than three years before commencement of the relevant discharge[;]" and for "recommencing dischargers, . . . *only* when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised less than three years before recommencement of discharge." 40 CFR § 122.47(a)(2) (emphasis added). That is not the situation here.

39. Indiana's WQC for mercury has been in place long before 2018 when Eagle Valley finished construction of its new CCGT plant. In fact, Eagle Valley has known that the mercury criterion applied to its new operation when it sought a modification of its NPDES Permit back in December of 2015. (Exh. A at pdf 84) While a mercury limit was not included in the 2015 permit modification based on Eagle Valley's "estimates" and "projections" that there would be an "overall reduction in loading of regulated pollutants, including mercury, after the CCGT plant [was] operational," the *actual* effluent data from the new plant—since August of 2019—has shown that not to be the case. (Exh. A at pdf 84, 118)

40. In other words, Eagle Valley has known for nearly four years that its new CCGT plant is discharging above the WQC for mercury. That is more than sufficient time for Eagle Valley to have assessed its operation and determine the source of mercury and to develop a plan to comply with the mercury WQC. There is simply no legitimate or appropriate reason to give Eagle Valley another three years to figure it out while continuing to discharge this dangerous BCC into an already mercury-impaired waterway. Pursuant to 40 CFR § 122.47, the three-year schedule of compliance is wholly inappropriate and unreasonable and should thus be removed from the NPDES Permit.

FOURTH DEFICIENCY

IDEM Failed to Assess the Reasonable Potential to Exceed Human Health Cancer Criteria for Carcinogenic Contaminants and the Chronic Aquatic Criteria for Other Pollutants

41. The CWA requires all NPDES permits to contain effluent limitations and standards that "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants), which the [permitting agency] 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." 40 CFR § 122.44(d)(1)(i) (emphasis added).

42. Moreover, when the state agency determines "that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream 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." 40 C.F.R. § 122.44(d)(1)(iii); *see also* 327 IAC 5-2-11.1(h)(1) (providing that permit "[l]imitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants that the commissioner determines are, or may be, discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric water quality criterion promulgated under 327 IAC 2-1-6")).

43. Indiana's water quality criteria mandate, among other things, that "[a]ll surface waters outside of mixing zones must be free of substances in concentrations that, on the basis of available scientific data, are believed to be sufficient to injure, be *chronically* toxic to, or be *carcinogenic*, mutagenic, or teratogenic to humans, animals, aquatic life, or plants." 327 IAC 2-1-6(a)(2) (emphasis added).

44. Implementing this mandate for carcinogens, Indiana has developed a standard for determining the appropriate water concentration of a particular carcinogen to provide "an acceptable degree of protection to public health for cancer." 327 IAC 2-1-8.6 (also referred to has the "human health cancer criteria").

45. Nevertheless, when IDEM conducted the reasonable potential to exceed ("RPE") analysis for the Eagle Valley NPDES permit, the agency failed to assess whether concentrations

of the known carcinogens in coal ash contaminated groundwater being pumped by the production wells have a reasonable potential to exceed the human health cancer criteria. (Exh. A at pdf 126).

46. IDEM failed to do so despite noting that several of the listed parameters are "probable or known human carcinogens" including arsenic, beryllium, cadmium, and lead. (Exh. A at pdf 126-127, fn 6) Radium and hexavalent chromium are also known carcinogens in coal ash and should also have been assessed by IDEM for their reasonable potential to exceed human health cancer criteria.

47. IDEM's failure in this regard not only violates 327 IAC 2-1-6(a)(2), but it is especially concerning given that there are residential drinking water wells and public drinking water wells within 2 miles downstream of the Eagle Valley plant that are all within the White River floodplain and draw on the aquifer that is recharged by the River.

48. In addition, IDEM violated 327 IAC 2-1-6(a)(2) by failing to protect aquatic life from exposures. Specifically, Indiana has developed both Acute Aquatic Criterion ("AAC") and Chronic Aquatic Criterion ("CAC"). 327 IAC 2-1-6, Table 6-1. The NPDES Permit issued to Eagle Valley allows for continuous discharges of wastewater to the White River every day, year-round, meaning that aquatic life will have chronic exposure to pollutants in that wastewater. However, in conducting the RPE analysis, IDEM used only the AAC for most parameters but not the CAC in calculating Preliminary Effluent Limitations ("PELs") resulting in higher PELs.

49. Had IDEM used the CAC, much lower PELs would have applied likely resulting in more pollutant parameters having a reasonable potential to exceed and thereby requiring limits on those parameters in the NPDES Permit.

Relief Requested

WHEREFORE, to remedy the foregoing legal and technical deficiencies, Petitioner respectfully requests that the OEA revoke the NPDES Permit issued to Eagle Valley and order IDEM to reissue a modified NPDES Permit that:

a. complies with the federal CCR Rule by preventing releases of CCR contaminants to the White River;

b. is issued only after Eagle Valley conducts an antidegradation demonstration for mercury and that demonstration is approved by IDEM;

c. sets appropriate effluent limits, monitoring requirements, and compliance schedule to assure immediate compliance with Indiana's WQC for Mercury;

d. sets appropriate effluents limits on carcinogens based on a reasonable potential to exceed the human health cancer criteria; and

e. sets appropriate effluent limits on pollutants that have a reasonable potential to exceed chronic aquatic criteria.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Petition and all attachments referenced therein were served upon the following individuals via U.S. Certified Mail, Return Receipt Requested on this 17th day of April, 2023:

Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue
Room N103
Indianapolis, Indiana 46204

Commissioner, Brian Rockensuess
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue
Room 1301
Indianapolis, IN 46204

Indianapolis Power & Light d/b/a AES Indiana
Registered Agent: Joseph G. Strines
One Monument Circle
Indianapolis, IN 46204

Courtesy copies sent via email to:

David Sacksteder, Sr. Analyst EHS
Indianapolis Power & Light d/b/a AES Indiana
David.sacksteder@aes.com

Jodi Glickert, Senior Environmental Manager
Indiana Department of Environmental Management
jglicker@idem.in.gov

Stanley Diamond, P.E., BCEE
Stanley.Diamond@outlook.com

Doug Peine, Chair
Morgan County Soil & Water Conservation District
Dougpeine@peinengineering.com

/s/ *Kim E. Ferraro*

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov
Eric J. Holcomb, *Governor*
Brian C. Rockensuess, *Commissioner*

March 31, 2023

VIA ELECTRONIC MAIL

David Sacksteder, Sr. Analyst EHS
AES Indiana – Eagle Valley Generating Station
4040 Blue Bluff Road
Martinsville, Indiana 46151

Dear David Sacksteder:

Re: NPDES Permit No. IN0004693
AES Indiana – Eagle Valley Generating Station
Martinsville, IN – Morgan County

Your application for a National Pollutant Discharge Elimination System (NPDES) permit for authorization to discharge into the waters of the State of Indiana has been processed in accordance with Section 402 and 405 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, et seq.), and IC 13-15, IDEM's permitting authority. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires periodic reporting of several effluent parameters. You are required to submit both federal discharge monitoring reports (DMRs) and state Monthly Monitoring Reports (MMRs) on a routine basis. The MMR form is available on the internet at the following web site: https://www.in.gov/idem/cleanwater/wastewater-compliance/wastewater-reporting-forms-notices-and-instructions/.

Once you are on this page, select the "IDEM Forms" page and locate the "Monthly Monitoring Report (MMR) for Industrial Discharge Permits-30530" under the Wastewater Facilities heading. We recommend selecting the "XLS" version because it will complete all of the calculations when you enter the data.

All NPDES permit holders are required to submit their monitoring data to IDEM using NetDMR. Please contact Rose McDaniel at (317) 233-2653 or Helen Demmings at (317) 232-8815 if you would like more information on NetDMR. Information is also available on our website at https://www.in.gov/idem/cleanwater/resources/netdmr/.

Another condition, which needs to be clearly understood, concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may subject the permittee to criminal or civil penalties. (See Part II A.2.) It is therefore urged that your office and treatment operator understand this part of the permit.

The draft NPDES permit for AES Indiana – Eagle Valley Generating Station was made available for public comment from February 17, 2023 through March 20, 2023 as part of Public Notice No. 20230217 on IDEM's website at https://www.in.gov/idem/public-notices/public-notices-all-regions/. A response to the comments contained in a letter dated March 17, 2023, from David Sacksteder of AES Indiana; a letter dated March 18, 2023, from the Morgan County Soil & Water Conservation District; and a letter dated March 20, 2023, from Indra Frank of the Hoosier Environmental Council, pertaining to the draft NPDES permit is contained in the Post Public Notice Addendum. The Post Public Notice Addendum is located at the end of the Fact Sheet.

It should also be noted that any appeal must be filed under procedures outlined in IC 13-15-6, IC 4-21.5, and the enclosed Public Notice. The appeal must be initiated by filing a petition for administrative review with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the emailing of an electronic copy of this letter or within eighteen (18) days of the mailing of this letter by filing at the following addresses:

Director
Office of Environmental Adjudication
Indiana Government Center North
Room N103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

If you have any questions concerning the permit, please contact Jodi Glickert at 317/447-4176 or jglicker@idem.in.gov. More information on the appeal review process is available at the website for the Office of Environmental Adjudication at http://www.in.gov/oea.

Sincerely,

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

Enclosures

cc: Chief, Permits Section, U.S. EPA, Region 5
Morgan County Health Department
Mark Holbrook, AES Indiana Eagle Valley Station
Kelly Moody, Brown and Caldwell
Allison Osborne, Brown and Caldwell
Nysa Hogue, Senior Scientist for AES
Kevin Stark, IDEM
Stanley Diamond, Morgan County SWCD
Doug Peine, Peine Engineering
Lisa MacPhee, Morgan County SWCD

Indra Frank, Hoosier Environmental Council
Shyamala Raman, IDEM OLQ
Troy Weaver, IDEM OLQ

STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Clean Water Act" or "CWA"), and IDEM's authority under IC 13-15,

INDIANAPOLIS POWER & LIGHT COMPANY DBA AES INDIANA
- EAGLE VALLEY GENERATING STATION

is authorized to discharge from an Electric Power Generation Facility that is located at 4040 Blue Bluff Road, Martinsville, Indiana 46151 to receiving waters identified as West Fork of White River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: April 1, 2023

Expiration Date: March 31, 2028

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Issued on _March 31, 2023_ for the Indiana Department of Environmental Management.

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 003, located at Latitude 39° 29' 10", Longitude -86° 25' 50". The discharge is limited to cooling tower blowdown, water treatment system wastewater (RO reject water, multimedia filter backwash water, and zeolite softener brine regenerant), HRSG blowdown, auxiliary boiler blowdown, floor drains treated with oil/water separator wastewater and storm water runoff (and discharge from Internal Outfall 103). Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into West Fork of White River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][7][12][13]
Outfall 003

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow								
Effluent[14]	Report	Report	MGD	-	-	-	Daily	24 Hour Total
Upstream	Report	Report	MGD	-	-	-	Daily	Gage[21]
Temperature[5]								
Upstream	--------	--------	------	Report	Report	°F	Daily	Gage[21]
Effluent	--------	--------	------	Report	Report	°F	Daily	Continuous[6]
Mixed River	--------	--------	------	Report	Report	°F	Daily	Calculated
Total Residual Chlorine[17]								
Continuous[8][10]-----	--------	--------	------	0.02[16]	0.04[16]	mg/l	Weekly	Grab
Intermittent[8][10]-----	--------	--------	------	------	0.2	mg/l	Weekly	Grab
Total Residual Oxidants[11]								
Continuous [8][10] ---	--------	--------	------	------	0.06	mg/l	Weekly	Grab
Intermittent [8][10]---	--------	--------	------	------	0.2	mg/l	Weekly	Grab
Chlorination/Bromination								
Frequency[9]	--------	4	times/day	-------	------	-----	Daily	Report
Chlorination/Bromination								
Dose Duration[9][10]-		40	minutes/dose	---	------	-----	Daily	Report
Chlorination/Bromination								
Duration/day[9][10]---		120	minutes/day	-----	------	-----	Daily	Report
Zinc[4][12][20]	--------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
T. Chromium[4][12][20]		--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
TSS	--------	--------	------	29.2	97.4	mg/l	1 X Weekly	24-Hr. Comp
O+G	--------	--------	------	14.6	19.5	mg/l	1 X Monthly	Grab
Chloride[20]	--------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Boron	--------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Selenium[4][17]	--------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Fluoride[4][17]	--------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Sulfate	--------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Total Dissolved Solids (TDS)		--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp

Antimony[4][17]	-------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Arsenic[4][17]	-------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Barium[4][17]	-------	--------	------	Report	Report	mg/l	1 X Monthly	24- Hr. Comp
Cadmium[4]	-------	--------	------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Hexavalent Chromium[17][22]		--------	-------	Report	Report	mg/l	1 X Monthly	Grab
Cobalt[4][17]	-------	--------	-------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Lead[4]	-------	--------	-------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Lithium[4][17]	-------	--------	-------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Molybdenum[4][17]-----		--------	-------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Thallium[4][17]	-------	--------	-------	Report	Report	mg/l	1 X Monthly	24-Hr. Comp
Mercury[4][15][17][18]								
Interim	--------	--------	------	Report	Report	ng/l	6 X Annually[18]	Grab
Final	--------	--------	------	12	20	ng/l	6 X Annually[18]	Grab
Whole Effluent Toxicity Testing [19]								

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH [3]	6.0	9.0	s.u.	1 X Weekly	Grab

[1] See Part I.B. of the permit for the minimum narrative limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of the approved water treatment additives, including increased dosage, that could significantly change the nature of or increase the discharge concentration, the permittee must apply for and receive approval from IDEM prior to such discharge to this Outfall. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at: https://www.in.gov/idem/forms/idem-agency-forms/.

[3] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.

[4] The permittee shall measure and report the identified metal as total recoverable metal.

[5] The following conditions apply for Temperature outside the mixing zone:

(1) There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.

(2) The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

(3) The maximum temperature rise at any time or place above natural shall not exceed five (5) degrees Fahrenheit (two and eight-tenths (2.8) degrees Celsius) in streams.

The discharge from Outfall 003, as determined at the edge of the mixing zone described in 327 IAC 2-1-4, shall not exceed the maximum limits in the following table more than one percent (1%) of the hours in the twelve (12) month period ending with any month.

At no time shall the water temperature of the discharge from Outfall 003 exceed the maximum limits in the following table by more than three degrees Fahrenheit (3ºF) (one and seven-tenths degrees Celsius (1.7ºC)).

Table 1

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ºF	50	50	60	70	80	90	90	90	90	78	70	57
ºC	10	10	15.6	21.1	26.7	32.2	32.2	32.2	32.2	25.5	21.1	14

The permittee will have the option of either meeting the above limits at the end of pipe, or by meeting the limits with a mixed river temperature that takes into account the mixing zone allowed by 327 IAC 2-1-6(b). The mixed river temperature is to be determined by employing the following mathematical model:

TMR = TU + (QE*(TE – TU))/(QS + QE)

where:

TMR = mixed river temperature (ºF)
TU = upstream river temperature (ºF)
TE = effluent temperature (ºF)
QE = effluent flow (MGD)
QS =one-half of the Q7,10 low-flow value of the receiving stream (88.6 MGD) or one-half of the upstream river flow, taken at the USGS Centerton Gaging Station, in MGD.

[6] Temperature measurements shall be recorded continuously in one-minute intervals, and the total number of hours above the corresponding maximum limits in Table 1 for the twelve (12) months shall be reported. The twelve months shall include the current month and the previous eleven (11) months.

[7] The Stormwater Monitoring and Non-Numeric Effluent Limits and the Stormwater Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[8] Continuous chlorination is considered as all occurrences that do not meet the definition of intermittent chlorination, as described in 327 IAC 2-1-6 Table 6-1, Footnote [6]. These water quality based effluent limits (WQBELs) are applicable any time that the discharge of chlorine does not meet this intermittent definition.

[9] This daily maximum limit for total residual chlorine is only applicable if the discharge of chlorine is intermittent. As required by 327 IAC 2-1-6 Table 6-1, Footnote [6], to be considered an intermittent discharge, total residual chlorine shall not be detected in the discharge for a period of more than forty (40) minutes in duration, and such periods shall be separated by at least five (5) hours. Simultaneous multi-unit chlorination is permitted.

[10] Samples are to be taken during expected peak effluent concentrations of oxidants. Monitoring is required only on days when chlorination/bromination occurs. The effluent limitations for TRC apply to peak concentrations occurring during periods of chlorination/bromination. Samples for TRC shall be taken at times expected to reflect peak chlorine/bromine concentrations based on previous experience. The duration is defined to be from the point of first detectable measurement to the point of last detectable measurement of TRC/TRO.

[11] Total Residual Oxidants (TRO)

The monitoring requirements and effluent limitations for total residual oxidants (TRO) will apply at any time bromine is used and may be in the discharge. The permittee must use the test methods for total residual chlorine (TRC) to determine total residual oxidants. At present, the test methods included in footnote [17] of this permit are considered to be acceptable to IDEM to determine TRO concentrations at the level of 0.06 mg/l. If another EPA test method is to be used, the method must be approved by this Department. The permittee will be considered in compliance with the permit limits if the effluent concentrations measured are less than the LOQ of 0.06 mg/l for continuous bromination (TRO) and less than or equal to 0.2 mg/l for intermittent bromination (TRO).

[12] The discharge of cooling tower blowdown is regulated by the 40 CFR 423.13(d). 40 CFR 423.12(d)(1) prohibits the discharge of the 126 priority pollutants listed in Appendix A of this regulation in detectable amounts, with the exception of total zinc and total chromium, which have specific numeric limits. In accordance with 423.13(d)(3), instead of the monitoring specified in 40 CFR 122.48(b), compliance with the limitations for the 126 priority pollutants in paragraph (d)(1) of 40 CFR 423.12 may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final cooling tower blowdown discharge by the analytical methods in 40 CFR part 136.

Within 6 months of the effective date of the permit, the permittee shall either provide sample data for the discharge from the cooling tower blowdown (prior to commingling with other wastestreams) showing that the 126 priority pollutants are

not detectable in the cooling tower blowdown by the analytical methods in 40 CFR Part 136; or provide the certified analytical contents of all chemicals used for cooling tower maintenance and engineering calculations demonstrating that any of the priority pollutants present in the maintenance chemicals would not be detectable in the cooling tower discharge. Total Chromium and Zinc are excluded from this requirement. ND=non-detect

[13] See Part III of this permit for additional monitoring requirements.

[14] The permittee may use engineering calculations, such as pump capacity, to measure flow.

[15] The permittee has a 3-year schedule of compliance as outlined in Part I.G in which to meet the final effluent limitations for Mercury.

[16] The water quality based effluent limit (WQBEL) for TRC is less than the limit of quantitation (LOQ) as specified in footnote [17]. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the LOQ.

If the measured concentration of TRC is greater than the water quality based effluent limitations and above the respective LOD specified in footnote [18] in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams); and re-examine the chlorination /dechlorination procedures.

(2) The sampling and analysis for TRC shall be increased to 2 X Weekly and remain at this increased sampling frequency until:

(a) The increased sampling frequency for TRC has been in place for at least 6 weeks

(b) At least nine (9) samples have been taken under this increased sampling frequency; and

(c) The measured concentration of TRC is less than the LOD specified in footnote [17] in at least seven (7) out of the nine (9) most recent analyses.

[17] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples included in Table 1. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Mercury	1631E	0.2 ng/l	0.5 ng/l
Thallium	200.8	0.073 µg/l	1.0 µg/l
Thallium	200.7	5 µg/l	10 µg/l
Molybdenum	200.8	0.48 µg/l	5.0 µg/l
Molybdenum	200.7	25 µg/l	50 µg/l
Lithium	200.7	4.1 µg/l	20.0 µg/l
Cobalt	200.8	0.086 µg/l	1.0 µg/l
Cobalt	200.7	5 µg/l	10 µg/l
Hexavalent Chromium	218.6	0.04 µg/l	0.1 µg/l
Barium	200.8	4.9 µg/l	15.6 µg/l
Barium	200.7	25 µg/l	50 µg/l
Antimony	200.8	0.13 µg/l	1.0 µg/l
Antimony	200.7	3 µg/l	6 µg/l
Fluoride	SM 4500F/C	0.021 mg/l	0.10 mg/l
Fluoride	300.0	0.05 mg/l	0.1 mg/l
Arsenic	3113 B-2004	1 µg/l	3.2 µg/l
Arsenic	200.9, Rev. 2.2 (1994)	0.5 µg/l	1.6 µg/l
Arsenic	200.8, Rev. 5.4 (1994)	0.4 µg/l	1.3 µg/l
Selenium	200.8, Rev. 5.4 (1994)	0.35 µg/l	1.0 µg/l
Arsenic	200.7	5 µg/l	10 µg/l
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l
Bromine	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[18] Mercury monitoring shall be conducted 6 X annually in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E.

[19] See Part I.F. of the permit for Whole Effluent Toxicity Testing requirements.

[20] Monitoring and reporting shall apply to determine whether or not it is present in quantities that have the reasonable potential to exceed the calculated water quality based effluent limits.

[21] Upstream River temperature shall be the maximum temperature reported each day as determined from the USGS Gaging Station near Centerton. These data are “provisional data” as classified by the USGS as they are real time data and have not been subject to verification by USGS.

The upstream flow shall be the average flow for each day, as determined from the USGS Gaging Station near Centerton.

[22] Hexavalent chromium shall be measured and reported as dissolved metal. The hexavalent chromium sample type shall be by grab method. The maximum holding time for a hexavalent chromium sample is 28 days under 40 CFR 136.3(e), Table II. However, as noted in footnote 20 of Table II, to achieve the 28-day holding time, the ammonium sulfate buffer solution specified in EPA Method 218.6 must be used. This holding time allowance of 28-days supersedes the preservation and holding time requirements in the approved hexavalent chromium methods, unless this supersession would compromise the measurement, in which case the preservation and holding time requirements [the sample must be analyzed within 24 hours of collection] in the method must be followed.

2. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 103, located at Latitude 39° 29' 06", Longitude -86° 25' 42". The discharge is limited to contact stormwater from the former ash pond system and fugitive dust suppressant runoff. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Outfall 003 discharge canal. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2]

Outfall 103

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency[9]	Type
Flow[6]	Report	Report	MGD	--------	---------	------	Daily	24-Hour Total
Zinc[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab
T. Chromium[4]	----	--------	------	Report	Report	mg/l	Daily	Grab
TSS	--------	--------	------	24.0	78.0	mg/l	Daily	Grab
O+G	--------	--------	------	12.0	16.0	mg/l	Daily	Grab
Chloride	--------	--------	------	Report	Report	mg/l	Daily	Grab
Arsenic[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Cadmium[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Lead[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Mercury[4][5][7]	--------	--------	------	Report	Report	ng/l	6 X Annually	Grab
Nickel[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Selenium[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Sulfate	--------	--------	------	Report	Report	mg/l	Daily	Grab
Boron	--------	--------	------	Report	Report	mg/l	Daily	Grab
Calcium[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Fluoride[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Antimony[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Barium[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Beryllium[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Hexavalent Chromium[7][8]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Cobalt[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Lithium[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Molybdenum[4][7]	------	--------	------	Report	Report	mg/l	Daily	Grab
Thallium[4][7]	--------	--------	------	Report	Report	mg/l	Daily	Grab
Radium 226 and 228 combined[4][7]	---		------	Report	Report	pCi/L	Daily	Grab
Ammonia, as N	--------	--------	------	Report	Report	mg/l	Daily	Grab
Manganese[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab
TDS	--------	--------	------	Report	Report	mg/l	Daily	Grab
Phosphorus	--------	--------	------	Report	Report	mg/l	Daily	Grab
Aluminum[4]	--------	--------	------	Report	Report	mg/l	Daily	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH [3]	6.0	9.0	s.u.	Daily	Grab

[1] See Part I.B. of the permit for the minimum narrative limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at: https://www.in.gov/idem/forms/idem-agency-forms/.

[3] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.

[4] The permittee shall measure and report the identified metal as total recoverable metal.

[5] Mercury monitoring shall be conducted 6 X annually in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E.

[6] Flow is to be measured continuously using a flow measuring device. Since this discharge will be non-routine and intermittent, the permittee may use engineering calculations to measure flow during these times.

[7] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Mercury	1631E	0.2 ng/l	0.5 ng/l
Radium 226 and 228 combined	903.0	0.253 pCi/L	0.805 pCi/L
Thallium	200.8	0.073 µg/l	1.0 µg/l
Thallium	200.7	5 µg/l	10 µg/l
Molybdenum	200.8	0.48 µg/l	5.0 µg/l
Molybdenum	200.7	25 µg/l	50 µg/l
Lithium	200.7	4.1 µg/l	20.0 µg/l
Cobalt	200.8	0.086 µg/l	1.0 µg/l
Cobalt	200.7	5 µg/l	10 µg/l
Hexavalent Chromium	218.6	0.04 µg/l	0.1 µg/l
Beryllium	200.8	0.033 µg/l	0.20 µg/l
Barium	200.8	4.9 µg/l	15.6 µg/l

Barium	200.7	25 µg/l	50 µg/l
Antimony	200.8	0.13 µg/l	1.0 µg/l
Antimony	200.7	3 µg/l	6 µg/l
Fluoride	SM 4500F/C	0.021 mg/l	0.10 mg/l
Fluoride	300.0	0.05 mg/l	0.1 mg/l
Arsenic	200.9, Rev. 2.2 (1994)	0.5 µg/l	1.6 µg/l
Arsenic	200.8, Rev. 5.4 (1994)	0.4 µg/l	1.3 µg/l
Arsenic	200.7	5 µg/l	10 µg/l
Selenium	200.8, Rev. 5.4 (1994)	0.35 µg/l	1.0 µg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[8] Hexavalent chromium shall be measured and reported as dissolved metal. The hexavalent chromium sample type shall be by grab method. The maximum holding time for a hexavalent chromium sample is 28 days under 40 CFR 136.3(e), Table II. However, as noted in footnote 20 of Table II, to achieve the 28-day holding time, the ammonium sulfate buffer solution specified in EPA Method 218.6 must be used. This holding time allowance of 28-days supersedes the preservation and holding time requirements in the approved hexavalent chromium methods, unless this supersession would compromise the measurement, in which case the preservation and holding time requirements [the sample must be analyzed within 24 hours of collection] in the method must be followed.

[9] All samples shall be collected from a discharge resulting from a storm event. For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling. A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

B. MINIMUM NARRATIVE LIMITATIONS

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

1. including waters within the mixing zone, to contain substances, materials, floating debris, oil, scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges that do any of the following:

   a. will settle to form putrescent or otherwise objectionable deposits;

   b. are in amounts sufficient to be unsightly or deleterious;

   c. produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

   d. are in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;

   e. are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

2. outside the mixing zone, to contain substances in concentrations that on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

1. Representative Sampling

   Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge flow and shall be taken at times which reflect the full range and concentration of effluent parameters normally expected to be present. Samples shall not be taken at times to avoid showing elevated levels of any parameters.

2. Monthly Reporting

   The permittee shall submit monitoring reports to the Indiana Department of Environmental Management (IDEM) containing results obtained during the previous month and shall be submitted no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective.

These reports shall include, but not necessarily be limited to, the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR). All reports shall be submitted electronically by using the NetDMR application, upon registration, receipt of the NetDMR Subscriber Agreement, and IDEM approval of the proposed NetDMR Signatory. Access the NetDMR website (for initial registration and DMR/MMR submittal) via CDX at: https://cdx.epa.gov/. The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit. See Part II.C.10 of this permit for Future Electronic Reporting Requirements.

a. Calculations that require averaging of measurements of daily values (both concentrations and mass) shall use an arithmetic mean, except the monthly average for *E. coli* shall be calculated as a geometric mean.

b. Daily effluent values (both mass and concentration) that are less than the LOQ that are used to determine the monthly average effluent level shall be accommodated in calculation of the average using statistical methods that have been approved by the Commissioner.

c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.

d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.

e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.

f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

3. Definitions

a. “Monthly Average” means the total mass or flow-weighted concentration of all daily discharges during a calendar month on which daily discharges are sampled or measured, divided by the number of daily discharges sampled and/or measured during such calendar month.

The monthly average discharge limitation is the highest allowable average monthly discharge for any calendar month.

b. "Daily Discharge" means the total mass of a pollutant discharged during the calendar day or, in the case of a pollutant limited in terms other than mass pursuant to 327 IAC 5-2-11(e), the average concentration or other measurement of the pollutant specified over the calendar day or any twenty-four hour period that reasonably represents the calendar day for the purposes of sampling.

c. "Daily Maximum" means the maximum allowable daily discharge for any calendar day.

d. A "24-hour composite sample" means a sample consisting of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis. A flow-proportioned composite sample may be obtained by:

(1) recording the discharge flow rate at the time each individual sample is taken,

(2) adding together the discharge flow rates recorded from each individuals sampling time to formulate the "total flow" value,

(3) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,

(4) then multiply the volume of the total composite sample by each individual sample's percentage to determine the volume of that individual sample which will be included in the total composite sample.

e. "Concentration" means the weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

f. The "Regional Administrator" is defined as the Region 5 Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the

following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.

h. "Limit of Detection" or "LOD" means the minimum concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix.

i. "Limit of Quantitation" or "LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit of quantification or quantification level.

j. "Method Detection Level" or "MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

k. "Grab Sample" means a sample which is taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without considerations of time.

4. Test Procedures

The analytical and sampling methods used shall conform to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. Different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency. When more than one test procedure is approved for the purposes of the NPDES program under 40 CFR 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 122.21(e)(3) and 122.44(i)(1)(iv).

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall maintain records of all monitoring information and monitoring activities, including:

a. The date, exact place and time of sampling or measurement;

b. The person(s) who performed the sampling or measurements;

c. The date(s) analyses were performed;

d. The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such measurements and analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR) and Monthly Monitoring Report (MMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. STORMWATER MONITORING AND NON-NUMERIC EFFLUENT LIMITS

The permittee shall implement the non-numeric permit conditions in this Section of the permit for the entire site as it relates to stormwater associated with industrial activity regardless of which outfall the stormwater is discharged from.

1. Control Measures and Effluent Limits

In the technology-based limits included in Part D.2-4., the term “minimize” means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

2. Control Measures

Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part D.3 to meet the non-numeric effluent limits in Part D.4. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer’s specifications. Any deviation from the manufacturer’s specifications shall be documented. If the control measures are not achieving their intended effect in minimizing pollutant discharges, the control measures must be modified as expeditiously as practicable. Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility.

3. Control Measure Selection and Design Considerations

When selecting and designing control measures consider the following:

a. preventing stormwater from coming into contact with polluting materials is generally more effective, and cost-effective, than trying to remove pollutants from stormwater;

b. use of control measures in combination is more effective than use of control measures in isolation for minimizing pollutants in stormwater discharge;

c. assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;

d. minimizing impervious areas at your facility and infiltrating runoff

onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches), can reduce runoff and improve groundwater recharge and stream base flows in local streams, although care must be taken to avoid groundwater contamination;

e. flow can be attenuated by use of open vegetated swales and natural depressions;

f. conservation and/or restoration of riparian buffers will help protect streams from stormwater runoff and improve water quality; and

g. use of treatment interceptors (e.g. swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

4. Technology-Based Effluent Limits (BPT/BAT/BCT): Non-Numeric Effluent Limits:

a. Minimize Exposure

Minimize the exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. To the extent technologically available and economically practicable and achievable, either locate industrial materials and activities inside or protect them with storm resistant coverings in order to minimize exposure to rain, snow, snowmelt, and runoff (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, pay particular attention to the following areas:

Loading and unloading areas: locate in roofed or covered areas where feasible; use grading, berming, or curbing around the loading area to divert run-on; locate the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems.

Material storage areas: locate indoors, or in roofed or covered areas where feasible; install berms/dikes around these areas; use dry cleanup methods.

Note: Industrial materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged to receiving waters.

b. Good Housekeeping

Keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping

materials orderly and labeled, and storing materials in appropriate containers.

As part of the developed good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.

c. Maintenance

Maintain all control measures which are used to achieve the effluent limits required by this permit in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If control measures need to be replaced or repaired, make the necessary repairs or modifications as expeditiously as practicable.

d. Spill Prevention and Response Procedures

You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, you must implement:

(1) Procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

(2) Preventive measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

(3) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals

should be a member of your stormwater pollution prevention team;

(4) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available;

(5) Procedures for documenting where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfalls that would be affected by such spills and leaks; and

(6) A procedure for documenting all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance.

e. Erosion and Sediment Controls

Through the use of structural and/or non-structural control measures stabilize, and contain runoff from, exposed areas to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions to meet this limit, place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to check out information from both the State and EPA websites. The following two websites are given as information sources:

https://www.in.gov/idem/stormwater/resources/indiana-storm-water-quality-manual/
and
https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

f. Management of Runoff

Divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the discharge.

g. Salt Storage Piles or Piles Containing Salt

Enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including

maintenance of paved surfaces. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the piles is not discharged.

h. Waste, Garbage, and Floatable Debris

Ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.

i. Employee Training

Train all employees who work in areas where industrial material or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team. Training must cover the specific control measures used to achieve the effluent limits in this part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit.

j. Non-Stormwater Discharges

You must determine if any non-stormwater discharges not authorized by an NPDES permit exist. Any non-stormwater discharges discovered must either be eliminated or modified into this permit. The following non-storm water discharges are authorized and must be documented in the Stormwater Pollution Prevention Plan:

Discharges from fire-fighting activities;
Fire Hydrant flushings;
Potable water, including water line flushings;
Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
Irrigation drainage;
Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
Pavement wash water where no detergents are used and no spills or leaks of toxic or hazardous material have occurred (unless all spilled material has been removed);
Routine external building washdown that does not use detergents;

Uncontaminated groundwater or spring water;
Foundation or footing drains where flows are not contaminated with process materials;
Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from cooling towers (e.g., “piped cooling tower blowdown or drains);
Vehicle wash- waters where uncontaminated water without detergents or solvents is utilized; and
Runoff from the use of dust suppressants approved for use by IDEM.

k. Dust Generation and Vehicle Tracking of Industrial Materials

You must minimize generation of dust and off-site tracking of raw, final, or waste materials.

l. Delivery Vehicles

Minimize contamination of stormwater runoff from delivery vehicles arriving at the plant site. Consider procedures to inspect delivery vehicles arriving at the plant site and ensure overall integrity of the body or container and procedures to deal with leakage or spillage from vehicles or containers.

m. Fuel Oil Unloading Areas

Minimize contamination of precipitation or surface runoff from fuel oil unloading areas. Consider using containment curbs in unloading areas, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and using spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

n. Chemical Loading and Unloading

Minimize contamination of precipitation or surface runoff from chemical loading and unloading areas. Consider using containment curbs at chemical loading and unloading areas to contain spills, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and loading and unloading in covered areas and storing chemicals indoors.

o. Miscellaneous Loading and Unloading Areas

Minimize contamination of precipitation or surface runoff from loading and unloading areas. Consider covering the loading area; grading, berming, or curbing around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.

p. Liquid Storage Tanks

Minimize contamination of surface runoff from aboveground liquid storage tanks. Consider protective guards around tanks, containment curbs, spill and overflow protection, dry cleanup methods, or equivalent measures.

q. Large Bulk Fuel Storage Tanks

Minimize contamination of surface runoff from large bulk fuel storage tanks. Consider containment berms (or their equivalent). You must also comply with applicable State and Federal laws, including Spill Prevention, Control and Countermeasure (SPCC) Plan requirements.

r. Spill Reduction Measures

Minimize the potential for an oil or chemical spill or reference the appropriate part of your SPCC plan. Visually inspect as part of your routine facility inspection the structural integrity of all aboveground tanks, pipelines, pumps, and related equipment that may be exposed to stormwater, and make any necessary repairs immediately.

s. Oil-Bearing Equipment in Switchyards

Minimize contamination of surface runoff from oil-bearing equipment in switchyard areas. Consider using level grades and gravel surfaces to retard flows and limit the spread of spills or collecting runoff in perimeter ditches.

t. Residue-Hauling Vehicles

Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.

u. Areas Adjacent to Disposal Ponds or Landfills

Minimize contamination of surface runoff from areas adjacent to disposal ponds or landfills.

v. Landfills, Scrap yards, Surface Impoundments, Open Dumps, General Refuse Sites

Minimize the potential for contamination of runoff from these areas.

5. Annual Review

At least once every twelve (12) months, you must review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limitations in this permit. You must document the results of your review in a report that shall be retained within the SWPPP. You must also submit the report to the Industrial NPDES Permit Section, as well as the Compliance Branch, on an annual basis. The report may be submitted by email to the Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and to the Compliance Branch at wwReports@idem.in.gov. The email subject line should include the NPDES Permit # and the type of report being submitted (Annual Stormwater Report). The permittee's first annual review report will be due twelve (12) months from the effective date of the permit. All subsequent annual review reports will be due no later than the anniversary of the effective date of the permit.

6. Corrective Actions – Conditions Requiring Review

a. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated:

(1) an unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this NPDES permit) occurs at this facility;

(2) it is determined that your control measures are not stringent enough for the discharge to meet applicable water quality standards;

(3) it is determined in your routine facility inspection, an inspection by EPA or IDEM, comprehensive site evaluation, or the Annual Review required in Part D.5 that modifications to the control

measures are necessary to meet the effluent limits in this permit or that your control measures are not being properly operated and maintained; or

(4) Upon written notice by the Commissioner that the control measures prove to be ineffective in controlling pollutants in stormwater discharges exposed to industrial activity.

b. If construction activities other than those for which the facility has CGP coverage or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharged, you must review and revise the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit.

7. Corrective Action Deadlines

You must document your discovery of any of the conditions listed in Part I.D.6 within thirty (30) days of making such discovery. Subsequently, within one-hundred and twenty (120) days of such discovery, you must document any corrective action(s) to be taken to eliminate or further investigate the deficiency or if no corrective action is needed, the basis for that determination. Specific documentation required within 30 and 120 days is detailed below. If you determine that changes to your control measures are necessary following your review, any modifications to your control measures must be made before the next storm event if possible, or as soon as practicable following that storm event. These time intervals are not grace periods, but schedules considered reasonable for the documenting of your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.

8. Corrective Action Report

a. Within 30 days of a discovery of any condition listed in Part I.D.6, you must document the following information:

(1) Brief description of the condition triggering corrective action;

(2) Date condition identified; and

(3) How deficiency identified.

b. Within 120 days of discovery of any condition listed in Part I.D.6, you must document the following information:

(1) Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.D.6.b.(1), where you determine that corrective action is not necessary, the basis for this determination)

(2) Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;

(3) Date corrective action initiated; and

(4) Date corrective action completed or expected to be completed.

9. Inspections

The inspections in this Part must be conducted at this facility when the facility is operating. Any corrective action required as a result of an inspection or evaluation conducted under Part I.D.9. must be performed consistent with Part I.D.6 of this permit.

a. Monthly Site Compliance Inspection

The following areas shall be inspected monthly: loading or unloading areas, switchyards, fueling areas, bulk storage areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long-term and short-term material storage areas.

Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural stormwater management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

b. Quarterly Routine Facility Inspections

At least once during the calendar year, a routine facility inspection must be conducted while a discharge is occurring.

1. Routine Facility Inspection - At a minimum, quarterly routine inspections of the stormwater management measures and stormwater run-off conveyances. The routine inspections must be performed by qualified personnel with at least one member of your stormwater pollution prevention team.

2. Routine Facility Inspection Documentation – You must document the findings of each routine facility inspection performed and maintain this documentation within your SWPPP or have the on-site record keeping location referenced in the SWPPP. At a minimum, your documentation must include:

   (A) The inspection date and time;

   (B) The name(s) and signature(s) of the inspectors;

   (C) Weather information and a description of any discharges occurring at the time of the inspection;

   (D) Any previously unidentified discharges of pollutants from the site;

   (E) Any control measures needing maintenance or repairs;

   (F) Any failed control measures that need replacement;

   (G) Any incidents of noncompliance observed; and

   (H) Any additional control measures needed to comply with the permit requirements.

c. Annual Comprehensive Site Inspections

Comprehensive Site Inspection - Qualified personnel and at least one member of your Pollution Prevention Team shall conduct a comprehensive site inspection, at least once per calendar year, to confirm the accuracy of the description of potential pollution sources contained in the plan, determine the effectiveness of the plan, and assess compliance with the permit. Each Comprehensive Site Inspection shall include:

1. Each Comprehensive Site Inspection shall address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitator, scrubbers, and cyclones), for any signs of degradation (e.g., leaks, corrosion, or improper operation) that could limit their

efficiency and lead to excessive emissions. Considering monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes, and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing scrap, or slag, as well as chemicals stored in tanks and drums) for signs of material loss due to wind or stormwater runoff.

2. Based on the results of the inspection, the description of potential pollutant sources identified in the SWPPP in accordance with Part I.E.2.b of this permit and pollution prevention measures and controls identified in the SWPPP in accordance with Part I.D.4. of this permit shall be revised as appropriate within the timeframes contained in Part I.D.7 of this permit.

3. A report summarizing the scope of the inspection, personnel conducting the inspection, the date(s) of the inspection, major observations relating to the implementation of the stormwater pollution prevention plan, and actions taken in accordance with the above paragraph must be documented and either contained in, or have on-site record keeping location referenced in, the SWPPP at least 3 years after the date of the inspection. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the stormwater pollution prevention plan and this permit. The report shall be signed in accordance with the signatory requirements of Part II.C.6 of this permit.

4. Where the inspection schedules overlap under this section, the Comprehensive Site Inspection may be conducted in place of one such inspection.

E. STORMWATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 12 months from the effective date of this permit, the permittee is required to revise and update the current Stormwater Pollution Prevention Plan (SWPPP) for the permitted facility. The plan shall at a minimum include the following:

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the facility. Stormwater associated with industrial activity (defined in 40 CFR 122.26(b)(14)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;

b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to stormwater; and

c. Assure compliance with the terms and conditions of this permit.

2. Contents

The plan shall include, at a minimum, the following items:

a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a Stormwater Pollution Prevention Team who are responsible for developing the stormwater pollution prevention plan (SWPPP) and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each stormwater pollution prevention team member. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for stormwater to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:

(1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.

(2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which contains a legend and compass coordinates, indicating, at a minimum, the following:

(A) All on-site stormwater drainage and discharge conveyances, which may include pipes, ditches, swales,

and erosion channels, related to a stormwater discharge.

(B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.

(C) All on-site and known adjacent property water bodies, including wetlands and springs.

(D) An outline of the drainage area for each outfall.

(E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.

(F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.

(G) On-site injection wells, as applicable.

(H) On-site wells used as potable water sources, as applicable.

(I) All existing major structural control measures to reduce pollutants in stormwater run-off.

(J) All existing and historical underground or aboveground storage tank locations, as applicable.

(K) All permanently designated plowed or dumped snow storage locations.

(L) All loading and unloading areas for solid and liquid bulk materials.

(M) All existing and historical outdoor storage areas for raw materials, intermediary products, final products, and waste materials. Include materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities.

(N) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized

materials, for example, in drums and totes.

(O) Outdoor processing areas.

(P) Dust or particulate generating process areas.

(Q) Outdoor assigned waste storage or disposal areas.

(R) Pesticide or herbicide application areas.

(S) Vehicular access roads.

(T) Identify any storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, etc., and could result in a discharge of pollutants.

(U) The mapping of historical locations is only required if the historical locations have a reasonable potential for stormwater exposure to historical pollutants.

(3) An area site map that indicates:

(A) The topographic relief or similar elevations to determine surface drainage patterns;

(B) The facility boundaries;

(C) All receiving waters;

(D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate stormwater discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J)

through (T) of this Part, and any other areas thought to generate stormwater discharges exposed to industrial activity. The narrative descriptions for each identified area must include the following:

(A) Type and typical quantity of materials present in the area.

(B) Methods of storage, including presence of any secondary containment measures.

(C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of stormwater to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.

(D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their reportable quantity, including the following:

i. The date and type of material released or spilled.

ii. The estimated volume released or spilled.

iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to stormwater. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

(E) Where the chemicals or materials have the potential to be exposed to stormwater discharges, the descriptions for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

i. Toxicity data of chemicals or materials used within the area, referencing appropriate material

safety data sheet information locations.

ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.

iii. Potential ways in which stormwater discharges may be exposed to listed chemicals and materials.

iv. The likelihood of the listed chemicals and materials to come into contact with water.

(5) A narrative description of existing and planned management practices and measures to improve the quality of stormwater run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(J) through (T) and any other areas thought to generate stormwater discharges exposed to industrial activity. The description must include the following:

(A) Any existing or planned structural and nonstructural control practices and measures.

(B) Any treatment the stormwater receives prior to leaving the facility property or entering a water of the state.

(C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.

(D) Describe areas that due to topography, activities, or other factors have a high potential for significant soil erosion.

(E) Document the location of any storage piles containing salt used for deicing.

(F) Information or other documentation required under Part I.E.2(d) of this permit.

(6) The results of stormwater monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWPPP, the on-site location for storage of the information must be reference in the SWPPP.

(7) Drainage Area Site Map. Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., limestone piles).

(8) Documentation of Good Housekeeping Measures. You must document in your SWPPP the good housekeeping measures implemented to meet the effluent limits in Part I.D.4 of this NPDES permit.

c. Non-Stormwater Discharges – You must document that you have evaluated for the presence of non-stormwater discharges not authorized by an NPDES permit. Any non-stormwater discharges have either been eliminated or incorporated into this permit. Documentation of non-stormwater discharges shall include:

(1) A written non-stormwater assessment, including the following:

(A) A certification letter stating that stormwater discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-stormwater contributions.

(B) Detergent or solvent-based washing of equipment or vehicles that would allow washwater additives to enter any stormwater only drainage system shall not be allowed at this facility unless appropriately permitted under this NPDES permit.

(C) All interior maintenance area floor drains with the potential for maintenance fluids or other materials to enter stormwater only storm sewers must be either sealed, connected to a sanitary sewer with prior authorization, or appropriately permitted under this NPDES permit. The sealing, sanitary sewer connecting, or permitting of drains under this item must be documented in the written non-stormwater assessment program.

(D) The certification shall include a description of the method

used, the date of any testing, and the on-site drainage points that were directly observed during the test.

d. General Requirements – The SWPPP must meet the following general requirements:

(1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding stormwater control/treatment and monitoring, pollutant fate and transport, and drainage planning.

(2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request. IDEM may provide access to portions of your SWPPP to the public.

(3) The plan must be revised and updated as required. Revised and updated versions of the plan must be implemented on or before three hundred sixty-five (365) days from the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.

(4) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWPPP, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWPPP to meet those section requirements.

(5) The permittee may combine the requirements of the SWPPP with another written plan if:

(A) The plan is retained at the facility and available for review;

(B) All the requirements of the SWPPP are contained within the plan; and

(C) A separate, labeled section is utilized in the plan for the SWPPP requirements.

F. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

To adequately assess the effects of the effluent on aquatic life, the permittee is required by this section of the permit to conduct chronic whole effluent toxicity (WET) testing. Part I.F.1. of this permit describes the testing procedures and Part I.F.2. describes the toxicity reduction evaluation (TRE) which is only required if the effluent demonstrates toxicity in two (2) consecutive toxicity tests as described in Part I.F.1.f.

1. Whole Effluent Toxicity (WET) Tests

The permittee must conduct the series of aquatic toxicity tests specified in Part I.F.1.d. to monitor the acute and chronic toxicity of the effluent discharged from Outfall 003.

If toxicity is demonstrated in two (2) consecutive toxicity tests, as described in Part I.F.1.f., with any test species during the term of the permit, the permittee is required to conduct a TRE under Part I.F.2.

a. Toxicity Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used must be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, Section 11, Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test Method 1000.0, and Section 13, Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0, EPA 821-R-02-013, October 2002 (hereinafter "Chronic Toxicity Test Method"), or most recent update that conforms to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. [References to specific portions of the Chronic Toxicity Test Method contained in this Part I.F. are provided for informational purposes. If the Chronic Toxicity Test Method is updated, the corresponding provisions of that updated method would be applicable.]

(2) Any circumstances not covered by the above methods, or that require deviation from the specified methods must first be approved by the IDEM Permits Branch.

(3) The determination of acute and chronic endpoints of toxicity (LC_{50}, NOEC and IC_{25} values) must be made in accordance with the procedures in Section 9, "Chronic Toxicity Test Endpoints and Data Analysis" and the Data Analysis

procedures as outlined in Section 11 for fathead minnow (Test Method 1000.0; see flowcharts in Figures 5, 6 and 9) and Section 13 for *Ceriodaphnia dubia* (Test Method 1002.0; see flowcharts in Figures 4 and 6) of the Chronic Toxicity Test Method. The IC_{25} value together with 95% confidence intervals calculated by the Linear Interpolation and Bootstrap Methods in Appendix M of the Chronic Toxicity Test Method must be determined in addition to the NOEC value.

b. Types of Whole Effluent Toxicity Tests

(1) Tests may include a 3-brood (7-day) definitive static-renewal daphnid (*Ceriodaphnia dubia*) survival and reproduction toxicity test and a 7-day definitive static-renewal fathead minnow (*Pimephales promelas*) larval survival and growth toxicity test.

(2) All tests must be conducted using 24-hour composite samples of final effluent. Three effluent samples are to be collected on alternate days (e.g., collected on days one, three and five). The first effluent sample will be used for test initiation and for test solution renewal on day 2. The second effluent sample will be used for test solution renewal on days 3 and 4. The third effluent sample will be used for test solution renewal on days 5, 6 and 7. If shipping problems are encountered with renewal samples after a test has been initiated, the most recently used sample may continue to be used for test renewal, if first approved by the IDEM Permits Branch, but for no longer than 72 hours after first use.

(3) The whole effluent dilution series for the definitive test must include a control and at least five effluent concentrations with a minimum dilution factor of 0.5. The effluent concentrations selected must include and, if practicable, bracket the effluent concentrations associated with the determinations of acute and chronic toxicity provided in Part I.F.1.f. Guidance on selecting effluent test concentrations is included in Section 8.10 of the Chronic Toxicity Test Method. The use of an alternate procedure for selecting test concentrations must first be approved by the IDEM Permits Branch.

(4) If, in any control, more than 10% of the test organisms die in the first 48 hours with a daphnid species or the first 96 hours with fathead minnow, or more than 20% of the test organisms die in 7 days, that test is considered invalid and the toxicity test must be repeated. In addition, if in the *Ceriodaphnia dubia* survival and reproduction test, the average number of young

produced per surviving female in the control group is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow (*Pimephales promelas*) survival and growth test, if the mean dry weight of surviving fish in the control group is less than 0.25 mg, that test is considered invalid and must also be repeated. All other test conditions and test acceptability criteria for the fathead minnow (*Pimephales promelas*) and *Ceriodaphnia dubia* chronic toxicity tests must be in accordance with the test requirements in Section 11 (Test Method 1000.0), Table 1 and Section 13 (Test Method 1002.0), Table 3, respectively, of the Chronic Toxicity Test Method.

c. Effluent Sample Collection and Chemical Analysis

(1) Whole effluent samples taken for the purposes of toxicity testing must be 24-hour composite samples collected at a point that is representative of the final effluent, but prior to discharge. Effluent sampling for the toxicity testing may be coordinated with other permit sampling requirements as appropriate to avoid duplication. First use of the whole effluent toxicity testing samples must not exceed 36 hours after termination of the 24-hour composite sample collection and must not be used for longer than 72 hours after first use. For discharges of less than 24 hours in duration, composite samples must be collected for the duration of the discharge within a 24-hour period (see “24-hour composite sample” definition in Part I.C.3. of this permit).

(2) Chemical analysis must accompany each effluent sample taken for toxicity testing, including each sample taken for the repeat testing as outlined in Part I.F.1.f.(3). The chemical analysis detailed in Part I.A.1 must be conducted for the effluent sample in accordance with Part I.C.4. of this permit.

d. Toxicity Testing Species, Frequency and Duration

Within 90 days of the effective date of the permit, the permittee must initiate chronic toxicity testing for *Ceriodaphnia dubia* and fathead minnow (*Pimephales promelas*). The testing must be conducted monthly for a period of three (3) consecutive months.

If no toxicity is demonstrated in two (2) consecutive tests as described in Part I.F.1.f., with either species in these three (3) monthly tests, the permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent. The permittee must then conduct chronic toxicity testing once every six (6) months, as calculated from six (6) months after the

effective date of the permit, for the duration of the permit. The permittee must notify the Compliance Data Section under Part I.F.1.e. prior to reducing the number of species tested to the one most sensitive to the toxicity in the effluent.

If a TRE is initiated during the term of the permit, after receiving notification under Part I.F.1.e, the Compliance Data Section will suspend the toxicity testing requirements above for the term of the TRE compliance schedule described in Part I.F.2. After successful completion of the TRE, the toxicity tests established under Part I.F.2.c.(4) must be conducted once quarterly, as calculated from the first day of the first month following successful completion of the post-TRE toxicity tests (see Part I.F.2.c.(4)), for the remainder of the permit term.

e. Reporting

(1) Notifications of intent to reduce the number of species tested to the one most sensitive to the toxicity in the effluent under Part I.F.1.d., or notifications of the failure of two (2) consecutive toxicity tests and the intent to begin the implementation of a toxicity reduction evaluation (TRE) under Part I.F.1.f.(4) must be submitted in writing to the Compliance Data Section of IDEM's Office of Water Quality.

(2) Results of all toxicity tests, including invalid tests, must be reported to IDEM according to the general format and content recommended in the Chronic Toxicity Test Method, Section 10, "Report Preparation and Test Review". However, only the results of valid toxicity tests are to be reported on the discharge monitoring report (DMR). For the initial three (3) monthly tests, the results of the toxicity tests and laboratory report are due by the 28th day of the month following the fourth, fifth and sixth months, as calculated from the effective date of the permit. Thereafter, the results of the toxicity tests and laboratory report are due by the earlier of 60 days after completion of the test or the 28th day of the month following the end of the period established in Part I.F.1.d.

(3) The full whole effluent toxicity (WET) test laboratory report must be submitted to IDEM electronically as an attachment to an e-mail to the Compliance Data Section at wwreports@idem.IN.gov. The results must also be submitted via NetDMR.

(4) For quality control and ongoing laboratory performance, the laboratory report must include results from appropriate standard reference toxicant tests. This will consist of acute (LC_{50} values), if available, and chronic (NOEC, LOEC and IC_{25} values) endpoints of toxicity obtained from reference toxicant tests conducted within 30 days of the most current effluent toxicity tests and from similarly obtained historical reference toxicant data with mean values and appropriate ranges for each species tested for at least three months to one year. Toxicity test laboratory reports must also include copies of chain-of-custody records and laboratory raw data sheets.

(5) Statistical procedures used to analyze and interpret toxicity data (e.g., Fisher's Exact Test and Steel's Many-one Rank Test for 7-day survival of test organisms; tests of normality (e.g., Shapiro-Wilk's Test) and homogeneity of variance (e.g., Bartlett's Test); appropriate parametric (e.g., Dunnett's Test) and non-parametric (e.g., Steel's Many-one Rank Test) significance tests and point estimates (IC_{25}) of effluent toxicity, etc.; together with graphical presentation of survival, growth and reproduction of test organisms), including critical values, levels of significance and 95% confidence intervals, must be described and included as part of the toxicity test laboratory report.

(6) For valid toxicity tests, the whole effluent toxicity (WET) test laboratory report must include a summary table of the results for each species tested as shown in the table presented below. This table will provide toxicity test results, reported in acute toxic units (TU_a) and chronic toxic units (TU_c), for evaluation under Part I.F.1.f. and reporting on the discharge monitoring report (DMR).

Test Organism [1]	Test Type	Endpoint [2]	Units	Result	Compliance Limit [6]	Pass/ Fail [7]	Reporting
Ceriodaphnia dubia	3-brood (7-day) Definitive Static-Renewal Survival and Reproduction	48-hr. LC_{50}	%	Report			Laboratory Report
			TU_a	Report			
		NOEC Survival	%	Report			
			TU_c	Report			
		NOEC Reproduction	%	Report			
			TU_c	Report			
		IC_{25} Reproduction	%	Report			
			TU_c	Report			
		Toxicity (acute) [3]	TU_a	Report [5]	1.0	Report	Laboratory Report **and NetDMR** (Parameter Code 61425)
		Toxicity (chronic) [4]	TU_c	Report [5]	35.1	Report	Laboratory Report **and NetDMR** (Parameter Code 61426)
Pimephales promelas	7-day Definitive Static-Renewal Larval Survival and Growth	96-hr. LC_{50}	%	Report			Laboratory Report
			TU_a	Report			
		NOEC Survival	%	Report			
			TU_c	Report			
		NOEC Growth	%	Report			
			TU_c	Report			
		IC_{25} Growth	%	Report			
			TU_c	Report			
		Toxicity (acute) [3]	TU_a	Report [5]	1.0	Report	Laboratory Report **and NetDMR** (Parameter Code 61427)
		Toxicity (chronic) [4]	TU_c	Report [5]	35.1	Report	Laboratory Report **and NetDMR** (Parameter Code 61428)

[1] For the whole effluent toxicity (WET) test laboratory report, eliminate from the table any species that was not tested.
[2] A separate acute test is not required. The endpoint of acute toxicity must be extrapolated from the chronic toxicity test.
[3] The toxicity (acute) endpoint for *Ceriodaphnia dubia* is the 48-hr. LC_{50} result reported in acute toxic units (TU_a). The toxicity (acute) endpoint for *Pimephales promelas* is the 96-hr. LC_{50} result reported in acute toxic units (TU_a).

[4] The toxicity (chronic) endpoint for *Ceriodaphnia dubia* is the higher of the NOEC Survival, NOEC Reproduction and IC_{25} Reproduction values reported in chronic toxic units (TU_c). The toxicity (chronic) endpoint for *Pimephales promelas* is the higher of the NOEC Survival, NOEC Growth and IC_{25} Growth values reported in chronic toxic units (TU_c).
[5] Report the values for acute and chronic endpoints of toxicity determined in [3] and [4] for the corresponding species. These values are the ones that need to be reported on the discharge monitoring report (DMR).
[6] These values do not represent effluent limitations, but rather exceedance of these values results in a demonstration of toxicity that triggers additional action and reporting by the permittee.
[7] If the toxicity result (in TUs) is less than or equal to the compliance limit, report "Pass". If the toxicity result (in TUs) exceeds the compliance limit, report "Fail".

f. Demonstration of Toxicity

(1) Toxicity (acute) will be demonstrated if the effluent is observed to have exceeded 1.0 TU_a (acute toxic units) for *Ceriodaphnia dubia* in 48 hours or in 96 hours for *Pimephales promelas*. For this purpose, a separate acute toxicity test is not required. The results for the acute toxicity demonstration must be extrapolated from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(2), the effluent concentration associated with acute toxicity is 100%.

(2) Toxicity (chronic) will be demonstrated if the effluent is observed to have exceeded 35.1 TU_c (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas* from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(2), the effluent concentration associated with chronic toxicity is 2.8%.

(3) If toxicity (acute) or toxicity (chronic) is demonstrated in any of the chronic toxicity tests specified above, a repeat chronic toxicity test using the procedures in Part I.F.1. of this permit and the same test species must be initiated within two (2) weeks of test failure. During the sampling for any repeat tests, the permittee must also collect and preserve sufficient effluent samples for use in any toxicity identification evaluation (TIE) and/or toxicity reduction evaluation (TRE), if necessary.

(4) If any two (2) consecutive chronic toxicity tests, including any and all repeat tests, demonstrate acute or chronic toxicity, the permittee must notify the Compliance Data Section under Part I.F.1.e. within 30 days of the date of termination of the second test, and begin the implementation of a toxicity reduction evaluation (TRE) as described in Part I.F.2. After receiving notification from the permittee, the Compliance Data Section

will suspend the whole effluent toxicity testing requirements in Part I.F.1. for the term of the TRE compliance schedule.

g. Definitions

(1) "Acute toxic unit" or "TU_a" is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

(2) "Chronic toxic unit" or "TU_c" is defined as 100/NOEC or $100/IC_{25}$, where the NOEC or IC_{25} are expressed as a percent effluent in the test medium.

(3) "Inhibition concentration 25" or "IC_{25}" means the toxicant (effluent) concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant (effluent) that would cause a twenty-five percent (25%) reduction in mean young per female or in growth for the test population.

(4) "No observed effect concentration" or "NOEC" is the highest concentration of toxicant (effluent) to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms, that is, the highest concentration of toxicant (effluent) in which the values for the observed responses are not statistically significantly different from the controls.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE is only required if toxicity is demonstrated in two (2) consecutive tests as described in Part I.F.1.f.(4). The post-TRE toxicity testing requirements in Part I.F.2.c. must also be completed as part of the TRE compliance schedule.

Milestone Dates: See a. through e. below for more detail on the TRE milestone dates.

Requirement	**Deadline**
Development and Submittal of a TRE Plan	Within 90 days of the date of two (2) consecutive failed toxicity tests.
Initiate a TRE Study	Within 30 days of TRE Plan submittal.

Submit TRE Progress Reports	Every 90 days beginning six (6) months from the date of two (2) consecutive failed toxicity tests.
Post-TRE Toxicity Testing Requirements	Immediately upon completion of the TRE, conduct three (3) consecutive months of toxicity tests with both test species; if no acute or chronic toxicity is shown with any test species, reduce toxicity tests to once quarterly for the remainder of the permit term. If post-TRE toxicity testing demonstrates toxicity, continue the TRE study.
Submit Final TRE Report	Within 90 days of successfully completing the TRE (including the post-TRE toxicity testing requirements), not to exceed three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests.

a. Development of TRE Plan

Within 90 days of the date of two (2) consecutive failed toxicity tests (i.e. the date of termination of the second test), the permittee must submit plans for an effluent TRE to the Compliance Data Section. The TRE plan must include appropriate measures to characterize the causative toxicants and reduce toxicity in the effluent discharge to levels that demonstrate no toxicity with any test species as described in Part I.F.1.f. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications listed below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characterization Procedures, Second Edition (EPA/600/6-91/003), February 1991.

Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080), September 1993.

Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/081), September 1993.

(2) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I (EPA/600/6-91/005F), May 1992.

(3) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs) (EPA/600/2-88/070), April 1989.

(4) Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program, U.S. EPA, March 27, 2001.

b. Conduct the TRE

Within 30 days after submittal of the TRE plan to the Compliance Data Section, the permittee must initiate the TRE consistent with the TRE plan.

c. Post-TRE Toxicity Testing Requirements

(1) After completing the TRE, the permittee must conduct monthly post-TRE toxicity tests with the two (2) test species *Ceriodaphnia dubia* and fathead minnow (*Pimephales promelas*) for a period of three (3) consecutive months.

(2) If the three (3) monthly tests demonstrate no toxicity with any test species as described in Part I.F.1.f., the TRE will be considered successful. Otherwise, the TRE study must be continued.

(3) The post-TRE toxicity tests must be conducted in accordance with the procedures in Part I.F.1. The results of these tests must be submitted as part of the final TRE Report required under Part I.F.2.d.

(4) After successful completion of the TRE, the permittee must resume the chronic toxicity tests required in Part I.F.1. The permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent. The established starting date for the frequency in Part I.F.1.d. is the first day of the first month following successful completion of the post-TRE toxicity tests.

d. Reporting

(1) Progress reports must be submitted every 90 days to the Compliance Data Section beginning six (6) months from the date of two (2) consecutive failed toxicity tests. Each TRE progress report must include a listing of proposed activities for the next quarter and a schedule to reduce toxicity in the effluent

discharge to acceptable levels through control of the toxicant source or treatment of whole effluent.

(2) Within 90 days of successfully completing the TRE, including the three (3) consecutive monthly tests required as part of the post-TRE toxicity testing requirements in Part I.F.2.c., the permittee must submit to the Compliance Data Section a final TRE Report that includes the following:

(A) A discussion of the TRE results;
(B) The starting date established under Part I.F.2.c.(4) for the continuation of the toxicity testing required in Part I.F.1.; and
(C) If applicable, the intent to reduce the number of species tested to the one most sensitive to the toxicity in the effluent under Part I.F.2.c.(4).

e. Compliance Date

The permittee must complete items a., b., c. and d. from Part I.F.2. and reduce toxicity in the effluent discharge to acceptable levels as soon as possible, but no later than three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests (i.e. the date of termination of the second test) as described in Part I.F.1.f.(4).

G. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for Mercury at Outfall 003 in accordance with the following schedule:

a. The permittee shall submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) nine (9) months from the effective date of this permit. The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for Mercury, in addition to any other relevant information. The progress report shall also include a specific timeline specifying when each of the steps will be taken. The new effluent limits for Mercury are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the newly imposed effluent limits for Mercury can be met. Upon receipt of such notification by OWQ, the final limits for Mercury will become effective, but no later than thirty-six (36) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

b. The permittee shall submit a subsequent progress report to the Compliance Data Section of OWQ no later than eighteen (18) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the timeline set out in the initial progress report.

c. The permittee shall submit a subsequent progress report to the Compliance Data Section of OWQ no later than twenty-seven (27) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

d. Pursuant to Part II.A.14 of this permit, within thirty (30) days of completion of construction, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

e. The permittee shall comply with the final effluent limitations for Mercury no later than thirty-six (36) months from the effective date of this permit.

2. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Data Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

H. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

b. controls any pollutant not limited in the permit.

2. for any of the causes listed under 327 IAC 5-2-16.

3. to include whole effluent toxicity limitations or to include limitations for specific toxicants if the results of the biomonitoring and/or the TRE study indicate that such limitations are necessary to meet Indiana Water Quality Standards.

4. to include a case-specific Limit of Detection (LOD) and/or Limit of Quantitation (LOQ). The permittee must demonstrate that such action is warranted in accordance with the procedures specified under Appendix B, 40 CFR Part 136, using the most sensitive analytical methods approved by EPA under 40 CFR Part 136, or approved by the Commissioner.

5. to comply with any revisions to the federal effluent guidelines applicable to this facility; the Steam Electric Power Generating effluent guidelines (40 CFR Part 423), if the revised guideline as issued or approved contains different conditions than those in the permit.

6. to specify the use of a different analytical method if a more sensitive analytical method has been specified in or approved under 40 CFR 136 or approved by the Commissioner to monitor for the presence and amount in the effluent of the pollutant for which the WQBEL is established. The permit shall specify the LOD and LOQ that can be achieved by use of the specified analytical method.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all terms and conditions of this permit in accordance with 327 IAC 5-2-8(1) and all other requirements of 327 IAC 5-2-8. Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

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 the permit.

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

3. 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 obtain and submit an application for renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if all of the following occur:

a. permission is requested in writing before such deadline;

b. IDEM grants permission to submit the application after the deadline; and

c. the application is received no later than the permit expiration date.

4. Permit Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date;

b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner;

c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility; and

d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

5. Permit Actions

a. In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

(1) Violation of any terms or conditions of this permit;

(2) Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or

(3) A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit, e.g., plant closure, termination of discharge by connection to a POTW, a change in state law that requires the reduction or elimination of the discharge, or information indicating that the permitted discharge poses a substantial threat to human health or welfare.

b. Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility that:

(1) could significantly change the nature of, or increase the quantity of pollutants discharged; or

(2) the commissioner may request to evaluate whether such cause exists.

c. In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

6. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or invasion of other private rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

7. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other provisions or applications of the permit which can be given effect without the invalid provision or application.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

10. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Environmental Rules Board is liable for a civil penalty not to exceed twenty-five thousand dollars ($25,000) per day of any violation.

Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation performed under IC 13-14-2-2 commits a class C infraction.

Pursuant to IC 13-30-10-1.5(e), a person who willfully or negligently violates any NPDES permit condition or filing requirement, or any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, commits a Class A misdemeanor.

Pursuant to IC 13-30-10-1.5(i), an offense under IC 13-30-10-1.5(e) is a Level 4 felony if the person knowingly commits the offense and knows that the commission of the offense places another person in imminent danger of death or serious bodily injury. The offense becomes a Level 3 felony if it results in serious bodily injury to any person, and a Level 2 felony if it results in death to any person.

Pursuant to IC 13-30-10-1.5(g), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-8 commits a Class B misdemeanor.

Pursuant to IC 13-30-10-1.5(h), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-9, IC 13-18-10, or IC 13-18-10.5 commits a Class C misdemeanor.

Pursuant to IC 13-30-10-1, a person who knowingly or intentionally makes any false material statement, representation, or certification in any NPDES form, notice, or report commits a Class B misdemeanor.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(10), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10-1, provides that any person who knowingly or intentionally (a) destroys, alters, conceals, or falsely certifies a record, (b) tampers with, falsifies, or renders inaccurate or inoperative a recording or monitoring device or method, including the data gathered from the device or method, or (c) makes a false material statement or representation in any label, manifest, record, report, or other document; all required to be maintained under the terms of a permit issued by the department commits a Class B misdemeanor.

12. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

13. Wastewater treatment plant and certified operators

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7.

327 IAC 5-22-10.5(a) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(11), “responsible charge operator” means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(4), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

14. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

The notice and design summary shall be sent to the Office of Water Quality, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(8), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and

d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

16. New or Increased Discharge of Pollutants

This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.

b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6.

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(9).

Neither 327 IAC 5-2-8(9), nor this provision, shall be construed to require the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(12), the following are requirements for bypass:

a. The following definitions:

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

(2) “Severe property damage” means substantial physical damage to property, damage to the treatment facilities which would cause 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.

b. The permittee may allow a bypass to occur that does not cause a violation of the effluent limitations contained in this permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to Part II.B.2.c. and d.

c. The permittee must provide the Commissioner with the following notice:

(1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

(2) As required by 327 IAC 5-2-8(11)(C), the permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within twenty-four (24) hours from the time the permittee becomes aware of such noncompliance. A written submission shall also be provided within five (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 cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. If a complete report is submitted by e-mail within 24 hours of the noncompliance, then that e-mail report will satisfy both the oral and written reporting requirement. E-mails should be sent to wwreports@idem.in.gov.

d. The following provisions are applicable to bypasses:

(1) Except as provided by Part II.B.2.b., bypass is prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:

(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 down time. 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 that occurred during normal periods of equipment downtime or preventive maintenance.

(C) The permittee submitted notices as required under Part II.B.2.c.

(2) The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.d.(1). The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

e. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(13):

a. "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.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.

c. 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 the permittee has identified the specific cause(s) of the upset;

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

(3) The permittee complied with any remedial measures required under Part II.A.2; and

(4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal. The discharge of pollutants in treated wastewater is allowed in compliance with the applicable effluent limitations in Part I. of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(11)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. In this context, permitted facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as defined in 327 IAC 5-1.5.

b. The alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9. of this permit.

Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(10) and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Monthly Reporting", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(11)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge that is in noncompliance are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the noncomplying circumstances;

c. Any upset (as defined in Part II.B.3 above) that causes an exceedance of any effluent limitation in the permit

d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants or hazardous substances: Mercury

The permittee can make the oral reports by calling (317)232-8670 during regular business hours and asking for the Compliance Data Section or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. 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 and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively the permittee may submit a "Bypass/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 52415), whichever is appropriate, to IDEM at

(317) 232-8637 or wwreports@idem.in.gov. If a complete e-mail submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the email report will satisfy both the oral and written reporting requirements.

4. Other Compliance/Noncompliance Reporting

Pursuant to 327 IAC 5-2-8(11)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3;

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

All 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 14 days following each schedule date.

5. Other Information

Pursuant to 327 IAC 5-2-8(11)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(15):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a responsible corporate officer. A "responsible corporate officer" means either of the following:

(A) A president, secretary, treasurer, any vice president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation; or

(B) The manager of one (1) or more manufacturing, production, or operating facilities provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty to make major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a Federal, State, or local governmental body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The authorization is submitted to the Commissioner.

c. Electronic Signatures. If documents described in this section are submitted electronically by or on behalf of the NPDES-regulated facility, any person providing the electronic signature for such documents shall meet all relevant requirements of this section, and shall ensure that all of the relevant requirements of 40 CFR part 3 (including, in all cases, subpart D to part 3) (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

d. Certification. Any person signing a document identified under Part II.C.6., shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(15) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

9. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to know:

a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant that is not limited in the permit if that discharge will exceed the highest of the following notification levels.

(1) One hundred micrograms per liter (100 µg/l);

(2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

(4) A notification level established by the Commissioner on a case-by-case basis, either at the Commissioner's own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).

b. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application under 40 CFR 122.21(g)(9). However, this subsection b. does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

10. Future Electronic Reporting Requirements

IDEM is currently developing the technology and infrastructure necessary to allow compliance with the EPA Phase 2 e-reporting requirements per 40 CFR 127.16 and to allow electronic reporting of applications, notices, plans, reports, and other information not covered by the federal e-reporting regulations. IDEM will notify the permittee when IDEM's e-reporting system is ready for use for one or more applications, notices, plans, reports, or other information. This IDEM notice will identify the specific applications, notices, plans, reports, or other information that are to be submitted electronically and the permittee will be required to use the IDEM electronic reporting system to submit the identified application(s), notice(s), plan(s), report(s), or other information. See Part I.C.2. of this permit for the current electronic reporting requirements for the submittal of monthly monitoring reports such as the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR).

PART III
Other Requirements

A. Polychlorinated Biphenyl

There shall be no discharge of polychlorinated biphenyl (PCB) compounds attributable to facility operations such as those historically used in transformer fluids. In order to determine compliance with the PCB discharge prohibition, the permittee shall provide the following PCB data with the next NPDES permit renewal application for at least one sample taken from each final outfall. The corresponding facility water intakes shall be monitored at the same time as the final outfalls.

Parameter	Test Method	LOD	LOQ
*Total PCBs	608	0.1 ug/l	0.3 ug/l

*Total PCBs is the sum of the following aroclors: PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, and PCB-1260.

National Pollutant Discharge Elimination System
Fact Sheet for
Indianapolis Power & Light Company d.b.a. AES Indiana - Eagle Valley Generating Station
Draft: January 2023
Final: March 2023

Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Permittee:	Indianapolis Power & Light Company d.b.a. AES Indiana 4040 Blue Bluff Road Martinsville, Indiana, 46151
Existing Permit Information:	Permit Number: IN0004693 Expiration Date: September 30, 2022
Facility Contact:	David Sacksteder, Sr. Analyst EHS (317) 443-1279, david.sacksteder@aes.com
Facility Location:	Eagle Valley Generating Station 4040 Blue Bluff Road Martinsville, Indiana 46151 Morgan County
Receiving Stream(s):	West Fork of White River
GLI/Non-GLI:	Non-GLI
Proposed Permit Action:	Renew
Date Application Received:	March 31, 2022
Source Category	NPDES Major– Industrial
Permit Writer:	Jodi Glickert, Senior Environmental Manager (317) 447-4176; jglicker@idem.in.gov

Table of Contents

1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from AES Indiana-Eagle Valley Generating Station on March 31, 2022.

In accordance with 327 IAC 5-2-6(a), the current five year permit was issued with an effective date of October 1, 2017. The permit was subsequently modified on October 1, 2020. A five-year permit is proposed in accordance with 327 IAC 5-2-6(a).

The Federal Water Pollution Control Act (more commonly known as the Clean Water Act), as amended, (Title 33 of the United States Code (U.S.C.) Section 1251 *et seq.*), requires an NPDES permit for the discharge of pollutants into surface waters. Furthermore, Indiana law requires a permit to control or limit the discharge of any contaminants into state waters or into a publicly owned treatment works. This proposed permit action by IDEM complies with and implements these federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.56, as well as Title 327 of the Indiana Administrative Code (IAC) Article 5-3-8, a Fact Sheet is required for certain NPDES permits. This document fulfills the requirements established in these regulations. This Fact Sheet was prepared in order to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, Indiana water quality standards-based wasteload allocations, and other information available to IDEM. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

2.0 FACILITY DESCRIPTION

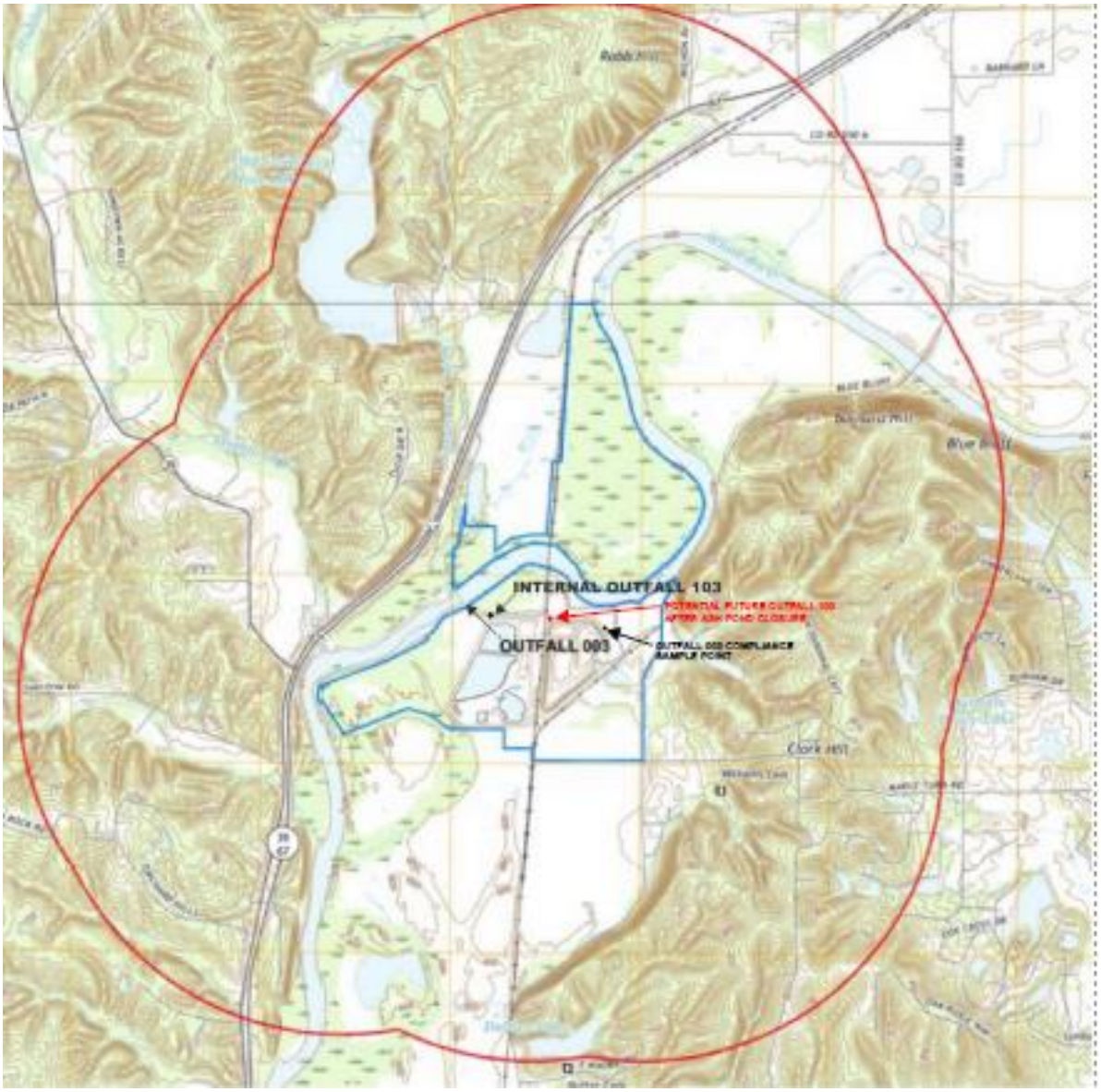
2.1 General

AES Indiana Eagle Valley Generating Station is classified under Standard Industrial Classification (SIC) Code 4911-Electric Power Generation.

The facility produces electricity. AES Indiana Eagle Valley Generating Station was a coal-fired generating station with a normal capacity of 344 megawatts. The facility has decommissioned and demolished the coal units and has commissioned a combined-cycle natural-gas turbine (CCGT) operation which consists of two (2) combined-cycle natural-gas turbines with steam being produced by two (2) Heat Recovery Steam Generators with a duct burner each supplying a steam turbine generator and an auxiliary boiler to replace the coal-fired generation units. The facility stopped coal use in 2016; the CCGT commercial operation began in 2018. The source water for the facility is well-water.

A map showing the location of the facility has been included as Figure 1.

Figure 1: Facility Location



4040 Blue Bluff Road
Martinsville, IN – Morgan County

2.2 Outfall Locations

Outfall 003	Latitude: 39º 29’ 10” Longitude: -86º 25’ 50”
Outfall 103	Latitude: 39º 29’ 06” Longitude: -86º 25’ 42”

2.3 Wastewater Treatment

The CCGT operation extracts water from on-site wells for non-potable plant use. Plant water is treated for use in the steam cycle and for cooling by reverse osmosis (RO), multimedia filtration, and brine-zeolite softeners. Both the water treatment system and the cooling system generate wastewater. In addition, the discharge canal also serves as part of the facility's overall wastewater treatment system in that it provides thermal dissipation.

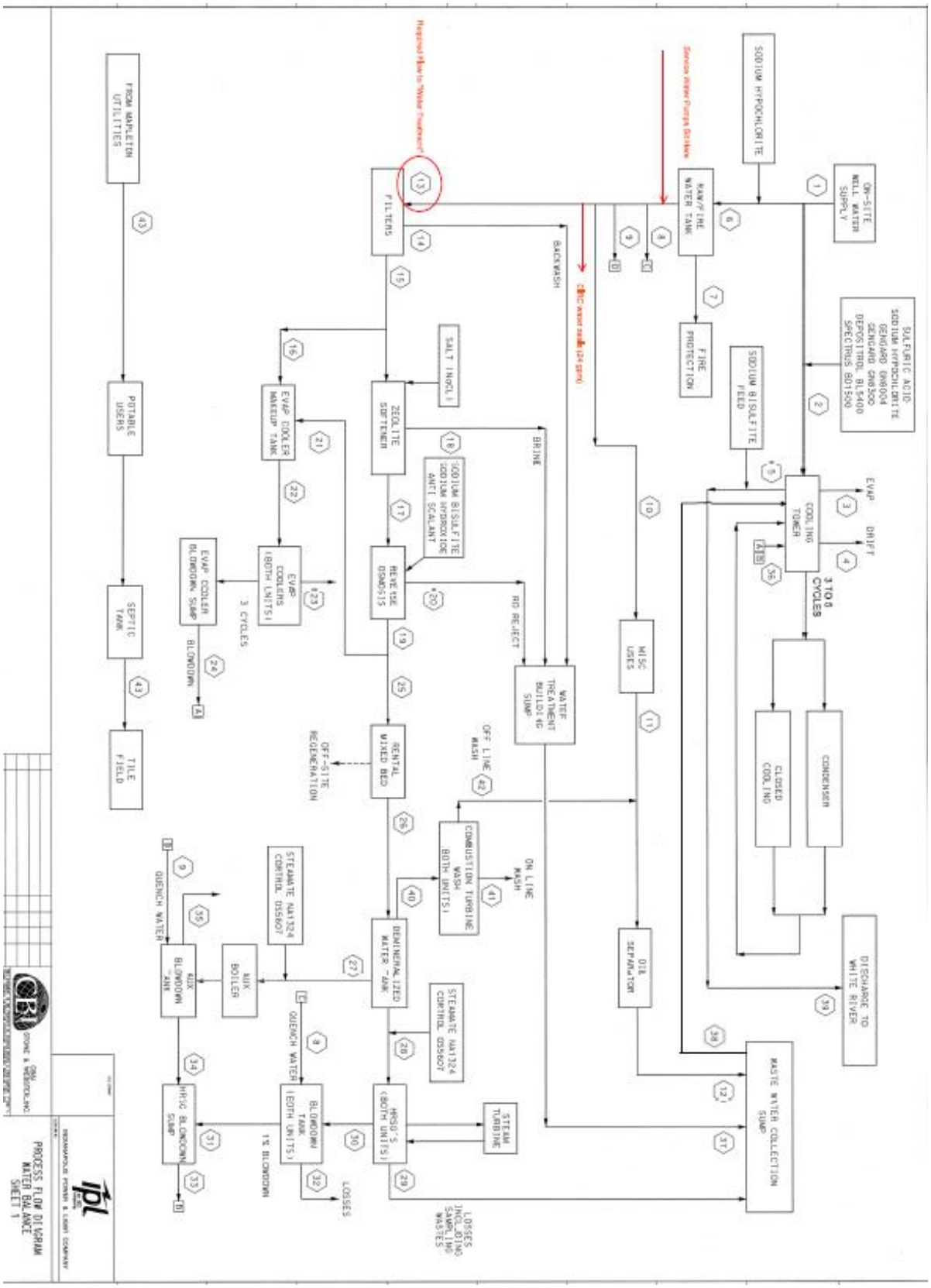
Internal Outfall 103 historically included water treatment system wastewater, non-chemical metal cleaning wastes (all-inclusive), floor drains treated with oil separator wastewater, low-volume wastes, miscellaneous plant drains, dredged material, fire protection deluge systems water, various water storage tank overflows, plant plumps, yard drains, and general plant storm water. The wastewater from Internal Outfall 103 was treated with flotation/sedimentation mixing, skimming, and neutralization. The ash sluicing ended when the coal-fired operations ceased in 2016. The ash ponds are only authorized to accept storm water and fugitive dust suppressant runoff and are not anticipated to discharge to the Discharge Canal via Outfall 103. Outfall 103 has not discharged since the 2017 permit was issued. Should discharge occur, monitoring and effluent limitations for pollutants of concern are included. Outfall 103 will be removed at a future date yet undefined as part of ash pond closure activities that are in the process of being completed.

Outfall 003 consists of direct-mixed cooling tower blowdown, waste consisting of water treatment system wastewater, HRSG blowdown, cooling tower blowdown, floor drains treated with oil separator wastewater, filter backwash water, zeolite softener brine, RO reject water, and contact stormwater from Internal Outfall 103. The facility captures and disposes off-site any metal cleaning wastewater generated with the new CCGT station.

The average daily discharge from Outfall 003 to the West Fork of the White River is 0.5 MGD. The design flow (highest monthly average) based on the most recent 2 years of data is 1.3 MGD.

A Water Balance Diagram has been included as Figure 2.

Figure 2: Water Balance Diagram



The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22-5. In order to operate a wastewater treatment plant, the operator shall have qualifications as established in 327 IAC 5-22-7. IDEM has given the permittee a Class A-SO industrial wastewater treatment plant classification.

2.4 Changes in Operation

The facility began commercial CCGT operation in 2018.

2.5 Facility Stormwater

Facility stormwater used to be discharged via Outfalls SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, and SW-9. However, these outfalls were removed in the 2020 Permit modification due to the elimination of all coal-fired activities, no exposure to industrial activity, and unique topographical characteristics in portions of the facility that provide for infiltration and/or evaporation of the discharges.

3.0 PERMIT HISTORY

3.1 Compliance History

The purpose of this section is to summarize any violations and enforcement actions associated with the permit.

A review of this facility's discharge monitoring data was conducted for compliance verification. This review indicates the following permit limitation violations at Outfall 003 between July 2019 and July of 2022; two (2) total residual chlorine violations (March 2021 & February 2022). There are no pending or current enforcement actions regarding this NPDES permit.

4.0 LOCATION OF DISCHARGE/RECEIVING WATER USE DESIGNATION

The receiving stream for Outfall 003 is the West Fork of the White River. The $Q_{7,10}$ low flow value of the West Fork of the White River is 274 cfs and shall be capable of supporting a well-balanced, warm water aquatic community and full body contact recreation in accordance with 327 IAC 2-1-3.

The permittee discharges to a waterbody that has been identified as a water of the state that is not within the Great Lakes system. Therefore, it is subject to NPDES requirements specific to dischargers not discharging to waters within the Great Lakes system under 327 IAC 2-1 and 327 IAC 5-2-11.1. These rules contain applicable water quality standards and the procedures to calculate and incorporate water quality-based effluent limitations.

4.1 Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act requires states to identify waters, through their Section 305(b) water quality assessments, that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of impaired waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. Indiana's 2022 303(d) List of Impaired Waters was developed in accordance with Indiana's Water Quality Assessment and 303(d) Listing Methodology for Waterbody Impairments and Total Maximum Daily Load Development for the 2022 Cycle.

The assessment unit for the West Fork of the White River is INW01F3_01 at the outfall and INW01F3_04 downstream. Assessment Unit INW01F3_01 is on the 2022 303(d) list for mercury in the water column. Both assessment units are on the 2022 303(d) list for PCBs in fish tissue. Additionally, while not listed on the State of Indiana 2022 303(d) list, the USEPA listed unit INW01F3_04 as impaired for iron. A TMDL for Middle West Fork of White River for *E. coli* was approved by U.S. EPA on July 21, 2005 and includes both assessment units.

5.0 PERMIT LIMITATIONS

5.1 Technology-Based Effluent Limits (TBEL)

TBELs require every individual member of a discharge class or category to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. TBELs are developed by applying the National Effluent Limitation Guidelines (ELGs) established by EPA for specific industrial categories. Technology-based treatment requirements established pursuant to sections 301(b) and 306 of the CWA represent the minimum level of control that must be imposed in an NPDES permit (327 IAC 5-5-2(a)).

In the absence of ELGs, TBELs can also be established on a case-by-case basis using best professional judgment (BPJ) in accordance with 327 IAC 5-2-10 and 327 IAC 5-5 (which implement 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)).

BEST PROFESSIONAL JUDGEMENT (BPJ)

EPA develops effluent limitation guidelines (ELGs) for existing industrial and commercial activities as directed in the 1972 amendments of the Clean Water Act. The federal effluent limitation guidelines and standards are located at 40 CFR 403 through 471, inclusive, and are incorporated into Indiana law at 327 IAC 5-2-1.5. In Indiana, NPDES permits are required to ensure compliance with these federal effluent limitation guidelines and standards under 327 IAC 5-2-10(a)(1), 327 IAC 5-2-10(a)(2), and 327 IAC 5-5-2. ELGs are technology-based effluent limitations (TBELs). The intent of a TBEL is to require a minimum level of treatment for industrial point sources based on currently available treatment technologies. Where EPA has not yet developed guidelines for a particular industry, best professional judgment (BPJ) may be

used to develop case-by-case technology-based permit limitations under 327 IAC 5-5-2 and 5-2-10 (see also 40 CFR 122.44 and 125.3, and Section 402(a)(1) of the Clean Water Act).

Outfall 003 and 103

The U.S. EPA has established technology based effluent guidelines for steam electric generating facilities. The applicable technology based standards for the Eagle Valley Generating Station are contained in 40 CFR 423-Steam Electric Power Generating Point Source Category. Since this facility is classified as an "existing point source", all discharges are subject to effluent guidelines in 40 CFR 423.12, Best Practicable Control Technology (BPT) and 40 CFR 423.13, Best Available Control Technology (BAT).

Requirements applicable to all wastewater streams:

1. pH control- 40 CFR 423.12(b)(1), the pH of all discharges, except once through cooling water, shall be within the range of 6.0-9.0 s.u. (BPT)
2. Polychlorinated biphenyl (PCB)- 40 CFR 423.12(b)(2) and 40 CFR 423.13(a), there shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid. (BPT)

Regulated wastewater streams and their applicable requirements

There are three (3) wastewater streams that are regulated by 40 CFR Part 423 and are applicable to the new CCGT facility:

1. Low volume wastewater-the BPT guidelines are contained in 40 CFR 423.12(b)(3) and there are no BAT guidelines.
2. Cooling tower blowdown-the BPT guidelines are contained in 40 CFR 423.12(b)(7) and (b)(8), and the BAT guidelines are contained in 40 CFR 423.13(d).
3. Metal Cleaning Wastewater - the BPT guidelines are contained in 40 CFR 423.12(b)(7) and (b)(8), and the BAT guidelines are contained in 40 CFR 423.13(d).

Effluent Guidelines from 40 CFR 423

Wastewater Stream*	TRC (mg/l)		Free Available Chlorine (mg/l)		TSS (mg/l)		O & G (mg/l)		T. Copper (mg/l)		T. Iron (mg/l)		T. Chromium (mg/l)		T. Zinc (mg/l)	
	Daily Max	Mo. Avg	Daily Max	Mo. Avg	Daily Max	Mo. Avg	Daily Max	Mo. Avg	Daily Max	Mo. Avg	Daily Max	Mo. Avg	Daily Max	Mo. Avg	Daily Max	Mo. Avg
Once through non-contact cooling water	There is no Once-Through Non-Contact Cooling Water system. Therefore, this ELG does not apply.															
Cooling tower blowdown ***			0.5**	0.2**									0.2	0.2	1.0	1.0
Low volume wastewater ****					100.0	30.0	20.0	15.0								
Ash handling wastewater	The facility is no longer coal fired. Therefore, this ELG no longer applies to the CCGT facility.															
Metal cleaning wastewater*****									1.0	1.0	1.0	1.0				
Coal Pile Runoff	The facility does not generate coal pile runoff and is no longer coal fired. Therefore, this ELG no longer applies to the CCGT facility.															

*When wastewater streams are combined for discharge and/or treatment 40 CFR 423 requires that the quantity of each pollutant or pollutant property controlled attributable to each controlled waste source shall not exceed the specified limitations for that waste source.

**Neither free available chlorine nor total residual chlorine 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 or total residual chlorine at any one time.

***The discharge of cooling tower blowdown is regulated by the 40 CFR 423.13(d) which prohibits the discharge of the 126 priority pollutants listed in Appendix A of this regulation in detectable amounts with the exception of total zinc and total chromium which have specific numeric limits.

****This facility has a number of wastestreams that are categorized as low volume wastes as defined in 40 CFR 423.11(b). These low volume wastestreams are routed to the cooling tower basin and reused for cooling water at the facility. Any low volume wastewater is either evaporated or discharged as cooling tower blowdown. However, sampling of the cooling tower blowdown stream before combining with the low volume waste reuse cooling water is not feasible at this facility. There is no upstream sampling location or cooling tower blowdown stream at this site that does not include low volume waste reuse water. All effluent discharged through Outfall 003 includes cycled up low volume waste as part of the cooling tower blowdown. Because of this, best professional judgement (BPJ) TBELs have been applied to the discharge. The TBELs calculated by BPJ are equivalent to the BPT limits in this table. However, due to the antibacksliding regulations, the limits are carried over from the last permit.

*****All metal cleaning wastewater is hauled offsite. Therefore, these ELGs do not apply.

5.2 Water Quality-Based Effluent Limits

WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The WQBELs for this facility are based on water quality criteria in 327 IAC 2-1-6 or developed under the procedures described in 327 IAC 2-1-8.2 through 8.7 and 327 IAC 2-1-8.9, and implementation procedures in 327 IAC 5. Limitations are required for any parameter which has the reasonable potential to exceed a water quality criterion as determined using the procedures under 327 IAC 5-2-11.1(h).

5.3 Effluent Limitations and Monitoring Requirements by Outfall

Under 327 IAC 5-2-10(a) (see also 40 CFR 122.44), NPDES permit requirements are technology-based effluent limitations and standards (including technology-based effluent limitations (TBELs) based on federal effluent limitations guidelines or developed on a case-by-case basis using best professional judgment (BPJ), where applicable), water quality standards-based, or based on other more stringent requirements. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application and other available information relating to the facility and the receiving waterbody as well as the applicable federal effluent limitations guidelines. In addition, when renewing a permit, the existing permit limits, the antibacksliding requirements under 327 IAC 5-2-10(a)(11), and the antidegradation requirements under 327 IAC 2-1.3 must be considered.

5.3.1 All External Outfalls (003)

Narrative Water Quality Based Limits

The narrative water quality criteria contained under 327 IAC 2-1-6(a)(1) and (2) have been included in this permit to ensure that these minimum water quality conditions are met.

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

5.3.2 Outfall 003

pH

Discharges to waters of the state are limited to the range of 6.0-9.0 s.u., in accordance with 327 IAC 2-1-6(b)(2).

Temperature

Effluent Limitations for temperature are based on the criteria established in 327 IAC 2-1-6(b). The 2012 permit incorporated 316(a) Alternate Thermal Effluent Limitations (ATELs). However, with the construction and utilization of a closed-loop, recirculating cooling tower, the 316(a) ATELs are no longer applicable but monitoring is still required.

Total Residual Chlorine

A limitation of 0.2 mg/l daily maximum for TRC currently exists in the permit based on WQBELs for intermittent discharge. The WQBEL is equal to or more stringent than the current and revised BBF calculations.

The water quality based effluent limitation (WQBELs) for continuous total residual chlorine is based on the water quality standards in 327 IAC 2-1-6 and are 0.02 mg/l, monthly average and 0.04 mg/l daily maximum. Continuous chlorination is considered all occurrences that do not meet the definition of intermittent chlorination, as described in 327 IAC 2-1-6 Table 1, Footnote [a].

The monitoring requirements and effluent limitations for total residual oxidants (TRO) will apply at any time bromine is used and may be in the discharge. The permittee must use the test methods for total residual chlorine (TRC) to determine total residual oxidants. The permittee will be considered in compliance with the permit limits if the effluent concentrations measured are less than the LOQ of 0.06 mg/l for continuous bromination.

TRC is also subject to 40 CFR 423.13(b)(1), which states that the quantity of pollutants discharged in once through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times the concentration. TRC may not be discharged from any single generating unit for more than two hours per day unless the discharged demonstrates that discharge for more than two hours is required for macroinvertebrate control. Simultaneous multi-unit chlorination is permitted.

Boron

Monitoring for boron has been included in this permit because it is a pollutant of concern. In a 2019 groundwater sampling report submitted in regard to the ash pond closure at the facility, boron levels approached 5 mg/l for this facility. Boron levels vary in the production wells up to 2 mg/l. The effluent data currently averages around 5 mg/l. Monitoring requirements are included at 1 X Monthly to evaluate the variability of boron in the wastewater discharge.

Fluoride, Chloride, Sulfate, Total Dissolved Solids (TDS), Antimony, Arsenic, Barium, Cadmium, Hexavalent Chromium, Cobalt, Lead, Lithium, Selenium, Molybdenum, and Thallium

This facility converted its fuel source from coal to natural gas in 2018. Following the conversion, the facility's unlined ash ponds were no longer required, and closure activities were initiated in 2019. Because the ponds are unlined, pollutants historically contributed by coal ash could be present in groundwater. Groundwater is the source water for all processes at this facility and is provided by productions wells, many of which are in the vicinity of the ash ponds. Monitoring is proposed to evaluate the presence of these pollutants, and data collected will be used to determine if any of the pollutants have reasonable potential to exceed (RPE) water quality criteria, where a water quality standard has been established and included in 327 IAC 2-1-6.

Fluoride, sulfate, and total dissolved solids (TDS) were selected for monitoring based on the list of constituents for detection monitoring of CCR contaminants found in 40 CFR 257 Appendix III. Monitoring requirements will be included at 1 X Monthly.

Antimony, arsenic, barium, cadmium, cobalt, lead, lithium, molybdenum, thallium, and selenium were selected for monitoring based on the list of constituents for assessment monitoring of CCR contaminants found in 40 CFR 257 Appendix IV. Monitoring requirements will be included at 1 X Monthly.

Hexavalent Chromium was selected for monitoring based on 329 IAC 10 under the discretion of IDEM OLQ. Monitoring requirements will be included at 1 X Monthly.

Mercury

As part of this permit renewal, a Wasteload Allocation (WLA) report (WLA002652 dated September 16, 2022) was completed and mercury was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that mercury has reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are required and have been included in the permit. The WLA report has been included as Appendix A. The limits will be 12 ng/l Monthly Average and 20 ng/l Daily Maximum.

T. Chromium, Zinc, and 126 priority pollutants

In accordance with 40 CFR 423.13(d)(1), cooling tower blowdown limits are as follows:

Parameter	**Monthly Average**	**Daily Maximum**
Chromium, Total	0.2	0.2
Zinc	1.0	1.0
126 Priority Pollutants(2)	(1)	(1)

(1) No detectable amount.
(2) At the permitting authority's discretion, instead of the monitoring specified in 40 CFR 122.48(b) compliance with the limitations for the 126 priority pollutants may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final cooling tower blowdown discharge by the analytical methods in 40 CFR part 136.

As part of the previous permit renewal, the permittee requested and was granted a waiver from these limits. As part of this permit renewal, the permittee has requested a renewal of the waiver for these pollutants.

In accordance with 40 CFR 122.44(a)(2), a discharger subject to technology-based effluent limitations guidelines and standards in a NPDES permit may be authorized to forego sampling of a pollutant found at 40 CFR Subchapter N if the discharger has demonstrated through sampling and other technical factors that the pollutant is not

present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

IDEM will renew the waiver for the technology based effluent limitations for total chromium and zinc. However, the monitoring requirements for total chromium and zinc will be retained. The facility must reapply for this waiver each permit cycle. This waiver is good only for the term of the permit and is not available during the term of the first permit issued to a discharger.

Any request for waivers must be submitted when applying for a reissued permit or modification of a reissued permit. The request must demonstrate through sampling or other technical information, including information generated during an earlier permit term that the pollutant is not present in the discharge or is present only at background levels from intake water and/or other non-process related water (e.g., stormwater) and without any increase in the pollutant due to activities of the discharger. Any grant of the monitoring waiver must be included in the permit as an express permit condition and the reasons supporting the grant must be documented in the permit's fact sheet or statement of basis. This provision does not supersede certification processes and requirements already established in existing effluent limitations guidelines and standards.
The facility provided documentation from current water treatment additive (WTA) vendors. After reviewing the information provided, IDEM believes that the information provided to date is inaccurate/incomplete as to the presence/absence of the priority pollutants in the additives.

To fulfill all of the requirements of 40 CFR 423.13, the permit will require the permittee to either provide sample data for the discharge from the cooling tower blowdown (prior to commingling with other wastestreams) showing that the 126 priority pollutants are not detectable in the cooling tower blowdown by the analytical methods in 40 CFR part 136; or provide the certified analytical contents of all chemicals used for cooling tower maintenance, as well as engineering calculations demonstrating that any of the priority pollutants present in the maintenance chemicals would not be detectable in the cooling tower discharge.

TSS and O&G

In accordance with 40 CFR 423.12(b)(3), TSS and O&G limits are required for low volume wastewater. This facility has a number of wastestreams that are categorized as low volume wastes as defined in 40 CFR 423.11(b). These low volume wastestreams are routed to the cooling tower basin and reused for cooling water at the facility. Any low volume wastewater is either evaporated or discharged as cooling tower blowdown. However, sampling of the cooling tower blowdown stream before combining with the low volume waste reuse cooling water is not feasible at this facility. There is no upstream sampling location or cooling tower blowdown stream at this site that does not include low volume waste reuse water.

All effluent discharged through Outfall 003 includes cycled up low volume waste as part of the cooling tower blowdown. Per 40 CFR 423.12(b)(13) and 40 CFR 423.13(n), when wastewater streams are combined for discharge and/or treatment, the quantity of each

pollutant or pollutant property controlled attributable to each controlled waste source shall not exceed the specified limitations for that waste source. Because of this, best professional judgement (BPJ) TBELs have been applied to the discharge. The TBELs calculated by BPJ are equivalent to the BPT limits.

However, the TSS and Oil and Grease limits are carried over to this permit due to antibacksliding rule 327 IAC 5-2-10(a)(11). The limits are 29.2 mg/l MA and 97.4 mg/l DM for TSS and 14.6 mg/l MA and 19.5 mg/l DM for Oil and Grease.

In the 2017 permit, reporting requirements were included for iron and copper to determine if there was a reasonable potential to exceed (RPE) a water quality criterion. The data included for this renewal did not show RPE for iron or copper. For this renewal, monitoring requirements have been removed. Metal cleaning wastewater is now collected and disposed of separately, therefore, copper and iron are not expected to be present in the wastewater.

5.3.3 Outfall 103

Nickel, Zinc, Ammonia (as N), Manganese, Phosphorus, and Aluminum

Previously, discharges from this outfall were from the ash pond system, which included water treatment system wastewater, non-chemical metal cleaning wastes (all-inclusive), floor drains treated with oil/water separator wastewater, low-volume wastes, miscellaneous plant drains, dredged material, fire protection deluge systems water, various water storage tank overflows, plant pumps, yard drains, and general plant storm water. The ash pond system no longer receives or treats these wastestreams.

However, due to this historical use, the reporting requirements for Nickel, Zinc, Ammonia (as N), Manganese, Phosphorus, and Aluminum are carried over from the previous permit. Discharge associated with this outfall will only occur during storm events; therefore, monitoring requirements shall be daily for when such discharge occurs.

Boron, Calcium, Fluoride, Sulfate, Total Dissolved Solids (TDS), Antimony, Arsenic, Barium, Beryllium, Cadmium, Hexavalent Chromium, Cobalt, Lead, Lithium, Molybdenum, Selenium, Thallium, and Radium 226 and 228 combined

This facility converted its fuel source from coal to natural gas in 2018. Following the conversion, the facility's unlined ash ponds were no longer required, and closure activities began. Because the ponds are unlined, pollutants historically contributed by coal ash could be present in groundwater. Groundwater is the source water for all processes at this facility and is provided by productions wells, many of which are in the vicinity the ash ponds. Monitoring is proposed to evaluate the presence of these pollutants, and data collected will be used to determine if any of the pollutants have reasonable potential to exceed (RPE) water quality criteria, where available.

Boron, calcium, fluoride, sulfate, and total dissolved solids (TDS) were selected for monitoring based on the list of constituents for detection monitoring of CCR contaminants found in 40 CFR 257 Appendix III. Monitoring requirements will be included at Daily.

Antimony, arsenic, barium, beryllium, cadmium, cobalt, lead, lithium, molybdenum, selenium, thallium, and radium 226 and 228 combined were selected for monitoring based on the list of constituents for assessment monitoring of CCR contaminants found in 40 CFR 257 Appendix IV. Monitoring requirements will be included at Daily.

Hexavalent Chromium was selected for monitoring based on 329 IAC 10 under the discretion of IDEM OLQ.

TSS and O&G

Limitations calculated for TSS and Oil and Grease (24.0 mg/l Monthly Average (MA) and 78.0 mg/l Daily Maximum (DM) and 12.0 mg/l MA and 16.0 mg/l DM, respectively) have been carried over from the previous permit due to the antibacksliding rule 327 IAC 5-2-10(a)(11). Discharge associated with this outfall will only occur during storm events; therefore, monitoring requirements shall be daily for when such discharge occurs.

pH

Discharges to waters of the state are limited to the range of 6.0-9.0 s.u., in accordance with 327 IAC 2-1-6.

In the 2017 permit, reporting requirements were included for iron and copper to determine if there was a reasonable potential to exceed (RPE) a water quality criterion. The data included for this renewal did not show RPE for iron or copper. For this renewal, monitoring requirements have been removed. Metal cleaning wastewater is now collected and disposed of separately, therefore, copper and iron are not expected to be present in the wastewater.

5.4 Whole Effluent Toxicity (WET) Testing

Whole Effluent Toxicity (WET) tests are used for water quality assessment, permit limit development, and compliance assessment. To protect water quality, EPA recommends using WET tests in NPDES permits together with requirements based on chemical-specific water quality criteria. In accordance with 327 IAC 2-1-6(a)(1)(E), all surface waters are required at all times and all places, including the mixing zone, to be free from substances, materials, etc. which are in amounts sufficient to be acutely toxic to or to otherwise severely injure or kill aquatic life, other animals, plants, or humans. Additionally, 327 IAC 2-1-6(2) requires that all waters outside the mixing zone be free of substances in concentrations that on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants. Under 327 IAC 5-2-11.1(h), IDEM is required to determine whether the discharge causes or has the reasonable potential to cause or contribute to a violation of these narrative water quality criteria.

The permittee is required to conduct WET tests to determine the toxicity of the final effluent from Outfall 003 at a minimum frequency of 2 x Annually. This does not negate the requirement to submit a water treatment additive (WTA) application and/or worksheet for replacement or new additives/chemicals proposed for use at the site.

5.5 Antibacksliding

Pursuant to 327 IAC 5-2-10(a)(11), unless an exception applies, a permit may not be renewed, reissued or modified to contain effluent limitations that are less stringent than the comparable effluent limitations in the previous permit. None of the limits included in this permit are less stringent than the comparable effluent limitations in the previous permit, therefore, backsliding is not an issue in accordance with 327 IAC 5-2-10(a)(11).

5.6 Antidegradation

Indiana's Antidegradation Standards and Implementation procedures are outlined in 327 IAC 2-1.3. The antidegradation standards established by 327 IAC 2-1.3-3 apply to all surface waters of the state. The permittee is prohibited from undertaking any deliberate action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality, or an antidegradation demonstration submitted and approved in accordance with 327 IAC 2-1.3-5 and 2-1.3-6.

This permit includes new effluent limitations for mercury. In accordance with 327 IAC 2-1.3-1(b), the new effluent limitations are not subject to the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 as the new effluent limitations are not the result of a deliberate activity taken by the permittee.

As part of the permit modification issued December 17, 2015 for the changeover from a coal-fired generating station to a CCGT operation, the facility provided an antidegradation assessment which showed that there would be an overall reduction in loading of regulated pollutants, including mercury, after the CCGT plant is operational. Therefore, an antidegradation demonstration was not required. The facility also provided estimates of effluent quality from the CCGT plant for regulated pollutants, including mercury, considering well water as a source and cycling in the cooling tower. Permit limitations for mercury were not included in the 2015 permit as a result of these projections. Actual effluent data from the CCGT plant for regulated pollutants were provided as part of this permit renewal and showed the need to establish water quality-based effluent limitations for mercury. The effluent limitations will result in a reduction in mercury loadings from the CCGT plant and ensure that loadings remain below those previously permitted under the coal-fired generating station.

5.7 Stormwater

Under 327 IAC 5-4-6(d), if an individual permit is required under 327 IAC 5-4-6(a) for discharges consisting entirely of stormwater, or if an individual permit is required under 327 IAC 5-2-2 that includes discharge of commingled stormwater associated with industrial activity, IDEM may consider the following in determining the requirements to be contained in the permit:

(1) The nature of the discharges and activities occurring at the site or facility.

(2) Information relevant to the potential impact on water quality.
(3) The requirements found in the following: (A) 327 IAC 5-2, (B) 327 IAC 5-5, (C) 327 IAC 5-9, and (D) 327 IAC 15-6.
(4) "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits", EPA 833-D-96-001, September 1, 1996, available from U.S. EPA, National Service Center for Environmental Publications at https://www.epa.gov/nscep or from IDEM.

In accordance with 327 IAC 15-2-2(a), the commissioner may regulate stormwater discharges associated with industrial activity, as defined in 40 CFR 122.26(b)(14), consistent with the EPA 2008 NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, as modified, effective May 27, 2009, under an NPDES general permit. Therefore, using Best Professional Judgment to develop case-by-case technology-based limits as authorized by 327 IAC 5-2-10, 327 IAC 5-5, and 327 IAC 5-9 (see also 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)), IDEM has developed stormwater requirements for individual permits that are consistent with the EPA 2008 NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity. The 2008 Multi-Sector General Permit and Fact Sheet is available from: https://www.epa.gov/npdes/previous-versions-epas-msgp-documents.

According to 40 CFR 122.26(b)(14) and 327 IAC 15-6-2 facilities classified under Standard Industrial Classification (SIC) Code 4911, are considered to be engaging in “industrial activity” for purposes of 40 CFR 122.26(b). Therefore, the permittee is required to have all stormwater discharges associated with industrial activity permitted. Treatment for stormwater discharges associated with industrial activities is required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to the best practicable technology (BPT) or BAT/BCT for stormwater associated with industrial activity.

Stormwater associated with industrial activity must also be assessed to ensure compliance with all water quality standards. Effective implementation of the non-numeric technology-based requirements should, in most cases, control discharges as necessary to meet applicable water quality standards. Violation of any of these effluent limitations constitutes a violation of the permit.

Additionally, IDEM has determined that with the appropriate implementation of the required control measures and Best Management Practices (BMPs) found in Part I.D. of the permit, the discharge of stormwater associated with industrial activity from this facility will meet applicable water quality standards and will not cause a significant lowering of water quality. Therefore, the stormwater discharge is in compliance with the antidegradation standards found in 327 IAC 2-1.3-3, and pursuant to 327 IAC 2-1.3-4(a)(5), an antidegradation demonstration is not required.

The technology-based effluent limits (TBELs) require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. In addition, the permittee is required to: (1) use good housekeeping practices to keep exposed

areas clean, (2) regularly inspect, test, maintain and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges, (3) minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur, (4) stabilize exposed area and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants, (5) divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the permitted facility discharges, (6) enclose or cover storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, (7) train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team, (8) ensure that waste, garbage and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged, and (9) minimize generation of dust and off-site tracking of raw, final or waste materials.

To meet the non-numeric effluent limitations in Part I.D.4, the permit requires the facility to select control measures (including BMPs) to address the selection and design considerations in Part I.D.3.

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the non-numeric technology-based requirements should ensure compliance with applicable water quality standards. However, if at any time the permittee, or IDEM, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions, and conduct follow-up monitoring and IDEM may impose additional water quality-based limitations.

"Terms and Conditions" to Provide Information in a Stormwater Pollution Prevention Plan (SWPPP)

Distinct from the effluent limitation provisions in the permit, the permit requires the discharger to prepare a SWPPP for the permitted facility. The SWPPP is intended to document the selection, design, installation, and implementation (including inspection, maintenance, monitoring, and corrective action) of control measures being used to comply with the effluent limits set forth in Part I.D. of the permit. In general, the SWPPP must be kept up-to-date, and modified when necessary, to reflect any changes in control measures that were found to be necessary to meet the effluent limitations in the permit.

The requirement to prepare a SWPPP is not an effluent limitation. Rather, it documents what practices the discharger is implementing to meet the effluent limitations in Part I.D. of the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. Instead, the requirement to develop a SWPPP is a permit "term or condition" authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, "[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate." The SWPPP requirements set forth in this permit are terms or conditions

under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it up-to-date is no different than other information collection conditions, as authorized by 327 IAC 5-1-3 (see also CWA section 402(a)(2)).

It should be noted that EPA has developed a guidance document, "Developing your Stormwater Pollution Prevention Plan – A guide for Industrial Operators (EPA 833-B09-002), February 2009, to assist facilities in developing a SWPPP. The guidance contains worksheets, checklists, and model forms that should assist a facility in developing a SWPPP.

Public availability of documents

Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and make it immediately available, at the time of an onsite inspection or upon request, to IDEM. When submitting the SWPPP to IDEM, if any information in the SWPPP is considered to be confidential, that information shall be submitted in accordance with 327 IAC 12.1. Interested persons can request a copy of the SWPPP through IDEM. Any information that is confidential pursuant to Indiana law will not be released to the public.

5.8 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives that could significantly change the nature of or increase the discharge concentration of any of the additives contributing to an outfall governed under the permit, the permittee must apply for and obtain approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) available at: https://www.in.gov/idem/forms/idem-agency-forms/ and submitting any needed supplemental information. In the review and approval process, IDEM determines, based on the information submitted with the application, whether the use of any new or changed water treatment additives/chemicals or dosage rates could potentially cause the discharge from any permitted outfall to cause chronic or acute toxicity in the receiving water.

The authority for this requirement can be found under one or more of the following: 327 IAC 5-2-8(11)(B), which generally requires advance notice of any planned changes in the permitted facility, any activity, or other circumstances that the permittee has reason to believe may result in noncompliance with permit requirements; 327 IAC 5-2-8(11)(F)(ii), which generally requires notice as soon as possible of any planned physical alterations or additions to the permitted facility if the alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged; and 327 IAC 5-2-9(2) which generally requires notice as soon as the discharger knows or has reason to know that the discharger has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application.

The following is a list of water treatment additives currently approved for use at the facility:

WTA	Purpose
GENGARD GN8004	corrosion inhibitor
Depositrol BL5400	deposit control agent
SPECTRUS BD1500	deposit control agent
GENGARD GN8300	corrosion inhibitor
GE Betz Control OS5607	DO scavenger
STEAMMATE NA 1324	steam condensate treatment
Hypersperse MDC714	RO membrane deposit control
KLEEN MCT882	RO membrane cleaner
KLEEN MCT405	RO membrane cleaner
SODIUM HYDROXIDE	pH adjust/dechlorination
SULFURIC ACID	pH adjust
PHOSPHORIC ACID	pH adjust
SODIUM HYPOCHLORITE (Bleach)	chlorination, biological control for cooling tower
SODIUM BISULFITE OR Dearborn DCL30	dechlorination
Sodium Bromide	bromination
CORRSHIELD MD4103	cooling tower
SPECTRUS NX 1100	cooling tower
CITRIC ACID	
GENGARD GN8008	cooling tower
FOAMTROL AF 1440	cooling tower
Andoamine	boiler
Sodium Chloride	softeners
Spectrus NX1106	evaporative reservoirs
Steamate NA 1321	boiler

These WTAs were previously approved for use in the Ash Pond associated with Internal Outfall 103: ROCLEAN P703; ROCLEAN L211; Sodium Metabisulfite; Sodium Chloride; Sulfuric Acid; Sodium Hydroxide; Cyclohexylamine; Di-sodium Phosphate; Tri-sodium Phosphate; Sodium Sulfite; Citric Acid; Muriatic Acid; and Sodium Hypochlorite.

6.0 PERMIT DRAFT DISCUSSION

6.1 Discharge Limitations, Monitoring Conditions and Rationale

The proposed final effluent limitations are based on the more stringent of the Indiana water quality-based effluent limitations (WQBELs), technology-based effluent limitations (TBELs), approved total maximum daily loads (TMDLs) and NPDES regulations as appropriate for each regulated outfall. Section 5.3 of this document explains the rationale for the effluent limitations at each Outfall.

Analytical and sampling methods used shall conform to the version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1) and 327 IAC 5-2-1.5.

Discharge associated with Outfall 103 is not expected to discharge and would only occur during a large storm event or an accumulation of multiple significant storm events over a condensed period of time. Therefore, monitoring requirements shall be daily for when such discharge occurs with the exception of Mercury monitoring.

Outfall 003:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow- Effluent Upstream	 Report Report	 Report Report	 MGD MGD	 Daily Daily	24-Hr. Total Gage
Oil and Grease	14.6	19.5	mg/l	1 X Monthly	Grab
Temperature- Upstream Effluent Mixed River	 Report Report Report	 Report Report Report	 °F °F °F	 Daily Daily Daily	 Gage Continuous Calculated
TRC Continuous Intermittent	 0.02 -----	 0.04 0.2	 mg/l mg/l	 Weekly Weekly	 Grab Grab
TRO Continuous Intermittent	 ----- -----	 0.06 0.2	 mg/l mg/l	 Weekly Weekly	 Grab Grab
Chlorination/ Bromination Frequency	-----	4	times/day	Daily	Report
Chlorination/ Bromination Dose Duration	-------	40	minutes/dose	Daily	Report
Chlorination/ Bromination Dose Duration	-------	120	minutes/day	Daily	Report
Zinc	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Chromium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
TSS	29.2	97.4	mg/l	1 X Weekly	24-Hr. Comp.
Chloride	Report	Report	mg/l	1 X Monthly	24-Hr Comp.
Boron	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Selenium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Fluoride	Report	Report	mg/l	1 X Monthly	24-Hr Comp.
Sulfate	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Dissolved Solids (TDS)	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.

Antimony	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Arsenic	Report	Report	mg/l	1 X Monthly	24-Hr Comp.
Barium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Cadmium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Hexavalent Chromium	Report	Report	mg/l	1 X Monthly	24-Hr Comp.
Cobalt	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lithium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Molybdenum	Report	Report	mg/l	1 X Monthly	24-Hr Comp.
Thallium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Mercury Interim Final	 Report 12	 Report 20	ng/l	6 X Annually	Grab
WETT	Report	Report	$TU_{a/c}$	2 X Annually	24-Hr. Comp

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	1 X Weekly	Grab

Internal Outfall 103

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Daily	24-Hr. Total
TSS	24.0	78.0	mg/l	Daily	Grab
O+G	12.0	16.0	mg/l	Daily	Grab
Chloride	Report	Report	mg/l	Daily	Grab
Arsenic	Report	Report	mg/l	Daily	Grab
Cadmium	Report	Report	mg/l	Daily	Grab
T. Chromium	Report	Report	mg/l	Daily	Grab
Lead	Report	Report	mg/l	Daily	Grab
Mercury	-------	Report	ng/l	6 X Yearly	Grab
Nickel	Report	Report	mg/l	Daily	Grab
Selenium	Report	Report	mg/l	Daily	Grab
Zinc	Report	Report	mg/l	Daily	Grab
Sulfate	Report	Report	mg/l	Daily	Grab
Boron	Report	Report	mg/l	Daily	Grab
Calcium	Report	Report	mg/l	Daily	Grab
Fluoride	Report	Report	mg/l	Daily	Grab
Antimony	Report	Report	mg/l	Daily	Grab
Barium	Report	Report	mg/l	Daily	Grab
Beryllium	Report	Report	mg/l	Daily	Grab
Hexavalent Chromium	Report	Report	mg/l	Daily	Grab
Cobalt	Report	Report	mg/l	Daily	Grab

Lithium	Report	Report	mg/l	Daily	Grab
Molybdenum	Report	Report	mg/l	Daily	Grab
Thallium	Report	Report	mg/l	Daily	Grab
Radium 226 and 228 combined	Report	Report	pCi/L	Daily	Grab
Ammonia, as N	Report	Report	mg/l	Daily	Grab
Manganese	Report	Report	mg/l	Daily	Grab
TDS	Report	Report	mg/l	Daily	Grab
Phosphorus	Report	Report	mg/l	Daily	Grab
Aluminum	Report	Report	mg/l	Daily	Grab

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	Daily	Grab

6.2 Schedule of Compliance

The permit contains new effluent limits for Mercury. In accordance with 327 IAC 5-2-12 (see also 40 CFR 122.47(a)), a schedule of compliance is allowed in an NPDES permit when requested and justified by the permittee, but only when appropriate and when the schedule of compliance requires achievement of compliance “as soon as possible” and meets other specified conditions. Before a schedule of compliance can be included in a permit, the permittee must submit a request for the schedule to IDEM and demonstrate that they meet the requirements for such a schedule pursuant to 327 IAC 5-2-12.

On September 7, 2022, that permittee requested a schedule of compliance for mercury. The permittee has initiated an evaluation to identify the source of mercury observed in the initial RPE samples in order to develop a compliance strategy. The permittee is requesting a 3-year compliance schedule pursuant to 327 IAC 5-2-12(a)(3), to comply with the new WQBEL at Outfall 003. This requested timeframe is to allow the permittee to complete the mercury study, develop a compliance strategy, and implement the strategy measure(s) to ensure compliance with the new limits. The permittee provided a Gantt chart to support a 3-year request.

This request is based on the worst case option of back-end treatment. Once the permittee completes the compliance strategy evaluation, following completion of the mercury evaluation and with its first 9-month progress report, the permittee will submit an updated Gantt chart to provide detail on significant activity milestones.

The permittee will be required to report on interim progress at least every 9 months per 327 IAC 5-2-12(b). In addition, the permittee can request modification of the compliance schedule per 327 IAC 5-2-12(d), if needed, to address allowable changes in the schedule outlined in this permit.

6.3 Polychlorinated Biphenyl (PCB)

There shall be no discharge of polychlorinated biphenyl (PCB) compounds attributable to facility operations such as those historically used in transformer fluids. To determine compliance with the PCB discharge prohibition, the permittee shall provide the following PCB data with the next NPDES permit renewal application for at least one sample taken from each final outfall. The corresponding facility water intakes shall be monitored at the same time as the final outfalls.

Pollutant	Test Method	LOD	LOQ
PCBs*	EPA 608	0.1 ug/L	0.3 ug/L

*PCB 1242, 1254, 1221, 1232, 1248, 1260, 1016

6.4 Spill Response and Reporting Requirement

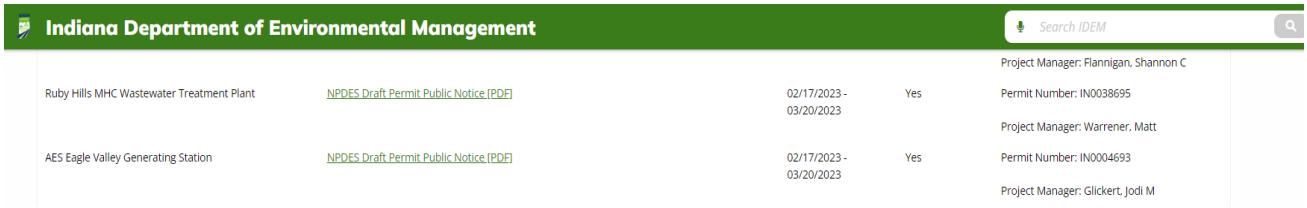
Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.(d), Part II.B.3.(c), and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

6.5 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish the draft permit document online at https://www.in.gov/idem/public-notices/. Additional information on public participation can be found in the "Citizens' Guide to IDEM", available at https://www.in.gov/idem/resources/citizens-guide-to-idem/. A 30-day comment period is available to solicit input from interested parties, including the public. A general notice will also be published in the newspaper with the largest general circulation within Morgan County.

6.6 Post Public Notice Addendum



The draft NPDES permit for AES Indiana – Eagle Valley Generating Station was made available for public comment from February 17, 2023 through March 20, 2023 as part of Public Notice No. 20230217 on IDEM's website at https://www.in.gov/idem/public-notices/public-notices-all-regions/. During this comment period, a comment letter dated March 17, 2023, from David Sacksteder, Sr. Analyst EH & S for AES Indiana – Eagle Valley Generating Station, was received. A comment letter dated March 18, 2023, from the Morgan County Soil & Water Conservation District, was received. A comment letter dated March 20, 2023, from Indra Frank of the Hoosier Environmental Council, was received. The comments submitted, and this Office's corresponding responses are summarized below. Any changes to the permit and/or Fact Sheet are noted below.

Comments from David Sacksteder of AES Indiana – Eagle Valley Generating Station

Comment 1: On the public notice cover sheet, it incorrectly noted the discharge flow as 2.8 million gallons daily; the correct facility flow is 1.3 MGD based on the maximum monthly average as referenced on page 5 of the fact sheet. Also, references to AES should be AES Indiana.

Response 1: IDEM apologizes for the error in the Public Notice Announcement and will correct the information on the Final Notice Announcement. Additionally, all references in the permit and fact sheet to AES have been changed to AES Indiana.

Comment 2: In Part I.A.1 Outfall 003 Discharge Limitations table, AESI requests collection of grab samples for the additional monitoring and reporting parameters – specifically Fluoride, Sulfate, TDS, Antimony, Arsenic, Barium, Cadmium, Cobalt, Lead, Lithium, Molybdenum, and Thallium. Based on the combination of all plant flows in the cooling tower system and relatively long residence time of flow through the cooling tower system, grab sampling is expected to be representative of daily discharge concentrations. The applicable requirements of 327 IAC 5-2-13(c)(2) and (e), and 40 CFR 122.44(i) and 122.48 do not prescribe sample techniques; grab sample techniques for these parameters, where representative of the daily discharge, are permissible.

Response 2: No change in sample collection method has been made at this time. According to 40 CFR 122.21(g)(7)(i), when analysis is required for pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform and Enterococci, or volatile compounds, grab samples must be collected for these pollutants. For all other pollutants, a 24-Hour composite sample, using a minimum of four (4) grab samples, must be used, unless specified in 40 CFR Part 136. 24-Hour composite sampling provides samples more representative of what is being discharged over the course of a day than grab samples. The permittee may request a future modification of the permit with data that demonstrates the variability is low and that grab samples are representative of the discharge for each requested parameter.

Comment 3: In Part I.A.1 Outfall 003 Discharge Limitations table, AESI requests deletion of the footnote [4] reference on Hexavalent Chromium. As specified by footnote [23] Hexavalent Chromium shall be measured and reported as dissolved metal, as opposed to total recoverable specified by footnote [4].

Response 3: The proposed change has been made.

Comment 4: In Part I.A.1 Outfall 003 Discharge Limitations footnotes, AESI requests correction of the table reference in footnotes [8] and [9]. The definition of intermittent chlorination is specified at 327 IAC 2-1-6 Table 6-1, Footnote [6], as opposed to Table 1, Footnote [18].

Response 4: The proposed correction has been made.

Comment 5: In Part I.A.1 Outfall 003 Discharge Limitations footnotes, AESI requests the analytical methods for total residual chlorine and bromine in Footnote No. 18 be revised to include the methods listed in Footnote No.11, i.e., Method 330.1, 4500-CI-D, 4500-CI-E, 4500-CI-G, and EPA Method 330.5.

Response 5: EPA method 330 and 330.1 are not EPA approved methods for total residual chlorine. Method 330 and 330.1 were previously approved EPA methods, but EPA eliminated them as approved methods several years ago. Footnote [11] has been updated to cite Footnote [17] to avoid confusion of approved methods.

Comment 6: In Part I.A.1 Outfall 003 Discharge Limitations footnotes, AESI requests that footnote [21] be modified to include the ending phrase "…water quality based effluent limits where a water quality standard has been established and included at 327 IAC 2-1-6" because reasonable potential to exceed can only be calculated for parameters for which water quality standards have been developed.

Response 6: No changes have been made in response to the above comment. IDEM does calculate reasonable potential to exceed analysis for parameters in which water quality standards have not been developed yet. IDEM has the authority to determine site-specific water quality criterion pursuant to 327 IAC 2-1-6(a)(1)(E). Furthermore, as contained in 40 CFR 122.44(d)(1)(vi), at the permitting authority's discretion, effluent limits can be established using a calculated numeric water quality criterion, on a case-by-case basis, or based on an indicator parameter for a pollutant of concern.

Comment 7: In Part I.A.2 Outfall 103 description, AESI requests that the word contact be added as a descriptor for the stormwater that is authorized for discharge.

Response 7: The proposed change has been made.

Comment 8: In Part I.A.2 Outfall 103 Discharge Limitations table, AESI requests that the sample type for TSS be changed to grab to be consistent with all other parameters.

Response 8: The proposed change has been made. Given that the discharge would be stormwater driven, IDEM acknowledges that the discharge may not occur over a 24-hour period or would be difficult to estimate discharge duration to collect equally spaced grab samples. Therefore, the sample type for TSS has been changed to 'Grab'.

Comment 9: In Part I.F.1.c(2) Whole Effluent Toxicity Testing Requirements, WET tests, Effluent Sample Collection and Chemical Analysis, AESI requests clarification of the "chemical analysis" required to accompany each WET effluent sample. The typical sample collection day for the chemical analysis detailed in Part I.A.1 for Outfall 003 is Tuesday, which does not align with the

3-days of WET sample collection on Monday/Wednesday/Friday. AESI requests this requirement be revised to require “chemical analysis” on an effluent sample collected during the same week as the samples collected for toxicity testing. Additionally, the chemical analysis detailed in Part I.C.4 includes over 20 parameters, many of which did not demonstrate a reasonable potential to exceed water quality standards, and the inclusion of this list of pollutant parameters with every WET effluent sample serves no apparent purpose. AESI requests revision of the permit language to require chemical analysis on only those parameters with a weekly or more frequent monitoring requirement, as provided below and included in the revised permit file.

Chemical analysis must accompany ~~each effluent sample taken for~~ toxicity testing, including ~~each sample taken for the~~ repeat testing as outlined in Part I.F.1.f.(3). The chemical analysis detailed in Part I.A.1, for parameters with a weekly or more frequent monitoring requirement, must be conducted for ~~the~~an effluent sample collected during the same week as the samples collected for toxicity testing in accordance with Part I.C.4. of this permit.

Response 9: No changes have been made in response to the above comment. This language contains the standard requirements included in all NPDES permits containing WET testing.

Comment 10: In Part I.F.1.d Whole Effluent Toxicity Testing Requirements, WET tests, Toxicity Testing Species, Frequency and Duration, AESI requests that the timing for initiating chronic toxicity testing be increased to 180 days from the effective date of the permit. Commencement of WET testing requires significant advance planning and staff training. Given that the WET testing program will be new to this permittee and this permit renewal, AESI requests IDEM allow 180 days (in lieu of 90) for the site to establish test protocols with the contract lab and work through any potential testing challenges included, but not limited to, false positive determinations. The preliminary test results may not be a clear indicator of the actual presence of toxicity. The site should be provided sufficient time to work through potential challenges in preliminary testing before accelerating requirements such as TRE evaluations or permanently adjusting WET testing to a quarterly basis for the duration of the permit cycle.
Response 10: No change is proposed. The 90 days for initiating WET testing is standard for all permittees who are new to WET testing.

Response 10: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing WET testing.

Comment 11: In Part I.F.1.d Whole Effluent Toxicity Testing Requirements, WET Tests, Toxicity Testing Species, Frequency and Duration, AESI requests that the term “initiate” be further defined by adding the parenthetical phrase after the word initiate as follows, “…must initiate (i.e., begin testing in the laboratory)” chronic toxicity testing…”.

Response 11: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing WET testing.

Comment 12: In Part I.F.1.e(6) Whole Effluent Toxicity Testing Requirements, WET Tests, Reporting, AESI requests the column header in the table be changed from “Compliance Limit” to “Compliance Threshold” to avoid the perception of an enforceable compliance limit.

Response 12: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing WET testing.

Comment 13: In Part I.F.1.e(6) Whole Effluent Toxicity Testing Requirements, WET Tests, Reporting, AESI requests the acute toxicity compliance threshold be revised to 2.0 in conformance with IDEM’s rules for downstate dischargers per 327-IAC 5-2-11.1 (Establishment of Water Quality – Based Effluent Limitations for Dischargers Not Discharging to Waters within the Great Lakes System), (b)(1) where the final acute value (FAV=2(AAC)) will be applied directly to the undiluted discharge in the absence of discharge induced mixing. While IDEM promulgated WLA procedures for Great Lakes dischargers at 327 IAC 5-2-11.4, including the WLA of 1.0 TUa for WET, this facility does not discharge into the Great Lakes system and the more appropriate criterion is 2.0 TUa.

Response 13: No changes have been made in response to the above comment. Indiana water quality standards for waters outside the Great Lakes system do not include an acute aquatic criterion (AAC) for whole effluent toxicity (WET) under 327 IAC 2-1-6. To interpret the narrative prohibition of discharging substances in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life under 2-1-6(a)(1)(E) with regards to WET, IDEM uses a numeric interpretation of this narrative equal to 0.3 acute toxic units (TUa) based on U.S. EPA guidance. While EPA has not established national recommended Clean Water Act Section 304(a) water quality criteria for either acute or chronic WET, it did provide recommended values in Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991. In Section 2.3.3 of this guidance, EPA provides a recommended criterion maximum concentration (CMC) (equivalent to AAC in 2-1-6) of 0.3 TUa for acute protection. The factor of 0.3 is used to adjust the LC50 endpoint (50% mortality) used in standard WET tests to an LC1 value (virtually no mortality). If 0.3 TUa were to be applied as the AAC, following the provision in 327 IAC 5-2-11.1(b)(1) would result in 0.6 TUa being applied to the undiluted discharge. A compliance limit based on 0.6 TUa is not technically feasible, so 1.0 TUa is applied to the undiluted discharge. However, if dilution by discharge induced mixing is allowed, 0.3 TUa is applied outside the discharge-induced mixing zone.

Comment 14: In Part I.F.1.f(1) Whole Effluent Toxicity Testing Requirements, WET Tests, Part I.F.1.f(1) Demonstration of Toxicity, per 327-IAC 5-2-11.1 (Establishment of Water Quality – Based Effluent Limitations for Dischargers Not Discharging to Waters within the Great Lakes System), (b)(1) the final acute value (FAV=2(AAC)) will be applied directly to the undiluted discharge in the absence of discharge induced mixing. AESI requests the acute toxicity compliance threshold be revised to 2.0 and corresponding percent effluent concentration be revised to 50% in conformance with IDEM’s rules for downstate dischargers.

Response 14: See response to Comment 13 above. The appropriate compliance limit for acute WET for a discharge that does not utilize discharge-induced mixing is 1.0 TUa with a corresponding test concentration of 100% effluent.

Comment 15: In Part I.F.2.a Whole Effluent Toxicity Testing Requirements, TRE Schedule of Compliance, Development of TRE Plan, AESI requests deletion of the phrase "characterize the causative toxicants and" from the second sentence. As currently worded in the draft permit, the phrase "must include appropriate measures to characterize the causative toxicants" indicates that a TIE would be required. A TIE is a significant cost and effort that may not be required to reduce the toxicity. The language stating that characterization of causative toxicants "must" be included should be removed.

Response 15: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing WET testing.

Comment 16: In Part I.G.1 Schedule of Compliance, AESI requests the addition of the following phrase to paragraphs b and c – "…from the effective date of this permit unless the permittee submitted prior notification that the newly imposed effluent limits for Mercury have been met."

Response 16: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing schedules of compliance. If the permittee is able to meet the newly imposed limits, the reports associated with the schedule of compliance would no longer be applicable.

Comment 17: In Part I.G.1 Schedule of Compliance, AESI requests the deletion of paragraph d. This requirement is redundant with the requirement of Part II.A.14 and should be deleted to avoid the potential for double jeopardy. AESI is aware of its requirement to submit to the OWQ a notice of installation for the additional pollutant control equipment and design summary of any modifications within 30 days of completion of construction, per Permit Part II.A.14. With this deletion, paragraph e should be revised to d.

Response 17: The permittee is correct that all pollutant control equipment installation is subject to Part II.A.14 of the permit. Therefore, IDEM has added the following language to Part I.G.1.d of the permit:

d. ***Pursuant to Part II.A.14 of this permit,*** within thirty (30) days of completion of construction, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

Comment 18: In Part III.A Other Requirement, Polychlorinated Biphenyl, AESI requests modification of the 2nd sentence as follows: "…for at least one sample taken from ~~each final~~ Outfall 003." AES further requests deletion of the last sentence: ~~"The corresponding facility water intakes shall be monitored at the same time as the final outfalls."~~

Response 18: No changes have been made in response to the above comment. These Effluent Limitation Guidelines apply to the facility as a whole.

Comment 19: In Section 2.3 Wastewater Treatment of the Fact Sheet, AESI requests modification of the 3rd sentence to read, "In addition, the discharge canal also serves as part of the facility's overall wastewater treatment system in that it provides thermal dissipation and settling."

Response 19: The proposed change has been made. However, IDEM does not have information supporting the statement that the discharge canal provides treatment regarding settling, particularly since the removal of the low-head dam at the end of the discharge canal. IDEM has deleted the word “settling” from the suggested edits in the comment above.

Comment 20: In Section 2.3 Wastewater Treatment of the Fact Sheet, AESI requests that the word “contact” be added as a descriptor for the “…contact stormwater from Internal Outfall 103.” In the 2nd paragraph.

Response 20: The proposed change has been made.

Comment 21: In Section 5.1 TBEL, Outfall 003 and 103, Regulated wastewater streams and their applicable requirements in the Fact Sheet, AESI requests that this discussion be clarified since “3. Metal Cleaning Wastewater” is not discharged by the facility and the Effluent Guidelines in the table for Metal cleaning wastewater “do not apply”.

Response 21: No changes have been made in response to the above comment. Section 5.1 of the Fact Sheet, “Regulated wastewater streams and their applicable requirements”, identifies the wastestreams generated at the facility for transparency and clarity. There is metal cleaning wastewater generated at this facility. Currently, it is hauled offsite. The table included in this section identifies which wastestreams are ultimately discharged, and therefore require the application of TBELs.

Comment 22: In Section 5.1 TBEL, Outfall 003 and 103, Regulated wastewater streams and their applicable requirements in the Fact Sheet, AESI requests that the table be modified for Coal Pile Runoff to say “The facility never generated coal pile runoff and is no longer coal-fired. Therefore, this ELG does not apply”.

Response 22: IDEM has changed the language to read, “The facility does not generate coal pile runoff and is no longer coal fired. Therefore, this ELG does not apply”.

Comment 23: In Section 5.1 TBEL, Outfall 003 and 103, Regulated wastewater streams and their applicable requirements, AESI requests that the table be modified for FGD wastewater to say “The facility never generated FGD wastewater when it was coal-fired. Therefore, this ELG does not apply”.

Response 23: IDEM has removed FGD wastewater from the table.

Comment 24: In Section 5.3.2 Outfall 003, Boron, AESI requests that the “intake wells” referenced in the 3rd sentence be changed to “production wells”.

Response 24: The proposed change has been made.

Comment 25: In Section 5.3.2 Outfall 003, Fluoride … and Thallium, AESI requests that the 3rd paragraph be modified to correct the basis for inclusion of hexavalent chromium as follows – “Antimony, arsenic, barium, cadmium, ~~hexavalent chromium~~, cobalt, lead … were selected for monitoring based on the list of constituents for assessment monitoring of CCR contaminants

found in 40 CFR 257 Appendix IV. Monitoring requirements will be included at 1 X Monthly. Hexavalent chromium was selected for monitoring based on 329 IAC 10 under the discretion of IDEM OLQ".

Response 25: The proposed change has been made.

Comment 26: In Section 5.3.3 Outfall 103, Boron … and Radium 226 and 228 combined, AESI requests that the 3rd paragraph be modified to correct the basis for inclusion of hexavalent chromium as follows – "Antimony, arsenic, barium, cadmium, ~~hexavalent chromium~~, cobalt, lead … were selected for monitoring based on the list of constituents for assessment monitoring of CCR contaminants found in 40 CFR 257 Appendix IV. Monitoring requirements will be included at Daily. Hexavalent chromium was selected for monitoring based on 329 IAC 10 under the discretion of IDEM OLQ.

Response 26: The proposed change has been made.

Comment 27: In Section 6.1 Outfall 003 Discharge Limitations table, AESI request collection of grab samples for the additional monitoring and reporting parameters – specifically, hexavalent chromium, for which grab sampling techniques are required, and Fluoride, Sulfate, TDS, Antimony, Arsenic, Barium, Cadmium, Cobalt, Lead, Lithium, Molybdenum, and Thallium. Based on the combination of all plant flows in the cooling tower system and relatively long residence time of flow through the cooling tower system, grab sampling is expected to be representative of daily discharge concentrations. The applicable requirements of 327 IAC 5-2-13(c)(2) and (e), and 40 CFR 122.44(i) and 122.48 do not prescribe sample techniques; grab sample techniques for these parameters, where representative of the daily discharge, are permissible.

Response 27: No changes have been made in response to the above comment. Please refer to Response 2 above.

Comment 28: In 6.1 Outfall 103 Discharge Limitations table, AESI requests that the sample type for TSS be changed to grab to be consistent with all other parameters.

Response 28: The proposed change has been made. Please refer to Response 8.

<u>Comments from the Morgan County Soil & Water Conservation District</u>

Comment 1: In the draft permit page 5, footnote [12], the second sentence in the first paragraph indicates that in lieu of monitoring for the 126 priority pollutants, compliance with the limitations may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectible in the final cooling tower blowdown discharge, and the second paragraph states that the permittee submitted documentation indicating that the current list of WTA chemicals does not include the 126 priority pollutants. While it is good to have the documentation that the priority pollutants were not in the WTA chemicals, the permittee never submitted engineering calculations demonstrating that the regulated pollutants would not be detectible in the final cooling water discharge. In fact, they submitted calculations indicating that the pollutants would be in the production water, they would be concentrated by the plant processes and be detectible in the cooling water discharged. Based on the information IDEM

had, there was no basis for granting the monitoring waiver for the priority pollutants when the discharge permit was first issued.

In the draft permit page 6, footnote [12], it states that in accordance with the requirements in 40 CFR 122.44(a)(2), the permittee is required to submit a request for a monitoring waiver with the next permit renewal, and must demonstrate through sampling or other technical information, which may include information generated during the earlier permit term that the pollutant is not present in the discharge or is only present at background levels from the intake water (in this case the groundwater) and without any increase in the pollutant due to the activities of the discharger. Given that there is sampling data during the earlier permit term that demonstrates some of the priority pollutants are present in the discharge, and that their concentrations are being increased by the activities of the discharger, absent any data in the permittee's current request for the renewal of the waiver demonstrating otherwise, there is no basis for renewing the monitoring waiver.

Response 1: The provision of 40 CFR 423.13(d) for no detectable amount of the 126 priority pollutants is applicable only to the chemicals used for cooling tower maintenance. U.S. EPA's *Development Document for Final Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for The Steam Electric Point Source Category* (November 1982), makes clear that this ELG requirement is only applicable to the use of chemicals used for cooling tower maintenance. The document also provides data on priority pollutants found in other wastestreams associated with steam electric facilities, such as ash handling and low volume waste, but did not include similar requirements. Furthermore, in response to comments regarding this requirement at the time, EPA provided the following responses:

> *Commenters objected to the proposed zero discharge requirement for maintenance chemicals, raising concerns about the regulation of maintenance chemicals instead of priority pollutants and the means of measuring compliance with a zero discharge limit. In response, the Agency Substituted "no detectable" for "zero discharge" and made clear that the limit applies to priority pollutants from maintenance chemicals, and not the chemicals themselves. EPA presently considers the nominal detection limit for most of the toxics to be 10 ug/l (i. e., 10 parts per billion). See, Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority pollutants, EPA, 1977.*
>
> *Another concern expressed by commenters was that EPA did not account for those prohibited toxics that are present in new construction materials for cooling towers. For example, wooden supporting structures or other construction materials in new or rebuilt cooling towers may contain preservatives which contain trace amounts of certain of the toxic pollutants. These may leach for a period of time from contact with the cooling water. The Agency recognizes such situations. Thus, the prohibition in the final rule, as in the proposed rule, is applicable only to pollutants that are present in cooling tower blowdown as a result of cooling tower maintenance chemicals.*

In addition, the development document identifies the requirement as:

> *The discharge of one hundred twenty-four toxic pollutants is prohibited in detectable amounts from cooling tower discharges if the pollutants come from cooling tower*

maintenance chemicals. The discharger may demonstrate compliance with such limitations to the permitting authority by either routinely providing sampling and mass analyzing for the pollutants in the discharge, or balance calculations to demonstrate that use of particular maintenance chemicals will not result in detectable amounts of the toxic pollutants in the discharge.

While the facility provided documentation from current water treatment additive (WTA) vendors stating that none of the 126 priority pollutants were known to be present, IDEM agrees that additional information is needed in regard to the presence/absence of the priority pollutants in the additives.

To fulfill all of the requirements of 40 CFR 423.13, the permit will require the permittee to either provide sample data for the discharge from the cooling tower blowdown (prior to commingling with other wastestreams) showing that the 126 priority pollutants are not detectable in the cooling tower blowdown by the analytical methods in 40 CFR part 136; or provide the certified analytical contents of all chemicals used for cooling tower maintenance, as well as engineering calculations demonstrating that any of the priority pollutants present in the maintenance chemicals would not be detectable in the cooling tower discharge.

The footnote [12] to Part I.A.1 of the permit has been modified to add:

> Within 6 months of the effective date of the permit, the permittee shall either provide sample data for the discharge from the cooling tower blowdown (prior to commingling with other wastestreams) showing that the 126 priority pollutants are not detectable in the cooling tower blowdown by the analytical methods in 40 CFR Part 136; or provide the certified analytical contents of all chemicals used for cooling tower maintenance and engineering calculations demonstrating that any of the priority pollutants present in the maintenance chemicals would not be detectable in the cooling tower discharge. Total Chromium and Zinc are excluded from this requirement. ND=non-detect

IDEM will review that information and determine if the permit requires modification under the reopening provisions in Part I.H.2 of the permit.

Comment 2: From our review of the draft permit, it is evident that AES Indiana is now directing their water treatment waste streams back into the cooling water system. (See the Figure 2: Water Balance Diagram – IDEM Fact Sheet Page 6). IDEM fact sheet states that sampling of the cooling water blowdown before it is combined with the low volume waste reuse cooling water is not feasible and cited the presence of the upcycled low volume wastes in the cooling water blowdown as justification for continuing the application of the Best Professional Judgement (BPJ) Technology Based Effluent Limits (TBELs) to the plant discharge. (IDEM Fact Sheet Page 10 Footnote ****) IDEM's Fact Sheet also states that 40 CFR 423.13(d) prohibits the discharge of cooling water containing the 126 priority pollutants in detectible amounts (IDEM Fact Sheet Page 10 Footnote ***). The SWCD contends that with the redirection of the water treatment waste streams back into the cooling water makeup, the only flows being discharged from the power plant through Outfall 003 are discharges from the cooling operation which should be required to comply with 40 CFR 423.13(d) regardless of whether they contain the

upcycled low volume wastes. The SWCD therefore objects to the application of the BPJ TBEL's to the plant discharge.

Response 2: Please refer to Response 1 above regarding the ELG for the 126 priority pollutants. Additionally, the application of low volume waste ELGs is impractical given the lack of sampling location and that the samples collected prior to use in the cooling tower would not be representative of the discharge quality at the regulated outfall. The application of BPJ TBEL's is justified in this situation and includes the most stringent limits available.

Comment 3: If AES Indiana is required to comply with 40 CFR 423.13(d) and remove the 126 priority pollutants from the plant discharge, the SWCD request the time period for the submission of their written progress report detailing how they plan to comply with the regulation in the Schedule of Compliance be limited to six (6) months, and the time period for compliance with the regulation in the Schedule of Compliance to be limited to not more than twenty-four (24) months.

Response 3: Please refer to Response 1 above regarding the ELG for the 126 priority pollutants.

Comment 4: The draft permit requires AES Indiana submit a plan to comply with the mercury discharge limits in 90 days and gives them a 3-year period to implement the plan. (Draft Permit Page 47, Subpart G). The SWCD contends that with the testing of the plant production water and the waste discharges from the zeolite softening and reverse osmosis water treatment systems for mercury, AES Indiana should be able to quickly identify the source of the mercury. If the source of the mercury is one of the water treatment chemicals, AES should be able to switch to another water treatment chemical and achieve compliance with the mercury discharge limit in a matter of months. If the testing confirms the source of the mercury is the groundwater being used in the power plant for cooling and production water, AES Indiana should be able to identify and install the additional water treatment needed to achieve compliance with the mercury discharge in less than three years. The SWCD requests the time period for the submission of the written progress report detailing how they plan to comply with the mercury limit in the schedule of compliance be reduced to six (6) months and the time period for compliance with the mercury limit in the Schedule of Compliance be reduced to twenty-four (24) months.

Response 4: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing schedules of compliance. The schedule of compliance has been granted in accordance with 327 IAC 5-2-12 (see also 40 CFR 122.47(a)) which must require compliance by the permittee "as soon as reasonably possible, but not later than… three (3) years from the date applicable standards, limitations, or other requirements are incorporated into the permit.". Therefore, as soon as the permittee comes into compliance with the mercury limit, they will have to abide by the limit.

Comment 5: The SWCD asks again for at least quarterly testing of the plant production well water for the CCR contaminants so that the results can be used to determine if the concentration of the contaminants are diminishing over time as we hope they will once the ash ponds are properly closed.

The SWCD considers the plant production wells as integral to the ash pond closure plan and urges IDEM to require operational and treatment changes to minimize to the extent feasible the discharge of CCR contaminants through the permitted NPDES outfall. Achieving compliance with the ash pond closure and post-closure federal regulations is not possible as long as AES Indiana is continuing to discharge CCR contaminants from the site to the White River.

Response 5: No changes have been made in response to the above comment. Testing the production wells for regulatory compliance purposes is outside the scope of the NPDES permitting program. NPDES permits establish discharge limitations for the discharge of pollutants from point sources into waters of the United States. Monitoring requirements and effluent limitations in NPDES permits are established in several ways, including consideration for the intake pollutant contributions. This NPDES permit contains monitoring and effluent limitations for the CCR contaminants that have been identified in quantities that could potentially be of issue as a discharge to a waters of the United States.

Comment 6: The SWCD asks again for testing of the plant process flows to identify where the contaminants are being concentrated and asks again for operational changes and treatment of plant process flows to the extent possible to reduce the CCR contaminants in future discharges.

Response 6: No changes have been made in response to the above comment. Please refer to Response 5 above.

<u>Comments from Indra Frank of the Hoosier Environmental Council</u>

Comment 1: HEC appreciates and supports IDEM's inclusion of a complete list of coal ash contaminants in Table 1 of the draft permit (page 2, pdf page 5). It makes sense to monitor for these known coal ash contaminants in the discharge from the Eagle Valley Generating Station since the discharge originates from the coal-ash contaminated groundwater at the site.

How these constituents are monitored is also important. If a detection limit is set too high, the constituent may be present but below the limit of detection thereby creating a false assurance that a contaminant is not present. That appears to be the case with the detection limit set for hexavalent chromium. Table 1 refers the reader to footnote 18 for limits of detection (LOD) and limits of quantitation (LOQ). For hexavalent chromium, EPA test method 218.6 is cited, which has an LOD of 5 ug/l and an LOQ of 15.9 ug/l. This is not appropriate or protective in our view.

Hexavalent chromium is highly toxic and carcinogenic even at exceedingly low concentrations. Indiana's 2023 screening level for hexavalent chromium in groundwater used for residential tap water is 0.4 ug/l, which is less than one tenth of the limit of detection listed in the draft permit. Thus, while we appreciate and support IDEM's inclusion of hexavalent chromium for monitoring in Table 1, we respectfully request a revision to require a more sensitive method with a lower limit of detection for protection of human health and the environment.

Response 1: The proposed change has been made. IDEM revised and updated Part I.A.1 footnote [17] and Part I.A.2 footnote [7] to update the LOD and LOQ to a more sensitive detection limit.

Comment 2: The discharge from the Eagle Valley Generating Station enters a river segment that is impaired for iron. The IDEM factsheet (page 8, or pdf page 75 in the Public Notice) noted that, “The assessment unit for the West Fork of the White River is INW01F3_01 at the outfall and INW01F3_04 downstream…the USEPA listed unit INW01F3_04 as impaired for iron.”

Iron is common in coal ash leachate. Yet, the draft permit does not require either monitoring or a discharge limit for iron.

This is especially concerning given that there are groundwater monitoring samples at Eagle Valley that have shown high iron levels. For instance, groundwater monitoring for iron was reported in the Eagle Valley coal ash closure plan submitted to IDEM in 2016, revealing several of the groundwater monitoring wells with iron exceeding 1,000 ug/l. The highest result listed in the Closure Plan was 2,360 ug/l.

Given these facts – i.e., that the receiving waterway is impaired for iron, groundwater samples at Eagle Valley have confirmed high iron concentrations, and that contaminated groundwater is allowed to be discharged via the permitted outfall – the failure to impose monitoring requirements for iron at the outfall violates the Clean Water Act.

Response 2: No changes have been made in response to the above comment. Please refer to WLA002652 dated September 16, 2022, included as Appendix A of this Fact Sheet. IDEM conducted a reasonable potential analysis for the discharge of iron, among other parameters. The receiving waterway being impaired for iron was taken into consideration and the analysis showed that there was no reasonable potential to exceed a water quality criterion for iron. Therefore, monitoring requirements are not required in this permit.

Comment 3: Six years of groundwater monitoring data at Eagle Valley are already available to provide the concentration of parameters in the source water, including: antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, fluoride, lead, lithium, molybdenum, selenium, sulfate, thallium, and radium. Data are also available on the degree of concentration as the water passes from the wells to the Outfall (see Table 1 below). These data take together provide an opportunity to estimate the concentrations of parameters in the discharge from Outfall 003. There are also data on concentrations in the discharge from sampling AES has done. HEC requests that IDEM use the available data to calculate reasonable potentials to exceed (RPE) for the list of parameters in this paragraph rather than wait an additional 5 years for the next permit renewal.

Response 3: No changes have been made in response to the above comment. The WQBELs were derived in WLA0002652 as provided as Appendix A of this Fact Sheet. The limitations were calculated based on actual discharge data collected during normal operations, which would have contained the representative concentrations of these pollutants to the receiving stream.

Comment 4: The discharge from the Eagle Valley Generating Station includes cooling tower blowdown which is subject to 40 CFR 423.13(d). Appendix A to 40 CFR 423 includes metals commonly found in leachate from coal combustion residuals.

AES has requested a renewal of its previously granted waiver for the 126 Appendix A Priority Pollutants in cooling tower blowdown. See IDEM Fact Sheet at pdf page 80. IDEM should not renew the waiver because AES cannot demonstrate that Priority Pollutants are not present or are "present only at background levels from intake water and without any increase in the pollutant due to activities from the discharger." 40 CFR 122.44(a)(2)

Here, the water in the cooling tower blowdown at Eagle Valley originates from well water obtained on site. As stated in the Eagle Valley Corrective Measures Assessment, "Plant process water, including cooling water for the new natural gas-fired plant, is sourced from three high yield groundwater production wells, screened in the alluvial aquifer." Those wells are located just to the south and west of the generating station and lie between the generating station and the coal ash impoundments. In fact, one of the production wells is located less than 300 feet from the nearest impoundment.

These production wells are withdrawing coal-ash contaminated groundwater from beneath the CCR impoundments. AES acknowledges this in its Corrective Measures Assessment:

> "Arsenic, lithium, and molybdenum detected at the boundary of the unit [Ash Pond System] at concentrations above the GWPS [Groundwater Protection Standards] would be addressed with hydraulic containment (HC) through groundwater pumping of the existing production wells associated with the Eagle Valley Combined Cycle Gas Turbine Natural Gas Plant to hydraulically control the migration of those constituents downgradient."

The groundwater under and around the CCR impoundments at Eagle Valley has documented contamination with boron, arsenic, lithium, and molybdenum at levels that exceed the applicable Groundwater Protection Standards (GWPS) under the federal CCR Rule (40 CFR 257 subpart D). Mercury has been below the limit of detection in the annual CCR groundwater reports, but the limit of detection in the most recent report was 0.2 ug/l or 200 ng/l, which is much too high to be relevant. Mercury has been documented in the Eagle Valley effluent at concentrations exceeding Indiana's Water Quality Criterion of 12 ng/l. Also, Mercury is likely to be present in this groundwater based on its known tendency for leaching from CCR.

Water drawn up by the production wells was sampled in the summer of 2020 documenting that it contains elevated levels of CCR contaminants. In samples dated May and June of 2020, there were elevated levels of lithium, arsenic, boron, and molybdenum similar to levels reported in the Eagle Valley groundwater monitoring wells.

Sampling from Eagle Valley Outfall 003 to the White River demonstrates that the CCR contaminants in the production well water are being concentrated several fold as they pass through processes in the generating station. For example, the concentration of boron in the three production wells' samples averaged 769, 167, and 2184 ug/l while during the same period the concentration in the discharge at Outfall 003 averaged 5579 ug/l.

The fact that the contaminants are concentrated as the water passes through the generating station is not unexpected. The Process Flow Diagram shows the water from the on-site wells (the production wells) going through evaporative coolers, the boiler, and the cooling tower.

Those are all locations with significant evaporative losses. Since water is lost to evaporation, the concentrations of constituents in that water are increasing.

We also know that the groundwater being used for cooling water contains arsenic and mercury, which means the cooling water likewise contains these contaminants from the list of Priority Pollutants in 40 CFR 423.13. Not only are the pollutants present in the intake water, but their concentrations are being increased by activities of AES as documented above.

Also concerning, there is an additive to the cooling water that is introducing additional Priority Pollutants from 40 CFR 423 Appendix A. The diagram labeled “Process Flow Diagram Water Balance Sheet 1” and included I the draft permit as “Figure 2: Water Balance Diagram” shows the additions to the cooling tower. One of those additions comes from the “Waste Water Collection Sump”.

The Waste Water Collection Sump receives wastewater from the oil separator and the “water treatment building sump,” which consists of wastes from filter backwash, the zeolite softener, and the reverse osmosis reject. Since the water passing through the filters, zeolite softener, and reverse osmosis originates in the on-site production wells, it also has arsenic and mercury. Those contaminants are concentrated by those processes, and they are particularly concentrated in the reverse osmosis reject. Therefore, the addition of the wastewater from the Waste Water Collection Sump to the cooling tower is adding Priority Pollutants from 40 CFR 423.13(d)(1) Appendix A into the cooling tower blowdown.

For all these reasons, IDEM should deny AES’ request for a renewed waiver from the requirements of 40 CFR 423.13(d)(1) given the documented presence and increased concentration of Priority Pollutants in the cooling tower blowdown.

Response 4: See response to Comment 1 of the Morgan County Soil & Water Conservation District’s comment section.

Comment 5: The draft permit adds new discharge limits for mercury in Table 1. HEC supports the addition of this new limit. It is justified by the documented presence of mercury in the effluent from Eagle Valley in concentrations exceeding Indiana’s Water Quality Criterion of 12 ng/l and by the fact that the discharge enters a river segment which is impaired for mercury. We also support the requirement to use EPA Method 1631E to monitor for mercury, since it has an adequately sensitive limit of detection at 0.2 ng/l.

However, the draft permit allows too much time for AES to come into compliance with the mercury effluent limit. It states, “The permittee has a 3-year schedule of compliance as outlined in Part I.G in which to meet the final effluent limitations for Mercury”. The schedule of compliance in Part I.G. states, “The new effluent limits for Mercury are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date.” There does not appear to be any incentive in the permit for AES to find a way to meet the limit at an earlier date, so the draft permit would allow three additional years of excess mercury in the discharge from Eagle Valley.

The excess mercury discharge to the White River has already gone on for several years, ever since the production wells went into operation in 2018. With the exception of a period when the

power plant was not operating, the wells have been sending the mercury-laced groundwater into the White River. HEC requests that IDEM require faster compliance to stop the mercury discharge sooner.

Response 5: No changes have been made in response to the above comment. This is standard language included in all NPDES permits containing SOCs. The schedule of compliance has been granted in accordance with 327 IAC 5-2-12 (see also 40 CFR 122.47(a))which must require compliance by the permittee "as soon as reasonably possible, but not later than… three (3) years from the date applicable standards, limitations, or other requirements are incorporated into the permit.". Therefore, as soon as the permittee comes into compliance with the mercury limit, they will have to abide by the limit.

Comment 6: There are already water purification processes in the Eagle Valley Generating Station that may be helpful for reducing the discharge of heavy metals. According to the Water Balance diagram, the on-site well water is processed through filters, a water softener, and reverse osmosis. It is possible the mercury and other contaminants in the water are being removed by one of more of these processes. Testing the water before and after each of these internal processes could identify a process that captures contaminants.

Currently the waste from those purification steps is being sent to the cooling tower and from there the waste is discharged to the White River through Outfall 003. Proper disposal of the waste water, instead of sending it to the cooling tower, could remove mercury and other contaminants from the Eagle Valley discharge.

Response 6: No changes have been made in response to the above comment. The facility has requested the discharge of these wastestreams as recycled water used for cooling purposes. The discharge of pollutants is authorized in accordance with the terms and conditions of the permit, including the effluent limitations established within. The WQBELs were derived in WLA0002652 as provided as Appendix A of this Fact Sheet. IDEM does not believe requiring the alternate disposal methods are warranted while the terms and conditions of permit are met.

Comment 7: The draft NPDES permit states that "issuance of this permit…does not authorize…any infringement of federal, state, or local laws or regulations." See draft NPDES permit at pdf 54. Yet, as written, that is precisely what the draft NPDES permit does.

The federal CCR Rule requires selection of a remedy once groundwater contamination has been identified. AES monitored groundwater at Eagle Valley, according to the CCR Rule requirements, and found coal ash constituents has been released into the groundwater at concentrations exceeding standards. That finding was first documented on January 14, 2019, when AES placed the following notice in its operating record:

> Ponds A, B, and C [40 CFR 257.95(g)]
> Pursuant to 40 CFR 257.95(g), on January 14, 2019, the following Appendix IV constituents were detected at levels above the applicable groundwater protection standards during assessment monitoring at the above-referenced CCR units:
>
> - Arsenic
> - Lithium
> - Molybdenum

Each of AES' Groundwater Monitoring and Corrective Action Reports since then have continued to note the groundwater exceedances. The most recent report states:

> "At the end of the 2022 reporting period, it was determined that the following Appendix IV constituents were at statistically significant levels (SSL) above the associated groundwater protections standards (GWPS) pursuant to 257.95(g)1. The SSLs are as follows:
>
> Arsenic
>
> Shallow: MW-2S, MW-11S
>
> Lithium
>
> Shallow: MW-1S, MW-2S, MW-6S, MW-10S, MW-11S, MW-12S
> Intermediate: MW-1I, MW-2I, MW-6I, MW-11I
> Deep: MW-1D, MW-2D, MW-6D, MW-11D
>
> Molybdenum
>
> Intermediate: MW-6I, MW-11I
> Deep: MW-1D, MW-6D, MW-11D"

After documenting the releases to groundwater, AES initiated an assessment of corrective measures, as required by the federal CCR Rule. Two of the three alternatives explored in the Corrective Measures Assessment would rely on controlling the contaminant plume in the groundwater by extracting it via the three production wells, the same wells that send water into the generating station for process and cooling water. The Assessment refers to this as "hydraulic containment" and describes it in Alternative 1 this way:

> Arsenic, lithium, and molybdenum detected at the boundary of the unit [ash pond system] at concentrations above the GWPS [Groundwater Protection Standards] would be addressed with hydraulic containment (HC) through groundwater pumping of the existing production wells associated with the Eagle Valley Combined Cycle Gas Turbine Natural Gas Plant to hydraulically control the migration of those constituents downgradient. Production well effluent would be treated ex-situ, likely with an ion exchange or a reverse osmosis (RO) treatment system. The treatment system would have an ongoing operation and maintenance and would generate a secondary waste stream – including but not limited to the regeneration/replacement of the ion exchange media or accumulation of reject water from the RO system. Verification that the effluent could be discharged under the current NPDES permit or application for and approval of a NPDES permit modification may be required.

The second alternative, "Alternative 2", contemplated by the Corrective Measures Assessment also includes "hydraulic containment" but without the ex-situ treatment of the water. It would control the plume of coal ash constituents in the groundwater by withdrawing the groundwater via the production wells, using it in the generating station, and discharging it to the White River without treatment. Instead of "pump and treat," which could be a short-hand for Alternative 1, Alternative 2 could be called, "pump and dump." The draft NPDES permit supports Alternative 2, and, in fact, enables AES to choose Alternative 2.

Alternative 2 violates the CCR Rule's requirements for corrective measures, which mandate that once coal ash constituents are found in the groundwater above the Groundwater Protection

Standards, then “the owner or operator must initiate an assessment of corrective measures to prevent further releases.” 40 CFR 257.96(a). Despite the plainly stated objective of this provision, - i.e., “to prevent further releases” of the coal ash constituents – the draft NPDES permit allows AES to increase releases. Under the permit, AES is allowed to discharge coal ash constituents to the White River thereby allowing a release of those constituents in violation of the CCR Rule.

Alternative 2 in the Eagle Valley Corrective Measures Assessment would also violate the federal CCR Rule when it comes to selection of a groundwater remedy. In 40 CFR 257.97(b)(3), the Rule states that the selected remedy must:

> “Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment,”

By enabling Alternative 2, the draft NPDES permit if approved would violate this provision by allowing the release of coal ash constituents into the White River, which is without doubt a release “into the environment”. Thus, by allowing water from the production wells at Eagle Valley to be released untreated (or with treatment wastes added back to the discharge) into the White River, the draft NPDES permit would enable AES to select Alternative 2 in its Corrective Measures Assessment and that Alternative plainly violates the CCR Rule.

Response 7: No changes have been made in response to the above comment. IDEM does not believe that the NPDES permit authorizes any corrective action measure regarding the CCR rule. Furthermore, IDEM believes that this language is indicative of that, whereas other program areas may make the determination on what actions meet the program rules and regulations. This NPDES permit uses the rules and procedures as outlined in 327 IAC 5-2 and 40 CFR 125 to establish the terms and conditions of permit.

Additional Changes

In addition to the changes noted above in response to comments, IDEM also deleted Part I.A.1 footnote 13 and Part I.A.2 footnote 8, which excluded weekend and holiday monitoring of the effluent. IDEM does not believe this exception is appropriate to ensure adequate compliance monitoring at all times, under various conditions. For example, the permittee is required to collect representative samples that are taken at times which reflect the full range and concentration of effluent parameters normally expected to be present. IDEM believes it reasonable to expect that an occasion may arise in which a discharge occurs on a weekend or holiday that may require representative sampling and reporting. Therefore, this permit no longer includes that provision.

Appendix A

WLA0002652

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: September 16, 2022

To: Jodi Glickert
Industrial NPDES Permits Section

From: John Elliott JE
Permits Branch

Subject: Wasteload Allocation Report for AES Eagle Valley Generating Station in Morgan County (IN0004693, WLA002652)

A reasonable potential to exceed analysis was done for the renewal of the NPDES permit for AES Eagle Valley Generating Station. In addition, water quality-based effluent limitations (WQBELs) for bromine and for pollutants with applicable technology-based effluent limitations (TBELs) were calculated. The analyses were done for the existing discharge through Outfall 003 to West Fork White River. The discharge is covered under the rules for the non-Great Lakes system. The effluent flow used in the analyses was 1.3 mgd.

West Fork White River is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The assessment unit for West Fork White River is INW01F3_01 at the outfall and INW01F3_04 downstream. Assessment unit INW01F3_01 is on the 2022 303(d) list for mercury in the water column and Assessment Unit INW01F3_04 is on the list for iron. Both assessment units are on the 2022 303(d) list for PCBs in fish tissue. A TMDL for Middle West Fork of White River for *E. coli* was approved by U.S. EPA July 21, 2005 and includes both assessment units. The Q7,10 of West Fork White River is 274 cfs.

The calculation of the monthly average and daily maximum projected effluent quality (PEQ) for the pollutants of concern is included in Table 1. The results of the reasonable potential statistical procedure are included in Table 2. The results show that there is a reasonable potential to exceed a water quality criterion for mercury. Therefore, WQBELs are required for mercury.

The facility is covered under the federal effluent limitation guideline (ELG) for Steam Electric Power Generating. The ELG includes specific limitations for total chromium and zinc for cooling tower blowdown. WQBELs for these pollutants of concern were calculated for direct comparison to the ELGs. In addition, WQBELs were calculated for bromine which may be used as a water treatment additive. Water quality-based effluent limitations for these pollutants and for mercury which showed a reasonable potential to exceed a water quality criterion are included in Table 3. The documentation of the wasteload allocation analysis is included as an attachment.

TABLE 1
Calculation of Projected Effluent Quality
For AES Eagle Valley Generating Station in Morgan County
Outfall 003 to West Fork White River
(IN0004693, WLA002652)

Parameter	Monthly Average PEQ					Daily Maximum PEQ				
	Maximum Monthly Average (mg/l)	Number of Monthly Averages	CV	Multiplying Factor	Monthly Average PEQ (mg/l)	Maximum Daily Sample (mg/l)	Number of Daily Samples	CV	Multiplying Factor	Daily Maximum PEQ (mg/l)
Antimony					0.0027	0.0009	3	0.6	3.0	0.0027
Arsenic					0.003	0.001	3	0.6	3.0	0.003
Barium					0.40	0.361	11	0.1	1.1	0.40
Beryllium					0.000099	0.000033	3	0.6	3.0	0.000099
Cadmium					0.00021	0.00019	11	0.1	1.1	0.00021
Chromium (VI)					0.0010	0.000439	5	0.6	2.3	0.0010
Total Chromium					0.011	0.010	47	0.5	1.1	0.011
Cobalt					0.0015	0.0014	11	0.1	1.1	0.0015
Copper	0.010	36	0.0	1.0	0.010	0.010	73	0.1	1.0	0.010
Iron	0.27	36	0.3	1.1	0.30	0.40	73	0.4	1.0	0.40
Lead					0.00032	0.00014	5	0.6	2.3	0.00032
Lithium					0.27	0.248	10	0.1	1.1	0.27
Manganese					0.065	0.0284	5	0.6	2.3	0.065
Mercury					0.00024	0.0000801	3	0.6	3.0	0.00024
Molybdenum					0.54	0.493	11	0.1	1.1	0.54
Nickel					0.037	0.016	5	0.6	2.3	0.037
Selenium (lotic)					0.0049	0.0041	11	0.2	1.2	0.0049
Silver					0.00014	0.00006	5	0.6	2.3	0.00014
Thallium					0.00022	0.000073	3	0.6	3.0	0.00022
Vanadium					0.0017	0.00074	5	0.6	2.3	0.0017
Zinc					0.030	0.030	37	0.1	1.0	0.030
Boron					7.0	6.36	11	0.1	1.1	7.0
Chloride	621	36	0.3	1.1	680	662	73	0.4	1.0	660
Cyanide, Free					0.017	0.0074	5	0.6	2.3	0.017
Fluoride					0.00098	0.00089	11	0.1	1.1	0.00098

TABLE 2
Results of Reasonable Potential Statistical Procedure
For AES Eagle Valley Generating Station in Morgan County
Outfall 003 to West Fork White River
(IN0004693, WLA002652)

Parameter	Monthly Average Comparison			Daily Maximum Comparison			Reasonable Potential to Exceed?
	Monthly Average PEQ (mg/l)	Monthly Average PEL* (mg/l)	PEQ > PEL?	Daily Maximum PEQ (mg/l)	Daily Maximum PEL* (mg/l)	PEQ > PEL?	
Antimony	0.0027	0.83	No	0.0027	1.4	No	No
Arsenic	0.003	0.39	No	0.003	0.68	No	No
Barium	0.40	4.3	No	0.40	7.4	No	No
Beryllium	0.000099	0.39	No	0.000099	0.67	No	No
Cadmium	0.00021	0.0059	No	0.00021	0.010	No	No
Chromium (VI)	0.0010	0.018	No	0.0010	0.031	No	No
Total Chromium	0.011	4.8	No	0.011	8.3	No	No
Cobalt	0.0015	0.16	No	0.0015	0.28	No	No
Copper	0.010	0.053	No	0.010	0.093	No	No
Iron	0.30	2.4	No	0.40	4.1	No	No
Lead	0.00032	0.34	No	0.00032	0.60	No	No
Lithium	0.27	1.1	No	0.27	1.8	No	No
Manganese	0.065	12	No	0.065	21	No	No
Mercury	0.00024	0.000012	Yes	0.00024	0.000020	Yes	Yes
Molybdenum	0.54	97	No	0.54	170	No	No
Nickel	0.037	1.3	No	0.037	2.2	No	No
Selenium (lotic)	0.0049	0.14	No	0.0049	0.33	No	No
Silver	0.00014	0.013	No	0.00014	0.022	No	No
Thallium	0.00022	0.099	No	0.00022	0.17	No	No
Vanadium	0.0017	0.091	No	0.0017	0.16	No	No
Zinc	0.030	0.33	No	0.030	0.57	No	No
Boron	7.0	47	No	7.0	82	No	No
Chloride	680	780	No	660	1,300	No	No
Cyanide, Free	0.017	0.025	No	0.017	0.044	No	No
Fluoride	0.00098	20	No	0.00098	35	No	No

* Based on an effluent flow of 1.3 mgd.

TABLE 3
Water Quality-based Effluent Limitations
For AES Eagle Valley Generating Station in Morgan County
Outfall 003 to West Fork White River
(IN0004693, WLA002652)

Parameter	Quality or Concentration*			Quantity or Loading*			Monthly Sampling Frequency
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	
Total Chromium	4.8	8.3	mg/l	52	90	lbs/day	2
Mercury	0.000012	0.000020	mg/l	0.00013	0.00022	lbs/day	1
Zinc	0.33	0.57	mg/l	3.6	6.2	lbs/day	2
Bromine	0.0029	0.0076	mg/l	0.031	0.082	lbs/day	30

* Based on an effluent flow of 1.3 mgd.

September 16, 2022

Documentation of Wasteload Allocation Analysis
For Discharges in the Non-Great Lakes System

Analysis By: John Elliott
Date: September 16, 2022
WLA Number: WLA002652

Facility Information

- **Name:** AES Eagle Valley Generating Station
- **NPDES Permit Number:** IN0004693
- **Permit Expiration Date:** September 30, 2022
- **County:** Morgan
- **Purpose of Analysis:** Reasonable potential analysis for permit renewal
- **Outfall Number:** 003 (see Attachment 1)
- **Facility Operations:** Generation of electrical power using combined-cycle natural gas turbines with heat recovery steam generators; the operations contributing wastewater to the effluent include: cooling tower blowdown, oil separator, filter backwash, reverse osmosis system reject, and zeolite softener brine; the source of water is onsite wells
- **Applicable Effluent Guidelines:** 40 CFR Part 423 Steam Electric Power Generating Point Source Category; the applicable portions of this ELG include limits for the following pollutants with water quality criteria: total chromium and zinc (cooling tower blowdown)
- **Type of Treatment:** Settling and neutralization
- **Current Permitted Flow:** 1.4 mgd (projected average discharge flow included in the Fact Sheet line diagram of the 2015 permit modification and 2017 renewal permit; the outfall was not yet active at the time of the 2017 permit renewal)
- **Effluent Flow for WLA Analysis:** 1.3 mgd (the highest monthly average flow reported on monthly monitoring reports since the facility became operational in November 2017; the flow occurred in August 2019; the facility was not in operation from May 2021 through March 2022, so an older dataset was used)
- **Current Effluent Limits:** The following only includes parameters included in this wasteload allocation analysis.

Parameter	Monthly Average		Daily Maximum		Measurement Frequency
	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	
Copper	Report	---	Report	---	2 X Monthly
Total Chromium	Report	---	Report	---	1 X Monthly
Iron	Report	---	Report	---	2 X Monthly
Zinc	Report	---	Report	---	1 X Monthly
Chloride	Report	---	Report	---	2 X Monthly

Pollutants of Concern and Type of WLA Analysis

Pollutants of Concern and Type of WLA Analysis		
Parameter	**Type of Analysis**	**Reason for Inclusion on Pollutants of Concern List**
Copper, Iron, Chloride	RPE	Monitored in current permit.
Total Chromium, Zinc	RPE/WQBELs	Monitored in current permit. Effluent limitation guidelines apply.
Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Cobalt, Free Cyanide, Fluoride, Hexavalent Chromium, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium	RPE	The groundwater source for the discharge has the potential for elevated concentrations due to influence from an onsite closed coal ash pond.
Bromine	WQBELs	Potential use as a water treatment additive.

Receiving Stream Information

- **Receiving Stream:** West Fork White River (through a 0.6 mile discharge channel)
- **Public Water System Intakes Downstream:** There is no public water system intake downstream of the outfall which would affect this analysis.
- **Designated Stream Use:** West Fork White River is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community.
- **12 Digit HUC:** 051202011203
- **Assessment Unit:** INW01F3_01 (at outfall) and INW01F3_04 (downstream of outfall) (West Fork White River)
- **303(d) List (2022):** Assessment unit INW01F3_01 is on the list for mercury in the water column, Assessment Unit INW01F3_04 is on the list for iron, and both of the above assessment units are on the list for PCBs in fish tissue.
- **TMDL Status:** A TMDL for Middle West Fork of White River for *E. coli* was approved by U.S. EPA July 21, 2005 and includes both of the above assessment units
- **Q1,10 (Outfall):** 260 cfs (168.1 mgd)
- **Q7,10 (Outfall):** 274 cfs (177.1 mgd)
- **Q30,10 (Outfall):** 297 cfs (192.0 mgd)
- **Q50 (Outfall):** 1,420 cfs (917.9 mgd)

(USGS gaging station 03354000 White River near Centerton is upstream of the outfall and was used to estimate the low-flow characteristics using the ratio of drainage areas. The drainage area at this gage is 2,444 mi^2, the Q1,10 is 260 cfs, the Q7,10 is 274 cfs, the Q30,10 is 297 cfs and the Q50 is 1,420 cfs. The drainage area and stream design flows were obtained from the book Low-Flow Characteristics for Selected Streams in Indiana by Kathleen K. Fowler and John T. Wilson, published in 2015 by the USGS. The drainage area upstream of the outfall is 2,448 mi^2. The drainage area was determined using the USGS StreamStats website.)

- **Nearby Dischargers:** None that will impact this WLA analysis.

Calculation of Preliminary Effluent Limitations

The background concentrations of the pollutants of concern were determined by calculating the geometric mean of available instream data. Water quality data for West Fork White River are available from several sources. IDEM fixed water quality monitoring station WR-210 at the State Road 144 bridge near Waverly in Morgan County is upstream of the outfall. The last five years of available data from this fixed station are included in Attachments 2 through 4. Data for antimony and silver upstream of the outfall in Morgan County from an IDEM special project in 2020 and probabilistic sampling in 2011 and 2020 are included in Attachment 5. Data for several pollutants of concern from IDEM Trace Metals sampling upstream of the outfall at Blue Bluff Road near Centerton in Morgan County are included in Attachment 6. Instream data are not available for free cyanide, lithium, molybdenum and vanadium. The background concentrations for these pollutants of concern were set equal zero. The background concentration of bromine was set equal to zero since it does not occur naturally and no upstream sources were identified. Mercury is listed as a bioaccumulative chemical of concern (BCC) under 327 IAC 2-1-9(5). Mixing zones for all discharges of BCCs to waters in the non-Great Lakes system are prohibited after January 1, 2004. Therefore, the criteria for mercury were applied to the undiluted discharge in accordance with 327 IAC 5-2-11.1(b)(6). In addition, since the assessment unit at the outfall is on the 303(d) list for iron, a mixing zone was not allowed for iron, so the applicable water quality criteria were applied without consideration of dilution in the receiving stream. The survey data include values reported as less than the limit of quantitation (LOQ). These values were set equal to one-half the LOQ.

The 50th percentile downstream hardness is used to determine the criteria for those metals whose criteria are dependent on hardness. The acute and chronic chloride criteria at 327 IAC 2-1-6(a)(6) are dependent on the stream hardness and sulfate concentrations. The 50th percentile downstream values of hardness and sulfate are used to calculate the criteria. Downstream water quality data is typically used to determine the water quality characteristics for calculating water quality criteria. The use of the downstream water quality data is intended to determine values of the water quality characteristics that are representative of design conditions. The design condition for the applicable metals and for chloride is based on the facility effluent flow and the Q7,10 low-flow of the receiving stream. Based on the available dilution, downstream IDEM fixed water quality monitoring station WR-192 at the State Road 39 bridge at Martinsville was used. The last five years of available data for hardness, chloride and sulfate from this fixed station are included in Attachment 7.

The coefficient of variation used to calculate preliminary effluent limitations (PELs) was set equal to the default value of 0.6. The number of samples per month used to calculate monthly average PELs for the pollutants of concern was set equal to one for mercury, to 30 for bromine and to 2 for the remaining pollutants of concern based on the expected monitoring frequency. The spreadsheet used to calculate PELs is included in Attachment 8.

Reasonable Potential Analysis

Calculation of Projected Effluent Quality

Effluent data for the pollutants of concern in the existing permit are included in Attachments 9 and 10 for the three-year period August 2019 through July 2022. The facility collected effluent data for the 40 CFR 257 Appendix III and IV coal combustion residual parameters October 2020 through January 2021. The facility also collected data for the NPDES permit renewal application April 2022 through July 2022. These data are included in Attachments 11 and 12. The effluent data include values reported as less than (<) the LOD. These values were assigned the reported less than value.

A reasonable potential to exceed (RPE) analysis was conducted using the procedures under 327 IAC 5-2-11.5 for discharges in the Great Lakes system. Monthly averages were calculated for those months for which at least two data points were consistently available. Therefore, monthly averages could only be calculated for chloride, copper and iron so that both a monthly projected effluent quality (PEQ) and a daily PEQ could be determined to conduct the RPE analysis. For the remaining pollutants of concern, a daily PEQ was calculated and used as the monthly PEQ.

Comparison of PEQs to PELs

The reasonable potential analysis for the pollutants of concern with available data is included in Attachment 13. The results of the analysis show that a PEQ exceeds a PEL mercury. Therefore, the discharge from Outfall 003 has a reasonable potential to exceed a water quality criterion for mercury.

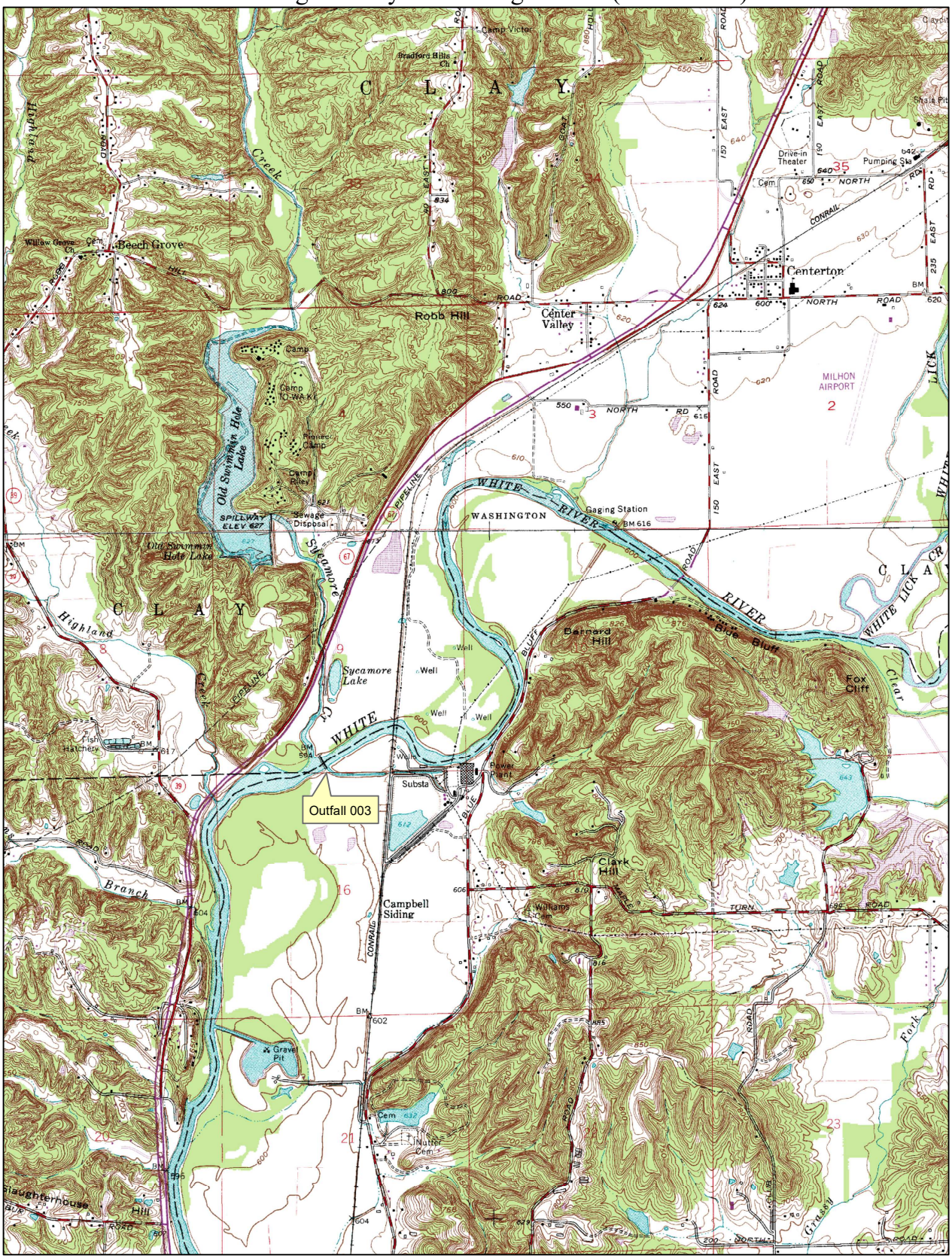
Calculation of Water Quality-based Effluent Limitations

The PELs for mercury and bromine in Attachment 8 are based on water quality criteria and may be included in an NPDES permit as WQBELs. The PELs for total chromium and zinc in Attachment 8 are based on water quality criteria and may be compared to applicable federal ELGs to determine if the WQBELs are required in the permit.

List of Attachments

Attachment 1: Map of Outfall Location
Attachments 2 thru 6: Calculation of Background Concentrations
Attachment 7: Calculation of Water Quality Characteristics
Attachment 8: Calculation of Preliminary Effluent Limitations
Attachments 9 thru 12: Effluent Data for Outfall 003
Attachment 13: Reasonable Potential to Exceed Analysis

ATTACHMENT 1
AES Eagle Valley Generating Station (IN0004693)



This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Mapped By:
John Elliott, Office of Water Quality
Date:9/16/2022

N
W E
S

0 0.25 0.5 1 Miles

IDEM
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
EST. 1986

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

ATTACHMENT 2
Calculation of Background Concentrations
Data From Fixed Station WR-210, State Road 144 Bridge near Waverly

Date	Total Arsenic (ug/l)	Adjusted Total Arsenic (ug/l)	Total Cadmium (ug/l)	Adjusted Total Cadmium (ug/l)	Total Chromium (ug/l)	Adjusted Total Chromium (ug/l)	Total Copper (ug/l)	Iron (ug/l)
6/29/2017	1.58	1.58	<1	--	<1.2	0.6	4.23	579
7/17/2017	1.5	1.5	<1	--	<1.2	0.6	3.39	619
8/31/2017	2.31	2.31	<1	--	<1.2	0.6	4.02	647
9/26/2017	1.89	1.89	<1	--	<1.2	0.6	3.8	255
10/24/2017	1.21	1.21	<1	--	<1.2	0.6	3.84	268
11/14/2017	1.43	1.43	<1	--	<1.2	0.6	2.36	228
12/12/2017	<1.2	0.6	<1	--	<1.2	0.6	2.16	191
1/30/2018	<1.2	0.6	<1	--	<1.2	0.6	2.19	205
2/28/2018	1.56	1.56	<1	--	2.46	2.46	4.66	2350
3/26/2018	<1.2	0.6	<1	--	<1.2	0.6	3.5	292
4/30/2018	<1.2	0.6	<1	--	<1.2	0.6	2.74	277
5/30/2018	1.69	1.69	<1	--	<1.2	0.6	4.46	354
6/26/2018	2.01	2.01	<1	--	<1.2	0.6	3.94	565
7/31/2018	1.51	1.51	<1	--	<1.2	0.6	3.43	591
8/16/2018	1.92	1.92	<1	--	1.45	1.45	5.17	916
9/4/2018	1.91	1.91	<1	--	<1.2	0.6	2.94	169
10/25/2018	1.34	1.34	<1	--	<1.2	0.6	2.87	133
11/8/2018	1.28	1.28	<1	--	<1.2	0.6	2.82	410
12/11/2018	<1.2	0.6	<1	--	<1.2	0.6	1.82	195
1/9/2019	<1.2	0.6	<1	--	<1.2	0.6	2.03	458
2/28/2019	<1.2	0.6	<1	--	<1.2	0.6	2.59	881
3/13/2019	1.51	1.51	<1	--	1.96	1.96	4.21	2190
4/25/2019	<1.2	0.6	<1	--	1.2	1.2	3.28	1050
5/22/2019	1.49	1.49	<1	--	<1.2	0.6	3.76	935
6/27/2019	1.39	1.39	<1	--	<1.2	0.6	3.33	549
7/30/2019	1.83	1.83	<1	--	<1.2	0.6	3.77	372
8/27/2019	1.75	1.75	<1	--	<1.2	0.6	3.81	566
9/24/2019	1.68	1.68	<1	--	<1.2	0.6	3.23	249
10/29/2019	<1.2	0.6	<1	--	<1.2	0.6	2.9	284
11/18/2019	1.42	1.42	<1	--	<1.2	0.6	2.42	156
12/16/2019	<1.2	0.6	<1	--	<1.2	0.6	1.95	133
1/30/2020	<1.2	0.6	<1	--	<1.2	0.6	2.56	804
2/20/2020	<1.2	0.6	<1	--	<1.2	0.6	3.32	1640
5/27/2020	<1.2	0.6	<1	--	<1.2	0.6	3.14	314
6/18/2020	1.74	1.74	<1	--	<1.2	0.6	3.5	204
7/9/2020	1.76	1.76	<1	--	<1.2	0.6	4.37	542
8/31/2020	1.68	1.68	<.5	0.25	<.6	0.3	4.8	160
9/24/2020	1.6	1.6	<.5	0.25	<.6	0.3	5.3	254
10/29/2020	1.4	1.4	<.5	0.25	<.6	0.3	6.1	510
11/30/2020	1.2	1.2	<.5	0.25	<.6	0.3	3.5	533
12/28/2020	0.6	0.6	<.5	0.25	<.6	0.3	2.5	147
1/21/2021	<.6	0.3	<.5	0.25	<.6	0.3	2.7	162
2/8/2021	0.72	0.72	<.5	0.25	<.6	0.3	3.3	132
3/24/2021	1.2	1.2	<.5	0.25	1.2	1.2	3.4	1380
4/14/2021	1.1	1.1	<.5	0.25	0.76	0.76	3.4	730
5/13/2021	1.6	1.6	<.5	0.25	2.3	2.3	4.7	2130
6/3/2021	1.4	1.4	<.5	0.25	1.2	1.2	6.1	944
7/8/2021	1.5	1.5	<.5	0.25	<.6	0.3	4.2	234
8/12/2021	1.5	1.5	<.5	0.25	<.6	0.3	4.4	130
9/28/2021	1.8	1.8	<.5	0.25	0.67	0.67	4.9	613
10/25/2021	1.9	1.9	<.5	0.25	2.8	2.8	8.4	2630
11/23/2021	1	1	<.5	0.25	<.6	0.3	2.8	167
12/21/2021	1.2	1.2	<.5	0.25	1.3	1.3	3.2	1320
1/13/2022	1	1	<.5	0.25	0.71	0.71	2.5	936
2/28/2022	0.81	0.81	<.5	0.25	<.6	0.3	--	466
3/31/2022	0.79	0.79	<.5	0.25	<.6	0.3	2.5	475
4/18/2022	1	1	<.5	0.25	0.9	0.9	3.4	952
5/4/2022	1.6	1.6	<.5	0.25	2.4	2.4	5.3	2230
Geomean		**1.1**		**0.25**		**0.63**	**3.4**	**453**

ATTACHMENT 3
Calculation of Background Concentrations
Data From Fixed Station WR-210, State Road 144 Bridge near Waverly

Date	Total Lead (ug/l)	Adjusted Total Lead (ug/l)	Total Manganese (ug/l)	Total Nickel (ug/l)	Total Selenium (ug/l)	Adjusted Total Selenium (ug/l)	Total Zinc (ug/l)
6/29/2017	1.39	1.39	34.8	3.03	--	--	9.48
7/17/2017	1.29	1.29	35	3.45	--	--	8.6
8/31/2017	1.77	1.77	45.5	5.09	--	--	20.4
9/26/2017	1.02	1.02	35	5.38	--	--	20.7
10/24/2017	<1	0.5	25.3	7.1	--	--	20.3
11/14/2017	<1	0.5	23.2	3.81	--	--	12.4
12/12/2017	<1	0.5	22.9	4.71	--	--	14.6
1/30/2018	<1	0.5	19.9	2.53	--	--	11.3
2/28/2018	2.99	2.99	57.4	3.65	--	--	18.8
3/26/2018	<1	0.5	33.2	3.94	--	--	29.5
4/30/2018	<1	0.5	23.4	3.4	--	--	25.4
5/30/2018	1.18	1.18	41.7	6.47	--	--	21.4
6/26/2018	1.48	1.48	41.8	3.34	--	--	11.9
7/31/2018	1.73	1.73	47.4	4.8	--	--	21.1
8/16/2018	3.12	3.12	64.6	5.09	--	--	29
9/4/2018	<1	0.5	23.5	5.21	--	--	16.9
10/25/2018	<1	0.5	17.5	5.28	--	--	15.2
11/8/2018	<1	0.5	24.8	2.51	--	--	6.8
12/11/2018	<1	0.5	17.7	2	--	--	8.41
1/9/2019	<1	0.5	22	1.98	--	--	9.06
2/28/2019	<1	0.5	28.2	2.49	--	--	10
3/13/2019	2.76	2.76	49.3	3.28	--	--	12.7
4/25/2019	1.55	1.55	39	2.51	<2.2	1.1	8.84
5/22/2019	1.63	1.63	47.6	2.27	<2.2	1.1	10
6/27/2019	1.17	1.17	34	2.99	<2.2	1.1	10.7
7/30/2019	<1	0.5	26.1	4	<2.2	1.1	13
8/27/2019	1.6	1.6	48.1	3.31	2.98	2.98	20
9/24/2019	<1	0.5	34.1	6.21	3.24	3.24	28.1
10/29/2019	<1	0.5	27.6	3.82	<2.2	1.1	18.2
11/18/2019	<1	0.5	20.8	4.85	3.5	3.5	39.6
12/16/2019	<1	0.5	16.3	3.55	<2.2	1.1	18.5
1/30/2020	<1	0.5	27.2	3.02	<2.2	1.1	16.4
2/20/2020	1.72	1.72	36.8	2.95	<2.2	1.1	15.9
5/27/2020	1.23	1.23	31.2	2.64	<2.2	1.1	15.4
6/18/2020	<1	0.5	28.7	3.66	3.24	3.24	24.8
7/9/2020	1.71	1.71	37.8	3.4	<2.2	1.1	21.7
8/31/2020	<.5	0.25	20.6	3.73	2.56	2.56	16
9/24/2020	0.62	0.62	23.3	5.2	3.8	3.8	22.6
10/29/2020	1.2	1.2	38.3	3.8	2.6	2.6	32.5
11/30/2020	0.85	0.85	24.2	2.4	1.4	1.4	10.4
12/28/2020	<.5	0.25	16.7	2	1.6	1.6	19.2
1/21/2021	<.5	0.25	20.4	2.7	2.4	2.4	18.3
2/8/2021	<.5	0.25	18.6	3	1.8	1.8	24.8
3/24/2021	1.6	1.6	40	2.5	1.1	1.1	18.2
4/14/2021	1.3	1.3	37.2	2.2	<1.1	0.55	13.4
5/13/2021	2.7	2.7	55.7	3.2	<1.1	0.55	18.8
6/3/2021	2	2	56.3	3.1	1.3	1.3	26.4
7/8/2021	0.67	0.67	22.2	2.7	1.9	1.9	14.8
8/12/2021	<.5	0.25	23.5	4.1	2.7	2.7	21.2
9/28/2021	1.4	1.4	36.9	3.2	1.9	1.9	30.2
10/25/2021	5.9	5.9	122	3.9	<1.1	0.55	33.6
11/23/2021	<.5	0.25	15.5	2.6	<1.1	0.55	14.5
12/21/2021	1.2	1.2	33.4	2.6	<1.1	0.55	14.5
1/13/2022	0.8	0.8	30.4	2.3	1.2	1.2	16.6
2/28/2022	0.6	0.6	25.6	1.8	<1.1	0.55	8.4
3/31/2022	0.74	0.74	35.3	2.2	<1.1	0.55	11.2
4/18/2022	1.2	1.2	39.6	2.6	<1.1	0.55	17.9
5/4/2022	2.8	2.8	71.7	3.6	<1.1	0.55	16.6
Geomean		**0.85**	**31**	**3.3**		**1.3**	**17**

ATTACHMENT 4
Calculation of Background Concentrations
Data From Fixed Station WR-210, State Road 144 Bridge near Waverly

Date	Boron (ug/l)	Chloride (mg/l)	Sulfate (mg/l)
6/29/2017	64.8	46	45
7/17/2017	73.5	44	42
8/31/2017	164	108	141
9/26/2017	200	151	166
10/24/2017	208	150	130
11/14/2017	93.5	76	78
12/12/2017	133	98	101
1/30/2018	65.8	101	61
2/28/2018	34.2	49	28
3/26/2018	96.4	206	95
4/30/2018	95.3	87	66
5/30/2018	151	123	204
6/26/2018	66.8	57	38
7/31/2018	143	114	105
8/16/2018	168	120	117
9/4/2018	145	103	91
10/25/2018	160	113	139
11/8/2018	59.6	52	40
12/11/2018	77.2	79	66
1/9/2019	69.7	64	67
2/28/2019	58	63	40
3/13/2019	37.9	50	28
4/25/2019	48.3	47	37
5/22/2019	56.8	48	41
6/27/2019	77.8	61	55
7/30/2019	127	73	87
8/27/2019	106	85	94
9/24/2019	160	139	125
10/29/2019	119	99	99
11/18/2019	189	160	202
12/16/2019	116	105	135
1/30/2020	64.9	64	55
2/20/2020	35.9	51	37
5/27/2020	74.4	63	37
6/18/2020	166	119	124
7/9/2020	111	89	73
8/31/2020	157	144	154
9/24/2020	204	167	220
10/29/2020	147	124	115
11/30/2020	42.4	59	47
12/28/2020	86.7	108	85
1/21/2021	104	109	130
2/8/2021	101	168	98
3/24/2021	49.8	64	45
4/14/2021	50.3	65	46
5/13/2021	34.7	44	31
6/3/2021	75.9	88	68
7/8/2021	112	96	90
8/12/2021	191	159	183
9/28/2021	91.2	68	71
10/25/2021	50.8	43	31
11/23/2021	83.4	78	67
12/21/2021	43.2	43	--
1/13/2022	66.3	59	55
2/28/2022	51.3	64	38
3/31/2022	54.4	67	49
4/18/2022	51.2	58	40
5/4/2022	36.5	44	27
Geomean	**86**	**82**	**71**

ATTACHMENT 5
Calculation of Background Concentrations
Data from Special Sampling and Probabilistic Monitoring

Project	L-Site	Date	Total Antimony (ug/l)	Adjusted Total Antimony (ug/l)	Total Silver (ug/l)	Adjusted Total Silver (ug/l)
2020 White River	WWU-14-0008	6/23/2020	<1	0.5	<1	0.5
2020 White River	WWU-14-0008	7/21/2020	<1	0.5	<1	0.5
2020 White River	WWU-14-0008	11/3/2020	<1	0.5	<1	0.5
2011 Corvallis	WWU-15-0002	5/24/2011	<1	0.5	<0.3	0.15
2011 Corvallis	WWU-15-0002	7/19/2011	<1	0.5	<0.3	0.15
2011 Corvallis	WWU-15-0002	10/19/2011	<1	0.5	<0.3	0.15
2020 Corvallis	WWU-15-0006	6/3/2020	<1	0.5	<0.5	0.25
2020 Corvallis	WWU-15-0006	7/15/2020	<1	0.5	<0.5	0.25
2020 Corvallis	WWU-15-0006	10/20/2020	1.1	1.1	<0.5	0.25
		Geomean		**0.55**		**0.27**

ATTACHMENT 6
Calculation of Background Concentrations
Data From West Fork White River Trace Metals Sampling

Date	Barium (ug/l)	Beryllium (ug/l)	Adjusted Beryllium (ug/l)	Hexavalent Chromium (ug/l)	Adjusted Hexavalent Chromium (ug/l)	Fluoride (mg/l)	Thallium (ug/l)
2/14/2002	71	0.01	0.01	< 0.6	0.3	0.28	0.021
5/21/2002	50	0.0337	0.0337	0.3	0.3	0.2	0.0261
8/15/2002	69	< 0.033	0.0165	< 0.6	0.3	0.57	0.0276
11/19/2002	63	0.0151	0.0151	< 0.6	0.3	0.32	0.0216
3/11/2003	71	0.0917	0.0917	< 0.6	0.3	0.16	0.0498
6/17/2003	70	0.0245	0.0245	< 0.6	0.3	0.3	0.0309
9/23/2003	63	0.0161	0.0161	0.3	0.3	0.28	0.0255
12/16/2003	67	< 0.033	0.0165	< 0.6	0.3	0.22	0.0129
3/23/2004	67	< 0.033	0.0165	0.3	0.3	0.27	0.009
8/24/2004	71	0.0164	0.0164	--	--	--	0.0306
10/14/2004	76	0.0256	0.0256	--	--	--	0.0326
2/23/2005	67	0.0189	0.0189	--	--	--	0.0363
6/28/2005	74	0.0154	0.0154	--	--	--	0.0378
9/14/2005	76	0.013	0.013	--	--	--	0.0331
12/14/2005	79	0.0177	0.0177	--	--	--	0.0261
3/8/2006	75	0.0127	0.0127	--	--	--	0.0188
Geomean	**69**		**0.019**		**0.3**	**0.27**	**0.026**

ATTACHMENT 7
Calculation of Water Quality Characteristics
Data From Fixed Station WR-192, State Road 39 Bridge, Martinsville

Date	Hardness (mg/l)	Chloride (mg/l)	Sulfate (mg/l)
6/29/2017	246	41	38
7/17/2017	260	41	40
8/31/2017	227	75	78
9/26/2017	348	133	136
10/24/2017	340	130	158
11/14/2017	279	68	70
12/13/2017	342	96	102
1/30/2018	308	101	46
2/28/2018	222	43	30
3/26/2018	320	141	70
4/30/2018	318	76	54
5/30/2018	354	106	180
6/25/2018	220	48	35
7/31/2018	261	99	85
8/16/2018	263	96	113
9/4/2018	292	94	81
10/25/2018	351	101	102
11/7/2018	265	46	32
12/11/2018	332	75	67
1/9/2019	314	57	55
2/28/2019	275	61	38
3/13/2019	221	48	31
4/25/2019	262	44	34
5/22/2019	271	44	35
6/26/2019	267	48	41
7/30/2019	323	87	90
8/27/2019	276	86	108
9/24/2019	329	132	117
10/29/2019	245	80	84
11/18/2019	354	147	150
12/16/2019	335	92	96
1/30/2020	278	59	45
2/20/2020	254	52	36
5/26/2020	282	52	31
6/18/2020	340	98	89
7/9/2020	245	79	77
8/31/2020	303	137	170
9/24/2020	338	157	138
10/29/2020	273	111	109
11/30/2020	247	53	43
12/28/2020	303	104	79
1/21/2021	341	106	94
2/9/2021	325	147	80
3/24/2021	254	65	40
4/14/2021	274	66	50
5/13/2021	230	42	27
6/3/2021	296	84	61
7/8/2021	276	82	70
8/12/2021	326	134	147
9/28/2021	223	59	46
10/25/2021	227	43	30
11/23/2021	320	73	63
12/21/2021	268	42	--
1/13/2022	309	54	51
2/28/2022	275	65	35
3/31/2022	280	60	44
4/18/2022	272	53	40
5/4/2022	236	43	25
50th %	**277**	**75**	**63**

ATTACHMENT 8

Calculation of Preliminary Effluent Limitations for Discharges in the Non-Great Lakes System (Excluding Discharges to the Ohio River)

General Information	
Facility Name:	AES Eagle Valley Generating Station
County:	Morgan
NPDES Number:	IN0004693
WLA Number:	002652
WLA Report Date:	September 16, 2022
Outfall:	003
Receiving Water:	West Fork White River

Receiving Water Questions (Yes or No)	
Acute Mixing Zone Allowed?	No
Public Water System (PWS) Intake Downstream?	No
Industrial Water Supply (IWS) Intake Downstream?	No
Interstate Wabash River Discharge?	No
Put-and-Take Trout Fishing?	No
Fish Early Life Stages Present?	Yes

Effluent Flow	=	1.3 mgd

Receiving Stream Design Flows		
Q1,10 (Outfall)	=	260 cfs
Q7,10 (Outfall)	=	274 cfs
Q7,10 (Public Water System Intake)	=	cfs
Q7,10 (Industrial Water Supply Intake)	=	cfs
Q30,10 (Outfall)	=	297 cfs
Q50 (Outfall)	=	1420 cfs
Q50 (Public Water System Intake)	=	cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	277 mg/l
Chloride (50th percentile)	=	75 mg/l
Sulfate (50th percentile)	=	63 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer pH (75th percentile)	=	s.u.
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	**Flow**	**Location**
Chronic Aquatic Life (Except Ammonia and Selenium)	=	50%	Q7,10	Outfall
Chronic Aquatic Life (Ammonia and Selenium)	=	50%	Q30,10	Outfall
Chronic WET	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	100%	Q7,10	PWS Intake
Human Noncancer Nondrinking Water	=	50%	Q7,10	Outfall
Human Cancer Drinking Water	=	100%	Q50	PWS Intake
Human Cancer Nondrinking Water	=	25%	Q50	Outfall
Public Water Supply	=	100%	Q7,10	PWS Intake
Industrial Water Supply	=	100%	Q7,10	IWS Intake

Metals Translators (dissolved to total recoverable)		
	Acute	**Chronic**
Arsenic	1.000	1.000
Cadmium	0.901	0.866
Chromium III	0.316	0.860
Copper	0.960	0.960
Lead	0.643	0.643
Nickel	0.998	0.997
Selenium	--	1.000
Silver	0.85	--
Zinc	0.978	0.986

Source of Criteria [1]							Bckgrnd (Outfall) (ug/l)	Bckgrnd (Intake) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	Indiana Water Quality Criteria for the Non-Great Lakes System (ug/l) [2]							Preliminary Effluent Limitations [3]					
															A	B	C	D	E	F	G						
															Aquatic Life Criteria		Human Health Noncancer Criteria		Human Health Cancer Criteria		Add. PWS Criteria	Concentration (ug/l)		Mass (lbs/day)		Criteria	
A	B	C	D	E	F	G									Acute (AAC)	Chronic (CAC)	Drinking (HNC-D)	Nondrinking (HNC-N)	Drinking (HCC-D)	Nondrinking (HCC-N)	(PWS)	Average	Maximum	Average	Maximum	Type [4]	Basis
6	6	1	1			8	0.55			2	0.6	No	7440360	Antimony	720	210	5.6	640			6	830	1400	9	15	Tier II	AAC
1	1	8				8	1.1			2	0.6	No	7440382	Arsenic[5][6]	340	150	5				10	390	680	4.2	7.4	Tier I	AAC
8	8	1	8			8	69			2	0.6	No	7440393	Barium[7]	3687.37	1300.58	1000	160000			2000	4300	7400	47	80	SV[9]	AAC
6	6	8	8			8	0.019			2	0.6	No	7440417	Beryllium[6][7]	333.61	14.83	40	300			4	390	670	4.2	7.3	Tier II	AAC
1	1	8	8			8	0.25			2	0.6	No	7440439	Cadmium[5][6][7]	4.64	1.54	14	1400			5	5.9	10	0.064	0.11	Tier I	AAC
1	1	8	8			8	0.63			2	0.6	No	16065831	Chromium (III)[5][7]	1312	171	140	14000			100	4794.61	8306.70	52.01	90.12	Tier I	AAC
1	1	8	8				0.3			2	0.6	No	18540299	Chromium (VI)[5]	15.71	10.58	230	25000				18	31	0.2	0.34	Tier I	AAC
												No	7440473	Total Chromium								4800	8300	52	90	Tier I	AAC
6	6	8	8				0			2	0.6	No	7440484	Cobalt	140	53	140	11000				160	280	1.7	3	Tier II	AAC
1	1	1	8				3.4			2	0.6	No	7440508	Copper[5][7]	44.44	27.11	1300	56000				53	93	0.57	1	Tier I	AAC
7	7						453		Yes	2	0.6	No	7439896	Iron	2744	2495						2400	4100	26	44	SSC	CAC
1	1	8	8				0.85			2	0.6	No	7439921	Lead[5][6][7]	191.92	7.48	14	190				340	600	3.7	6.5	Tier I	AAC
5	6	8	8				0			2	0.6	No	7439932	Lithium	910	910	720	58000				1100	1800	12	20	Tier I	AAC
5	6	8	8				31			2	0.6	No	7439965	Manganese[7]	10380	4811	1300	59000				12000	21000	130	230	Tier I	AAC
1	1	1	1			8			Yes	1	0.6	No	7439976	Mercury[8]	2.4	0.012	0.14	0.15			2	0.012	0.02	0.00013	0.00022	Tier I	CAC[10]
5	6	8	8				0			2	0.6	No	7439987	Molybdenum	84000	3800	120	10000				97000	170000	1100	1800	Tier I	AAC
1	1	1	1				3.3			2	0.6	No	7440020	Nickel[5][7]	1108.67	123.14	610	4600				1300	2200	14	24	Tier I	AAC
	1	1	1			8	1.3			2	0.6	No	7782492	Selenium (lotic)[5]		3.1	170	4200			50	140	330	1.5	3.6	Tier I	CAC[10]
1		8	8				0.27			2	0.6	No	7440224	Silver[5][7]	9.28		130	26000				13	22	0.14	0.24	Tier I	AAC
6	6	1	1			8	0.026			2	0.6	No	7440280	Thallium	86	35	13	48			2	99	170	1.1	1.8	Tier II	AAC
8	8	8	8				0			2	0.6	No	7440622	Vanadium	79	27	53	540				91	160	0.99	1.7	SV[9]	AAC
1	1	1	1				17			2	0.6	No	7440666	Zinc[5][7]	277.82	280.10	7400	26000				330	570	3.6	6.2	Tier I	AAC
5	6	8	8				86			2	0.6	No	7440428	Boron	41000	7700	4000	330000				47000	82000	510	890	Tier I	AAC
6	6						0			30	0.6	No	7726956	Bromine	3.8	0.17						2.9	7.6	0.031	0.082	Tier II	AAC
1	1					1	82000			2	0.6	No	1688706	Chloride[7][11]	672448	415596					250000	780000	1300000	8500	14000	Tier I	AAC
1	1					8	0			2	0.6	No	57125	Cyanide, Free	22	5.2					200	25	44	0.27	0.48	Tier I	AAC
8	2					8	270			2	0.6	No	16984488	Fluoride[7]	17325.126	2000					4000	20000	35000	220	380	SV[9]	AAC
	2					1	71000			2	0.6	No	14808798	Sulfate[7][11]		1750542					250000	110000000	190000000	1200000	2100000	Tier I	MNE

[1] Source of Criteria
1) Indiana numeric water quality criterion in 327 IAC 2-1-6(a)(3), Table 6-1, 2-1-6(a)(4), Table 6-1a, 2-1-6(a)(6), 2-1-6(a)(7), Table 6-4 or in 2-1-6(e).
2) "Must not exceed" (MNE) criterion in 327 IAC 2-1-6(a)(8), or 2-1-6(a)(9). This criterion is treated as a 4-day average criterion and is implemented in the same manner as the chronic aquatic life criterion.
3) Industrial water supply (IWS) criterion in 327 IAC 2-1-6(f). This criterion is treated as a 4-day average criterion and is implemented in the same manner as the chronic aquatic life criterion.
4) Acute (1-hour average) and chronic (30-day average) criteria for total ammonia nitrogen in "1999 Update of Ambient Water Quality Criteria for Ammonia," EPA-822-R-99-014, December 1999.
5) Tier I criterion derived using the methodology in 327 IAC 2-1-8.2 or 327 IAC 2-1-8.3 when the required data set is available, or using the methodology in 327 IAC 2-1-8.4, 327 IAC 2-1-8.5 or 327 IAC 2-1-8.6.
6) Tier II criterion derived using the methodology in 327 IAC 2-1-8.2 or 327 IAC 2-1-8.3 when the required data set is not available.
7) Site-specific water quality criterion (SSC) in 327 IAC 2-1-8.9, Table 8.9-1 or developed under 327 IAC 2-1-8.9.
8) Screening value (SV).
9) Numeric interpretation of narrative criterion for toxicity using U.S. EPA recommended water quality criteria for whole effluent toxicity (WET).
10) U.S. EPA national recommended water quality criterion under Section 304(a) of the Clean Water Act (CWA).

[2] Except as noted, aquatic life criteria and screening values for all metals are in the form of total recoverable metal.
Human health criteria and screening values and public water supply screening values for all metals are in the form of total recoverable metal.

[3] The preliminary effluent limitations (PELs) for metals are in the form of total recoverable metal (with the exception of Chromium (VI) which is in the form of dissolved metal).

[4] See the table "Indiana Water Quality Criteria for the Non-Great Lakes System" for information on the type and source of criteria.

[5] Aquatic life criteria and screening values for the above-noted metals are in the form of dissolved metal.

[6] The above-noted substances are probable or known human carcinogens.

[7] The above-noted substances have a criterion that is a function of an ambient downstream water quality characteristic. See the table "Indiana Water Quality Criteria for the Non-Great Lakes System" for information on the criterion equation.

[8] The above-noted substances are bioaccumulative chemicals of concern (BCCs). Beginning January 1, 2004, the water quality criteria for a BCC shall be applied directly to the undiluted discharge for all discharges of a BCC.
To apply the water quality criteria for a BCC directly to the undiluted discharge, enter "Yes" in the "Remove Mixing Zone?" column.

[9] Limits based on screening values (as indicated by SV) ARE NOT to be used as water quality-based effluent limitations. These are solely to be used as preliminary effluent limitations.

[10] The monthly average PEL was set equal to the most stringent WLA because the calculated monthly average PEL exceeded the most stringent WLA and a facility-specific CV was not determined.

[11] The ambient downstream water quality characteristic must be entered for both chloride and sulfate and it cannot exceed the applicable chronic aquatic life or "must not exceed" criterion for the substance.
Preliminary effluent limitations (PELs) for chloride and sulfate shall not be used to establish water quality-based effluent limitations that do not ensure the water quality criteria for both substances are achieved in the receiving water.

Last revised: May 16, 2022

ATTACHMENT 9
Effluent Data for AES Eagle Valley (IN0004693) Outfall 003

	Chloride (mg/l)		Copper (mg/l)			Iron (mg/l)		
Date	Daily	Monthly Average	Daily	Adjusted Daily	Monthly Average	Daily	Adjusted Daily	Monthly Average
8/7/2019	498		<	0.01			0.12	
8/21/2019	449		<	0.01		<	0.1	
8/28/2019	449	465	<	0.01	0.01	<	0.1	0.11
9/4/2019	476		<	0.01			0.11	
9/18/2019	434	455	<	0.01	0.01	<	0.1	0.11
10/2/2019	434		<	0.01		<	0.1	
10/23/2019	444	439	<	0.01	0.01	<	0.1	0.10
11/6/2019	484		<	0.01		<	0.1	
11/20/2019	438	461	<	0.01	0.01	<	0.1	0.10
12/4/2019	19.3		<	0.01			0.11	
12/18/2019	486	253	<	0.01	0.01	<	0.1	0.11
1/8/2020	484		<	0.01		<	0.1	
1/22/2020	461	473	<	0.01	0.01	<	0.1	0.10
2/5/2020	479		<	0.01			0.11	
2/12/2020	504	492	<	0.01	0.01	<	0.1	0.11
3/4/2020	500		<	0.01		<	0.1	
3/17/2020	212	356	<	0.01	0.01		0.16	0.13
4/1/2020	464		<	0.01			0.11	
4/15/2020	473	469	<	0.01	0.01		0.14	0.13
5/6/2020	430		<	0.01			0.14	
5/20/2020	469	450	<	0.01	0.01	<	0.1	0.12
6/3/2020	478		<	0.01			0.13	
6/16/2020	473	476	<	0.01	0.01		0.12	0.13
7/1/2020	493		<	0.01		<	0.1	
7/15/2020	477	485	<	0.01	0.01	<	0.1	0.10
8/5/2020	444		<	0.01		<	0.1	
8/18/2020	596	520	<	0.01	0.01	<	0.1	0.10
9/2/2020	572		<	0.01		<	0.1	
9/16/2020	518	545	<	0.01	0.01	<	0.1	0.10
10/21/2020	638		<	0.01		<	0.1	
10/28/2020	514	576	<	0.01	0.01	<	0.1	0.10
11/4/2020	506		<	0.01		<	0.1	
11/18/2020	510	508	<	0.01	0.01	<	0.1	0.10
12/2/2020	485		<	0.01		<	0.1	
12/16/2020	471	478	<	0.01	0.01	<	0.1	0.10
1/6/2021	459		<	0.01			0.11	
1/20/2021	524	492	<	0.01	0.01		0.11	0.11
2/3/2021	547		<	0.01		<	0.1	
2/17/2021	580	564	<	0.01	0.01		0.1	0.10
3/3/2021	590		<	0.01		<	0.1	
3/17/2021	652	621	<	0.01	0.01	<	0.1	0.10
4/7/2021	578		<	0.01		<	0.1	
4/14/2021	575	577	<	0.01	0.01	<	0.1	0.10
5/5/2021	336		<	0.01			0.12	
5/12/2021	269	303	<	0.01	0.01		0.12	0.12
6/2/2021	359		<	0.01		<	0.1	
6/16/2021	358	359	<	0.01	0.01		0.17	0.14
7/7/2021	399		<	0.01			0.4	
7/21/2021	226	313	<	0.01	0.01		0.13	0.27
8/4/2021	211		<	0.01			0.22	
8/18/2021	228	220	<	0.01	0.01		0.16	0.19
9/1/2021	191		<	0.01		<	0.1	
9/15/2021	205	198	<	0.01	0.01		0.17	0.14
10/6/2021	207		<	0.01			0.16	
10/27/2021	204	206	<	0.01	0.01		0.13	0.15
11/3/2021	220		<	0.01			0.16	
11/17/2021	317	269	<	0.01	0.01	<	0.01	0.085

Date		Chloride (mg/l) Daily	Chloride (mg/l) Monthly Average	Copper (mg/l) Daily	Copper (mg/l) Adjusted Daily	Copper (mg/l) Monthly Average	Iron (mg/l) Daily	Iron (mg/l) Adjusted Daily	Iron (mg/l) Monthly Average
12/1/2021		146		<	0.01			0.17	
12/15/2021		152	149	<	0.01	0.01		0.19	0.18
1/5/2022		129		<	0.01			0.11	
1/19/2022		119	124	<	0.01	0.01	<	0.1	0.11
2/2/2022		121		<	0.01		<	0.1	
2/16/2022		110	116	<	0.01	0.01		0.13	0.12
3/2/2022		366		<	0.01			0.12	
3/16/2022		662	514	<	0.01	0.01		0.17	0.15
4/6/2022		566		<	0.01		<	0.1	
4/20/2022		619.5	593		0.0056	0.0078		0.0886	0.094
5/4/2022		640		<	0.01			0.11	
5/18/2022		523	582	<	0.01	0.01	<	0.1	0.11
6/1/2022		519		<	0.01		<	0.1	
6/15/2022		558	539	<	0.01	0.01	<	0.1	0.10
7/6/2022		546		<	0.01		<	0.1	
7/20/2022		488	517	<	0.01	0.01	<	0.1	0.10
Outlier Analysis	**mean**	**421**			**0.010**			**0.12**	
	std	**155**			**0.00051**			**0.044**	
	mean + 3std	**887**			**0.011**			**0.25**	
Reasonable Potential Analysis	**n**	**73**	**36**		**73**	**36**		**73**	**36**
	CV	**0.4**	**0.3**		**0.1**	**0.0**		**0.4**	**0.3**
	max	**662**	**621**		**0.01**	**0.01**		**0.4**	**0.27**

ATTACHMENT 10
Effluent Data for AES Eagle Valley (IN0004693) Outfall 003

	Total Chromium (ug/l)		Zinc (mg/l)	
Date		**Daily**		**Daily**
8/7/2019	<	10	<	0.02
9/4/2019	<	10	<	0.02
10/2/2019	<	10	<	0.02
11/6/2019	<	10	<	0.02
12/4/2019	<	10	<	0.02
1/8/2020	<	10	<	0.02
2/5/2020	<	10	<	0.02
3/4/2020	<	10	<	0.02
4/1/2020	<	10	<	0.02
5/6/2020	<	10	<	0.02
6/3/2020	<	10	<	0.02
7/1/2020	<	10	<	0.02
8/5/2020	<	10	<	0.02
9/2/2020	<	10	<	0.02
10/21/2020	<	10	<	0.02
10/23/2020		0.47		
10/30/2020		0.53		
11/4/2020	<	10	<	0.02
11/6/2020		0.52		
11/13/2020		0.51		
12/2/2020	<	10	<	0.02
12/4/2022		0.57		
12/11/2022		0.62		
12/18/2022		0.96		
1/6/2021	<	10	<	0.02
1/8/2021		0.84		
1/15/2021		0.66		
1/22/2021		0.64		
2/3/2021	<	10	<	0.02
3/3/2021	<	10		0.025
4/7/2021	<	10	<	0.02
5/5/2021	<	10	<	0.02
6/2/2021	<	10	<	0.02
7/7/2021	<	10	<	0.02
8/4/2021	<	10	<	0.02
9/1/2021	<	10	<	0.02
10/6/2021	<	10	<	0.02
11/3/2021	<	10		0.024
12/1/2021	<	10		0.03
1/5/2022	<	10		0.026
2/2/2022	<	10	<	0.02
3/2/2022	<	10		0.025
4/6/2022	<	10	<	0.02
4/20/2022		1.6		0.0209
5/4/2022	<	10	<	0.02
6/1/2022	<	10	<	0.02
7/6/2022	<	10	<	0.02
Outlier Analysis	**mean**	**7.8**		**0.021**
	std	**4.0**		**0.0022**
	mean + 3std	**19.8**		**0.027**
Reasonable Potential Analysis	**n**	**47**		**37**
	CV	**0.5**		**0.1**
	max	**10**		**0.03**

ATTACHMENT 11
Effluent Data for AES Eagle Valley (IN0004693) Outfall 003

Parameter	Units	Date of Effluent Sample							Number of Samples	Maximum
		4/20/2022	5/4/2022	5/18/2022	6/1/2022	6/15/2022	6/29/2022	7/6/2022		
Aluminum	mg/l	0.0119	0.0137	0.0203	0.0251	0.0094	--	--	5	0.0251
Ammonia (as N)	mg/l	0.15	--	0.11	--	0.11	--	--	3	0.15
Free Cyanide	ug/l	7.4	--	2.8	< 1.9	1.7	--	1.8	5	7.4
Antimony	ug/l	0.9	--	0.7	--	0.58	--	--	3	0.9
Arsenic	ug/l	1.0	--	0.88	--	0.94	--	--	3	1.0
Beryllium	ug/l	< 0.033	--	< 0.021	--	< 0.033	--	--	3	0.033
Chromium (VI)	ug/l	0.227	0.204	0.267	0.439	0.303	--	--	5	0.439
Lead	ug/l	0.14	--	< 0.14	--	0.12	--	--	5	0.14
Manganese	ug/l	28.4	23.3	17.4	14.4	9.5	--	--	5	28.4
Mercury	ng/l	28.5	--	24.7	--	--	80.1	--	3	80.1
Nickel	ug/l	16	13.9	10.9	13.1	11.5	--	--	5	16
Nitrate-Nitrite	mg/l	5.4	--	5.1	--	6.4	--	--	3	6.4
Phosphorus	mg/l	2.1	--	1.8	--	1.8	--	--	3	2.1
Silver	ug/l	0.041	< 0.029	0.06	< 0.037	< 0.037	--	--	5	0.06
Thallium	ug/l	< 0.073	--	< 0.038	--	< 0.073	--	--	3	0.073
Total Dissolved Solids	mg/l	4110	--	3440	--	3760	--	--	3	4110
Vanadium	ug/l	0.74	0.73	0.67	0.66	0.72	--	--	5	0.74

ATTACHMENT 12
Effluent Data for AES Eagle Valley (IN0004693) Outfall 003

Date		Barium (ug/l) Daily	Boron (ug/l) Daily	Cadmium (ug/l) Daily	Cobalt (ug/l) Daily	Fluoride (mg/l) Daily	Lithium (ug/l) Daily	Molybdenum (ug/l) Daily	Selenium (ug/l) Daily	Sulfate (mg/l) Daily
10/23/2020		296	5280	0.17	0.97	0.87	--	450	2.8	1700
10/30/2020		310	6080	0.18	0.94	0.89	--	489	3.1	1720
11/6/2020		330	5460	0.15	1.1	0.78	--	400	2.9	1770
11/13/2020		361	5150	0.18	1.2	0.72	205	387	3.6	1800
12/4/2020		347	5130	0.16	1.3	0.82	212	374	2.7	1980
12/11/2020		350	5880	0.15	1.1	0.88	248	401	3.1	1980
12/18/2020		330	6360	0.17	1.1	0.87	224	493	2.8	1930
1/8/2021		328	6150	0.16	1.4	0.74	--	457	4.1	2060
1/15/2021		334	4870	0.16	1.1	0.72	189	442	2.4	1990
1/22/2021		341	5430	0.19	1.1	0.86	--	457	2.0	1910
4/20/2022		354	3880	0.18	1.4	0.76	--	330	1.9	2050
5/4/2022		--	--	--	--	--	164	--	--	--
5/18/2022		--	--	--	--	--	166	--	--	--
6/1/2022		--	--	--	--	--	196	--	--	--
6/15/2022		--	--	--	--	--	224	--	--	--
7/6/2022		--	--	--	--	--	196	--	--	--
Outlier Analysis	**mean**	**335**	**5425**	**0.17**	**1.2**	**0.81**	**202**	**425**	**2.9**	**1899**
	std	**19**	**701**	**0.013**	**0.15**	**0.068**	**26**	**51**	**0.64**	**130**
	mean + 3std	**392**	**7528**	**0.21**	**1.6**	**1.0**	**281**	**578**	**4.8**	**2289**
Reasonable Potential Analysis	**n**	**11**	**11**	**11**	**11**	**11**	**10**	**11**	**11**	**11**
	CV	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**
	max	**361**	**6360**	**0.19**	**1.4**	**0.89**	**248**	**493**	**4.1**	**2060**

ATTACHMENT 13

Reasonable Potential Statistical Procedure for Discharges in the Non-Great Lakes System (Excluding Discharges to the Ohio River)

Facility Name: AES Eagle Valley Generating Station **NPDES Number: IN0004693** **WLA Number: 002652** **WLA Report Date: September 16, 2022** **Outfall Number: 003** **Receiving Water: West Fork White River**		**Monthly Average Determination**							**Daily Maximum Determination**						
Parameters	Reasonable Potential to Exceed? (Yes or No)*	Maximum Monthly Average (ug/l)	Number of Monthly Averages	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?	Maximum Daily Sample (ug/l)	Number of Daily Samples	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?
Antimony	No					2.7	830	No	0.9	3	0.6	3	2.7	1400	No
Arsenic	No					3	390	No	1	3	0.6	3	3	680	No
Barium	No					400	4300	No	361	11	0.1	1.1	400	7400	No
Beryllium	No					0.099	390	No	0.033	3	0.6	3	0.099	670	No
Cadmium	No					0.21	5.9	No	0.19	11	0.1	1.1	0.21	10	No
Chromium (VI)	No					1	18	No	0.439	5	0.6	2.3	1	31	No
Total Chromium	No					11	4800	No	10	47	0.5	1.1	11	8300	No
Cobalt	No					1.5	160	No	1.4	11	0.1	1.1	1.5	280	No
Copper	No	10	36	0	1	10	53	No	10	73	0.1	1	10	93	No
Iron	No	270	36	0.3	1.1	300	2400	No	400	73	0.4	1	400	4100	No
Lead	No					0.32	340	No	0.14	5	0.6	2.3	0.32	600	No
Lithium	No					270	1100	No	248	10	0.1	1.1	270	1800	No
Manganese	No					65	12000	No	28.4	5	0.6	2.3	65	21000	No
Mercury	Yes I					0.24	0.012	Yes	0.0801	3	0.6	3	0.24	0.02	Yes
Molybdenum	No					540	97000	No	493	11	0.1	1.1	540	170000	No
Nickel	No					37	1300	No	16	5	0.6	2.3	37	2200	No
Selenium (lotic)	No					4.9	140	No	4.1	11	0.2	1.2	4.9	330	No
Silver	No					0.14	13	No	0.06	5	0.6	2.3	0.14	22	No
Thallium	No					0.22	99	No	0.073	3	0.6	3	0.22	170	No
Vanadium	No					1.7	91	No	0.74	5	0.6	2.3	1.7	160	No
Zinc	No					30	330	No	30	37	0.1	1	30	570	No
Boron	No					7000	47000	No	6360	11	0.1	1.1	7000	82000	No
Chloride	No	621000	36	0.3	1.1	680000	780000	No	662000	73	0.4	1	660000	1300000	No
Cyanide, Free	No					17	25	No	7.4	5	0.6	2.3	17	44	No
Fluoride	No					0.98	20000	No	0.89	11	0.1	1.1	0.98	35000	No

* Reasonable Potential to Exceed:

1) "Yes I" means that a projected effluent quality (PEQ) exceeded a preliminary effluent limitation (PEL) based on a Tier I criterion.
2) "Yes II" means that a PEQ exceeded a PEL based on a Tier II criterion.
3) "Yes SSC" means that a PEQ exceeded a PEL based on a site-specific criterion.
4) "No" means that a PEQ did not exceed a PEL.
5) "Evaluate Criteria" means that a PEQ exceeded a PEL based on a screening value.

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE NO. 20230331 – IN0004693 – F
DATE OF NOTICE: MARCH 31, 2023

The Office of Water Quality issues the following NPDES FINAL PERMIT.

MAJOR – RENEWAL

AES, EAGLE VALLEY GENERATING STATION, Permit No. IN0004693, MORGAN COUNTY, 4040 Blue Bluff Rd, Martinsville, IN. This major industrial facility is a steam electric generating station which discharges 1.3 million gallons daily of stormwater, process & non-process wastewater to the West Fork of White River via Outfall 003 located at 39º 29' 10" - 86º 25' 50". Permit Manager: Jodi Glickert, 317/447-4176, JGlicker@idem.IN.gov.

Notice of Right to Administrative Review [Permits]

If you wish to challenge this Permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA) and serve a copy of the Petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director
Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue - Room N103
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue - Room 1301
Indianapolis, Indiana 46204

The Petition must contain the following information:

1. The name, address and telephone number of each petitioner.
2. A description of each petitioner's interest in the Permit.
3. A statement of facts demonstrating that each petitioner is:
    a. a person to whom the order is directed;
    b. aggrieved or adversely affected by the Permit;
    c. entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The alleged environmental concerns or technical deficiencies of the Permit.
7. The Permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
8. The identity of any persons represented by the petitioner.
9. The identity of the person against whom administrative review is sought.
10. A copy of the Permit that is the basis of the petition.
11. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the Permit. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If you seek to have a Permit stayed during the Administrative Review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.
Pursuant to IC 4-21.5-3-17, OEA will provide all parties with Notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to Notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.
More information on the appeal review process is available on the website for the Office of Environmental Adjudication at https://www.in.gov/oea/.

Hoosier Environmental COUNCIL

3951 N. Meridian, Ste. 100, Indianapolis, IN 46208
P 317.685.8800 F 317.686.4794

WWW.HECWEB.ORG

March 20, 2023

Via Email
Jodi Glickert, Permit Manager
Indiana Department of Environmental Management
jglicker@idem.in.gov

RE: Comments on the AES Indiana Eagle Valley Generating Station draft NPDES Renewal for Permit No. IN0004693

Dear Ms. Glickert,

Please accept the following comments regarding the AES Indiana Eagle Valley draft discharge permit number IN0004693 under the National Pollutant Discharge Elimination System (NPDES). The Hoosier Environmental Council (HEC) appreciates this opportunity to comment on the draft permit and share our concerns with the agency.

Background:

The following two paragraphs were drafted by then Senior Staff Attorney at HEC, Kim Ferraro, in July 2021 and included in a document titled, *Supplemental comments on closure plan re NPDES permit discharge of GW*. They are included again here because of their relevance to the draft NPDES permit.

> IPL's [now AES Indiana] groundwater monitoring reports for 2017, 2018, 2019, and 2020 have consistently shown elevated levels of arsenic, boron, lithium, and molybdenum[1], confirming that leachate from IPL's coal ash ponds is contaminating area groundwater. We also know from IPL's Closure Plan that the company has installed "three high production wells [that] are continuously pumping [that contaminated] groundwater in order to supply the large quantity of cooling water required to run [IPL's new combined cycle gas turbine (CCGT) power plant.]"[2] These wells are clustered within the footprint of the new CCGT facility immediately southwest of ash pond D and, according to IPL, the significant water withdrawals from these wells have reversed the site's historic

[1] ATC Group Services LLC (Jan. 29, 2021) 2020 CCR Annual Groundwater Monitoring and Corrective Action Report. http://s2.q4cdn.com/262924254/files/doc_downloads/Groundwater-Monitoring/IPL-EVS-2020-Annual-GWM-and-CA-Rpt-1-29-2021-Final.pdf
[2] *See e.g.*, IPL Revised Closure Plan (Feb. 28, 2020) at 50, 70 (VFC# 82928191).

groundwater flow from a "west-southwesterly direction toward the White River . . . to the southeast."[3]

Consequently, IPL has concluded that "during normal CCGT operations . . . groundwater in this area is *either* captured by the three high production wells . . . *or* is otherwise flowing slowly towards the White River."[4] What IPL does not mention in its Closure Plan is that even the contaminated groundwater that is "captured" for cooling water eventually gets discharged, untreated, to the White River as well. Indeed, IPL's existing NPDES permit confirms that although the groundwater that is pumped from these high-capacity wells is treated prior to use as cooling water, the waste generated from that treatment process is added back to the wastewater effluent that is discharged to the White River without treatment.[5] Stated differently, *all* of the coal ash contaminated groundwater at IPL is, in one way or another, being released to the White River.

The groundwater contamination by the Eagle Valley coal ash has continued since those 2021 comments. The annual groundwater monitoring and corrective action reports required under the federal CCR Rule for 2021 and 2022 continue to show groundwater contamination for arsenic, lithium, and molybdenum at statistically significant levels above the associated groundwater protection standards pursuant to 40 CFR 257.95 and in multiple monitoring wells. Unfortunately, as detailed below, the draft NPDES permit does nothing to address this ongoing contamination despite the stated position of IDEM's OLQ that the NPDES permit would be the appropriate regulatory mechanism to do so.[6]

Monitoring – a more sensitive detection limit for hexavalent chromium is needed

HEC appreciates and supports IDEM's inclusion of a complete list of coal ash contaminants in Table 1 of the draft permit (page 2, pdf page 5). It makes sense to monitor for these known coal ash contaminants in the discharge from the Eagle Valley Generating Station since the discharge originates from the coal-ash contaminated groundwater at the site.

How these constituents are monitored is also important. If a detection limit is set too high, the constituent may be present but below the limit of detection thereby creating a false assurance that a contaminant is not present. That appears to be the case with the detection limit set for hexavalent chromium. Specifically, Table 1 refers the reader to footnote 18 for limits of detection (LOD) and limits of quantitation (LOQ). For hexavalent chromium, EPA test method

[3] *Id.* at 50.
[4] *Id* (emphasis added).
[5] *See* IPL NPDES Permit, Final Modification Fact Sheet (Dec. 17, 2015) at 5-6, VFC# 80188037 (describing wastewater sources and treatment).
[6] *See* email exchange between Dr. Indra Frank, Stanley Diamond, and IDEM's OLQ Permits Branch Chief, Stephen Thill between May 25, 2021, through June 24, 2021, at VFC#83174214 (stating OLQ's position that this contamination constitutes point source discharges to state waters and thus the appropriate regulatory mechanism for addressing the discharges is through NPDES permitting, not the CCR Rule's closure process).

218.6 is cited, which has an LOD of 5 ug/L and an LOQ of 15.9 ug/L. This is not appropriate or protective in our view.

Hexavalent chromium is highly toxic and carcinogenic even at exceedingly low concentrations. Indiana's 2023 screening level for hexavalent chromium in groundwater used for residential tap water is 0.4 ug/L,[7] which is less than one tenth of the limit of detection listed in the draft permit. Thus, while we appreciate and support IDEM's inclusion of hexavalent chromium for monitoring in Table 1, we respectfully request a revision to require a more sensitive method with a lower limit of detection for protection of human health and the environment.

The permit should require monitoring and impose effluent limits for iron

The discharge from the Eagle Valley Generating Station enters a river segment that is impaired for iron. The IDEM factsheet (page 8, or pdf page 75 in the Public Notice) noted that, "The assessment unit for the West Fork of the White River is INW01F3_01 at the outfall and INW01F3_04 downstream . . . the USEPA listed unit INW01F3_04 as impaired for iron."

Iron is common in coal ash leachate.[8] Yet, the draft permit does not require either monitoring or a discharge limit for iron.

This is especially concerning given that there are groundwater monitoring samples at Eagle Valley that have shown high iron levels. For instance, groundwater monitoring for iron was reported in the Eagle Valley coal ash closure plan submitted to IDEM in 2016,[9] revealing several of the groundwater monitoring wells with iron exceeding 1,000 ug/l. The highest result listed in the Closure Plan was 2,360 ug/l. The groundwater tables from the Closure Plan are included as Attachment 1.

Given these facts—i.e., that the receiving waterway is impaired for iron, groundwater samples at Eagle Valley have confirmed high iron concentrations, and that contaminated groundwater is allowed to be discharged via the permitted outfall—the failure to impose monitoring requirements for iron at the outfall violates the Clean Water Act.

Data are available for calculating reasonable potentials to exceed on more parameters

The IDEM fact sheet states:

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[7] Indiana Department of Environmental Management (2023). IDEM Screening and Closure Level Tables. https://www.in.gov/idem/cleanups/2392.htm

[8] Electric Power Research Institute (2006). Characterization of Field Leachates at Coal Combustion Product Management Sites. Summary table page 4-4 (pdf page 56).

[9] Sargent & Lundy (July 28, 2016). Indianapolis Power and Light Eagle Valley Generating Station Ash Pond System Closure and Post-Closure Plan. VFC doc #80330362. Groundwater results table pdf pages 92-93.

> Because the [ash] ponds [at Eagle Valley] are unlined, pollutants historically contributed by coal ash could be present in groundwater. Groundwater is the source of water for all processes at this facility and is provided by production wells, many of which are in the vicinity of the ash ponds. Monitoring is proposed to evaluate the presence of these pollutants, and data collected will be used to determine if any of the pollutants have reasonable potential to exceed (RPE) water quality criteria. . .” (IDEM Fact Sheet at pdf 79)

Six years of groundwater monitoring data at Eagle Valley are already available to provide the concentration of parameters in the source water[10], including: antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, fluoride, lead, lithium, molybdenum, selenium, sulfate, thallium, and radium. Data are also available on the degree of concentration as the water passes from the wells to the Outfall (see Table 1 below). These data taken together provide an opportunity to estimate the concentrations of parameters in the discharge from Outfall 003. There are also data on concentrations in the discharge from sampling AES has done[11]. HEC requests that IDEM use the available data to calculate reasonable potentials to exceed (RPE) for the list of parameters in this paragraph rather than wait an additional 5 years for the next permit renewal.

IDEM should deny AES’s request for a renewed waiver from the requirements of 40 CFR 423.13(d)(1) to impose limits on contaminants in cooling water

The discharge from the Eagle Valley Generating Station includes cooling tower blowdown which is subject to 40 CFR 423.13(d). That regulation states[12]:

> The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of the cooling tower blowdown times the concentration listed below:

Pollutant of pollutant property	Maximum for any 1 day – (mg/l)	Average of daily values for 30 consecutive days shall not exceed = (mg/l)
The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower	(1)	(1)

[10] AES. Annual Groundwater Monitoring and Corrective Action Reports for 2017, 2018, 2019, 2020, 2021, and 2022. Available at https://www.aesindiana.com/eagle-valley-generating-station
[11] IDEM (Feb 17, 2023). Public Notice no. 20230217-IN0004693-D, Draft NPDES Permit. Pdf page 113 (Attachment 11 to the Documentation of Wasteload Allocation Analysis).
[12] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-423/section-423.13

maintenance, except:		
Chromium, total	0.2	0.2
Zinc, total	1.0	1.0

1 No detectable amount.

Appendix A to 40 CFR 423 includes metals commonly found in leachate from coal combustion residuals, including:

- 114 Antimony
- 115 Arsenic
- 117 Beryllium
- 118 Cadmium
- 119 Chromium
- 122 Lead
- 123 Mercury
- 125 Selenium
- 127 Thallium
- 128 Zinc

AES has requested a renewal of its previously granted waiver for the 126 Appendix A Priority Pollutants in cooling tower blowdown. *See* IDEM Fact Sheet at pdf page 80. IDEM should not renew the waiver because AES cannot demonstrate that Priority Pollutants are not present or are "present only at background levels from intake water and without any increase in the pollutant due to activities from the discharger." 40 CFR 122.44(a)(2)

Here, the water in the cooling tower blowdown at Eagle Valley originates from well water obtained on site. As stated in the Eagle Valley Corrective Measures Assessment, "Plant process water, including cooling water for the new natural gas-fired plant, is sourced from three high yield groundwater production wells, screened in the alluvial aquifer"[13]. Those wells are located just to the south and west of the generating station and lie between the generating station and the coal ash impoundments. In fact, one of the production wells is located less than 300 feet from the nearest impoundment (see Attachment #2).

These production wells are withdrawing coal-ash contaminated groundwater from beneath the CCR impoundments. AES acknowledges this in its Corrective Measures Assessment:

> "Arsenic, lithium, and molybdenum detected at the boundary of the unit [Ash Pond System] at concentrations above the GWPS [Groundwater Protection Standards] would be addressed with hydraulic containment (HC) through groundwater pumping of the existing production wells associated with the Eagle

[13] Haley and Aldrich (Oct 2019). Report of Corrective Measures Assessment, Eagle Valley Generating Station, Martinsville, Indiana. Page 6. https://www.aesindiana.com/sites/default/files/2021-02/IPL-EV-CMA-Final.pdf

Valley Combined Cycle Gas Turbine Natural Gas Plant to hydraulically control the migration of those constituents downgradient."[14]

The groundwater under and around the CCR impoundments at Eagle Valley has documented contamination with boron, arsenic, lithium, and molybdenum at levels that exceed the applicable Groundwater Protection Standards (GWPS) under the federal CCR Rule (40 CFR 257 subpart D)[15]. Mercury has been below the limit of detection in the annual CCR groundwater reports, but the limit of detection in the most recent report was 0.2 ug/l or 200 ng/l, which is much too high to be relevant[16]. Mercury has been documented in the Eagle Valley effluent at concentrations exceeding Indiana's Water Quality Criterion of 12 ng/l[17]. Also, Mercury is likely to be present in this groundwater based on its known tendency for leaching from CCR[18].

Water drawn up by the production wells was sampled in the summer of 2020 documenting that it contains elevated levels of CCR contaminants. In samples dated May and June of 2020, there were elevated levels of lithium, arsenic, boron, and molybdenum similar to levels reported in the Eagle Valley groundwater monitoring wells[19]. One of the tables from the production well samples is pasted in below.

[14] Haley and Aldrich (Oct 2019). Report of Corrective Measures Assessment, Eagle Valley Generating Station, Martinsville, Indiana. Pdf page 17 (report page 12). https://www.aesindiana.com/sites/default/files/2021-02/IPL-EV-CMA-Final.pdf

[15] AES. Annual Groundwater Monitoring and Corrective Action Reports. Available at https://www.aesindiana.com/eagle-valley-generating-station

[16] ATC Group Services (Jan 30, 2023). 2022 CCR Annual Groundwater Monitoring and Corrective Action Report. https://www.aesindiana.com/sites/default/files/2023-03/AES-Eagle-Valley-2022-Annual-GWMCA-Report-1-30-2023-Final-Revised-2-28-2023_RFD.pdf

[17] IDEM (Feb 17, 2023). Public Notice no. 20230217-IN0004693-D, Draft NPDES Permit. Pdf page 113 (Attachment 11 to the Documentation of Wasteload Allocation Analysis).

[18] Electric Power Research Institute (2006). Characterization of Field Leachates at Coal Combustion Product Management Sites.

[19] AES. Annual Groundwater Monitoring and Corrective Action Reports. Available at https://www.aesindiana.com/eagle-valley-generating-station

40 CFR 257 Appendix III and IV CCR Constituents [1, 2]
Summer 2020 Sampling Results for Production Well Water
AES Indiana – Eagle Valley Generating Station

Parameter	Units	Sampling Method	Well #5			Well #6			Well #7		
			05/29/20	06/05/20	06/12/20	05/29/20	06/05/20	06/12/20	05/29/20	06/05/20	06/12/20
Chloride	mg/L	EPA 300.0	98.2	118	125	56.8	62.5	54.2	104	103	97.4
Fluoride	mg/L	EPA 300.0	0.16	0.15	0.14	J 0.011	J 0.024	J 0.02	0.13	0.14	0.14
Sulfate	mg/L	EPA 300.0	129	184	241	93.9	96.9	85.6	216	212	208
Lithium [3]	ug/L	EPA 200.7	NSD	NSD	38.3	NSD	NSD	J 16.6	NSD	NSD	79.4
Antimony	ug/L	EPA 200.8	J 0.18	J 0.25	J 0.21	< 0.1	J 0.11	< 0.1	< 0.1	J 0.14	< 0.1
Arsenic	ug/L	EPA 200.8	J 0.30	J 0.16	< 0.20	J 0.67	J 0.14	< 0.20	J 0.22	J 0.15	J 0.21
Barium	ug/L	EPA 200.8	76.7	83.9	85.3	66.7	61.2	60.3	77.6	79.1	74.5
Beryllium	ug/L	EPA 200.8	< 0.022	< 0.038	< 0.022	< 0.022	< 0.038	< 0.022	< 0.022	< 0.038	< 0.022
Boron	ug/L	EPA 200.8	456	597	981	209	209	191	2580	2500	2440
Cadmium	ug/L	EPA 200.8	J 0.066	J 0.060	J 0.051	< 0.022	< 0.024	< 0.022	J 0.067	J 0.045	J 0.054
Chromium	ug/L	EPA 200.8	J 0.11	< 0.19	J , 0.14	J 0.89	< 0.19	< 0.11	J 0.12	< 0.19	< 0.11
Cobalt	ug/L	EPA 200.8	J 0.33	J 0.28	J 0.42	J 0.27	J 0.18	J 0.3	J 0.38	J 0.29	J 0.4
Lead	ug/L	EPA 200.8	J 0.041	< 0.15	< 0.034	< 0.034	< 0.15	< 0.034	J 0.041	< 0.15	< 0.034
Molybdenum	ug/L	EPA 200.8	123	120	108	15.8	15.3	13.8	146	150	145
Selenium	ug/L	EPA 200.8	< 0.41	< 0.27	< 0.41	< 0.41	< 0.27	< 0.41	1.3	J 1.0	1.3
Thallium	ug/L	EPA 200.8	< 0.031	< 0.05	< 0.031	< 0.031	< 0.05	< 0.031	< 0.031	< 0.05	< 0.031
TOC	mg/L	SM 5310C	1.1	1.1	1.1	J 0.67	J 0.71	J 0.77	J 0.69	J 0.83	J 0.84

NSD – No Sampling Data

1. AES IN Eagle Valley sampling was based on a phased approach with two (2) key drivers; CCR Selection of Remedy (SOR) support and/or NPDES discharge characterization. Depending on the results of the first phase of sampling, additional sampling was performed with a more limited set of CCR constituents. If initial phase (well) sampling indicated levels near and below historical NPDES permit application sampling results associated with the CCGT facility, no further sampling was performed for NPDES purposes. In addition, CCR constituents' sampling frequency varies based on several other factors (e.g., Lithium does not have an Indiana Water Quality Criteria and as such was not sampled for NPDES but for CCR SOR purposes).
2. Two 40 CFR 257 Appendix III and IV CCR constituents were not sampled for: calcium and total dissolved solids.
3. Limited sampling as no federal or state (IN) Water Quality Criteria

Sampling from Eagle Valley Outfall 003 to the White River demonstrates that the CCR contaminants in the production well water are being concentrated several fold as they pass through processes in the generating station. For example, the concentration of boron in the three production wells' samples averaged 769, 167, and 2184 ug/L while during the same period the concentration in the discharge at Outfall 003 averaged 5579 ug/L.

Source	Average concentrations Oct 2020 – Jan 2021		
	Lithium	Boron	Molybdenum
Production well #5	31.6	769	104
Production well #6	13.2	167	9
Production well #7	78	2184	136
Outfall 003	216	5579	435

Table 1. Average concentrations in samples taken between 10/23/20 and 1/22/21 at Eagle Valley and reported to IDEM, Virtual File Cabinet doc# 83200800. These calculated averages demonstrate the concentration of parameters that is happening as the water moves through the Eagle Valley plant.

The fact that the contaminants are concentrated as the water passes through the generating station is not unexpected. The Process Flow Diagram shows the water from the on-site wells (the production wells) going through evaporative coolers, the boiler, and the cooling tower.[20] Those are all locations with significant evaporative losses. Since water is lost to evaporation, the concentrations of constituents in that water are increasing.

We also know that the groundwater being used for cooling water contains arsenic and mercury, which means the cooling water likewise contains these contaminants from the list of Priority Pollutants in 40 CFR 423.13. Not only are the pollutants present in the intake water, but their concentrations are being increased by activities of AES as documented above.

Also concerning, there is an additive to the cooling water that is introducing additional Priority Pollutants from 40 CFR 423 Appendix A. The diagram labeled "Process Flow Diagram Water Balance Sheet 1" and included in the draft permit as "Figure 2: Water Balance Diagram"[21] shows the additions to the cooling tower. One of those additions comes from the "Waste Water Collection Sump".

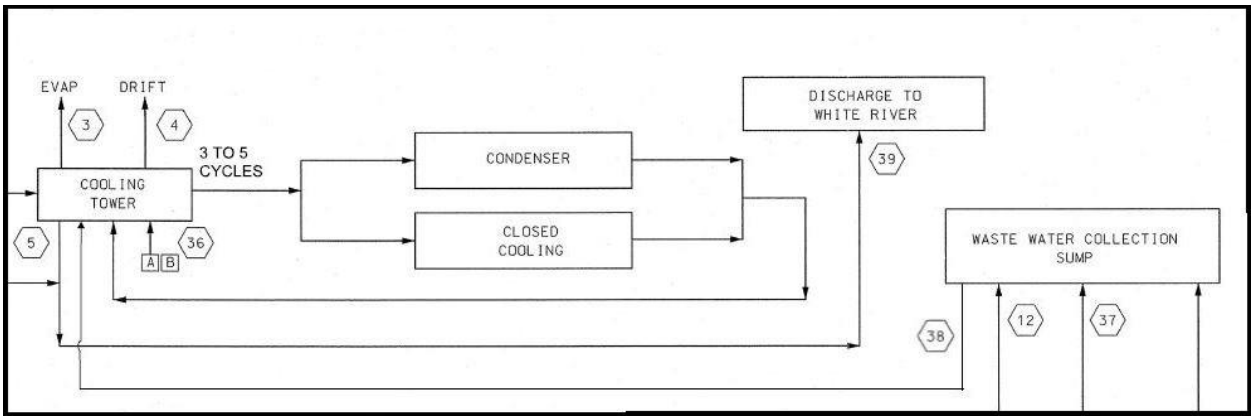

Figure 1. A portion of the Process Flow Diagram Water Balance Sheet 1 showing transfer from the waste water collection sump to the cooling tower.

The Waste Water Collection Sump receives wastewater from the oil separator and the "water treatment building sump," which consists of wastes from filter backwash, the zeolite softener, and the reverse osmosis reject. Since the water passing through the filters, zeolite softener, and reverse osmosis originates in the on-site production wells, it also has arsenic and mercury. Those contaminants are concentrated by those processes, and they are particularly concentrated in the reverse osmosis reject. Therefore, the addition of the wastewater from the Waste Water Collection Sump to the cooling tower is adding Priority Pollutants from 40 CFR 423.13(d)(1) Appendix A into the cooling tower blowdown. (see Attachment #3)

[20] IDEM (Feb 17, 2023). Public Notice no. 20230217-IN0004693-D, Draft NPDES Permit. Pdf page 73 (page 6 of the IDEM Factsheet)
[21] IDEM (Feb 17, 2023). Public Notice No. 20230217 – IN0004693 – D. pdf page 73 (page 6 of the IDEM Factsheet).

For all of these reasons, IDEM should deny AES' request for a renewed waiver from the requirements of 40 CFR 423.13(d)(1) given the documented presence and increased concentration of Priority Pollutants in the cooling tower blowdown.

Mercury discharge should be stopped sooner

The draft permit adds new discharge limits for mercury in Table 1. HEC supports the addition of this new limit. It is justified by the documented presence of mercury in the effluent from Eagle Valley in concentrations exceeding Indiana's Water Quality Criterion of 12 ng/l and by the fact that the discharge enters a river segment which is impaired for mercury.[22] We also support the requirement to use EPA Method 1631E to monitor for mercury, since it has an adequately sensitive limit of detection at 0.2 ng/l.[23]

However, the draft permit allows too much time for AES to come into compliance with the mercury effluent limit. It states, "The permittee has a 3-year schedule of compliance as outlined in Part I.G in which to meet the final effluent limitations for Mercury"[24]. The schedule of compliance at Part I. G states, "The new effluent limits for Mercury are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date."[25]. There does not appear to be any incentive in the permit for AES to find a way to meet the limit at an earlier date, so the draft permit would allow three additional years of excess mercury in the discharge from Eagle Valley.

The excess mercury discharge to the White River has already gone on for several years, ever since the production wells went into operation in 2018[26]. With the exception of a period when the power plant was not operating, the wells have been sending the mercury-laced groundwater into the White River. HEC requests that IDEM require faster compliance to stop the mercury discharge sooner.

Proper disposal of internal waste water could help with mercury and other discharges

There are already water purification processes in the Eagle Valley Generating Station that may be helpful for reducing the discharge of heavy metals. According to the Water Balance diagram, the on-site well water is processed through filters, a water softener, and reverse osmosis. It is possible the mercury and other contaminants in the water are being removed by

[22] IDEM (Feb 17, 2023). Public Notice no. 20230217-IN0004693-D, Draft NPDES Permit. Pdf page 75 (page 8 of the IDEM Factsheet)
[23] IDEM (Feb 17, 2023). Public Notice no. 20230217-IN0004693-D, Draft NPDES Permit. Pdf page 10 (page 7 of the Draft permit)
[24] IDEM (Feb 17, 2023). Public Notice No. 20230217 – IN0004693 – D. pdf page 9 (page 6 of the draft permit).
[25] IDEM (Feb 17, 2023). Public Notice No. 20230217 – IN0004693 – D. pdf page 50 (page 47 of the draft permit).
[26] Verbal communication with AES staff.

one or more of these processes. Testing the water before and after each of these internal processes could identify a process that captures contaminants.

Currently the waste from those purification steps is being sent to the cooling tower and from there the waste is discharged to the White River through Outfall 003. Proper disposal of the waste water, instead of sending it to the cooling tower, could remove mercury and other contaminants from the Eagle Valley discharge.

The Draft NPDES Permit Enables Violation of the CCR Rule

The draft NPDES permit states that "issuance of this permit . . . does not authorize . . . any infringement of federal, state, or local laws or regulations." See draft NPDES permit at pdf 54. Yet, as written, that is precisely what the draft NPDES permit does.

The federal CCR Rule requires selection of a remedy once groundwater contamination has been identified. AES monitored groundwater at Eagle Valley, according to the CCR Rule requirements, and found coal ash constituents had been released into the groundwater at concentrations exceeding standards. That finding was first documented on January 14, 2019, when AES placed the following notice in its operating record:

> Ponds A, B, and C [40 C.F.R § 257.95(g)]
> Pursuant to 40 C.F.R. § 257.95(g), on January 14, 2019, the following Appendix IV constituents were detected at levels above the applicable groundwater protection standards during assessment monitoring at the above-referenced CCR units:
> • Arsenic
> • Lithium
> • Molybdenum[27]

Each of AES' Groundwater Monitoring and Corrective Action Reports since then have continued to note the groundwater exceedances. The most recent report states:

> "At the end of the 2022 reporting period, it was determined that the following Appendix IV constituents were at statistically significant levels (SSLs) above the associated groundwater protection standards (GWPS) pursuant to § 257.95(g)1. The SSLs are as follows:
> Arsenic
> Shallow: MW-2S, MW-11S
> Lithium
> Shallow: MW-1S, MW-2S, MW-6S, MW-10S, MW-11S, MW-12S

[27] Indianapolis Power and Light (Jan 14, 2019). Notice of Groundwater Protection Standard Exceedance. https://www.aesindiana.com/sites/default/files/2022-07/IPL-EV-AP-SSL-notification.pdf

Intermediate: MW-1I, MW-2I, MW-6I, MW-11I
Deep: MW-1D, MW-2D, MW-6D, MW-11D
Molybdenum
Intermediate: MW-6I, MW-11I
Deep: MW-1D, MW-6D, MW-11D"[28]

After documenting the releases to groundwater, AES initiated an assessment of corrective measures, as required by the federal CCR Rule. Two of the three alternatives explored in the Corrective Measures Assessment would rely on controlling the contaminant plume in the groundwater by extracting it via the three production wells, the same wells that send water into the generating station for process and cooling water. The Assessment refers to this as "hydraulic containment" and describes it in Alternative 1 this way:

> Arsenic, lithium, and molybdenum detected at the boundary of the unit [ash pond system] at concentrations above the GWPS [Groundwater Protection Standards] would be addressed with hydraulic containment (HC) through groundwater pumping of the existing production wells associated with the Eagle Valley Combined Cycle Gas Turbine Natural Gas Plant to hydraulically control the migration of those constituents downgradient. Production well effluent would be treated ex-situ, likely with an ion exchange or a reverse osmosis (RO) treatment system. The treatment system would have ongoing operation and maintenance and would generate a secondary waste stream – including but not limited to the regeneration/replacement of the ion exchange media or accumulation of reject water from the RO system. Verification that the effluent could be discharged under the current NPDES permit or application for and approval of a NPDES permit modification may be required.[29]

The second alternative, "Alternative 2", contemplated by the Corrective Measures Assessment also includes "hydraulic containment" but without the ex-situ treatment of the water. It would control the plume of coal ash constituents in the groundwater by withdrawing the groundwater via the production wells, using it in the generating station, and discharging it to the White River without treatment. Instead of "pump and treat," which could be a short-hand for Alternative 1, Alternative 2 could be called "pump and dump." The draft NPDES permit supports Alternative 2 and, in fact, enables AES to choose Alternative 2.

Alternative 2 violates the CCR Rule's requirements for corrective measures, which mandate that once coal ash constituents are found in the groundwater above the Groundwater

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[28] ATC Group Services (Jan 30, 2023). 2022 CCR Annual Groundwater Monitoring and Corrective Action Report. https://www.aesindiana.com/sites/default/files/2023-03/AES-Eagle-Valley-2022-Annual-GWMCA-Report-1-30-2023-Final-Revised-2-28-2023_RFD.pdf

[29] Haley and Aldrich (Oct 2019). Report of Corrective Measures Assessment, Eagle Valley Generating Station, Martinsville, Indiana. Pdf page 17 (report page 12). https://www.aesindiana.com/sites/default/files/2021-02/IPL-EV-CMA-Final.pdf

Protection Standards, then "the owner or operator must initiate an assessment of corrective measures *to prevent further releases*." 40 CFR 257.96(a) (emphasis added). Despite the plainly stated objective of this provision, ----i.e., "to **prevent further releases"** of the coal ash constituents –the draft NPDES permit allows AES to increase releases. Under the permit, AES is allowed to discharge coal ash constituents to the White River thereby allowing a release of those constituents in violation of the CCR Rule.

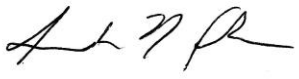
Alternative 2 in the Eagle Valley Corrective Measures Assessment would also violate the federal CCR Rule when it comes to selection of a groundwater remedy. In 40 CFR 257.97(b)(3), the Rule states that the selected remedy must:

> "Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment;"

By enabling Alternative 2, the draft NPDES permit if approved would violate this provision by allowing the release of coal ash constituents into the White River, which is without doubt a release "into the environment." Thus, by allowing water from the production wells at Eagle Valley to be released untreated (or with treatment wastes added back to the discharge) into the White River, the draft NPDES permit would enable AES to select Alternative 2 in its Corrective Measures Assessment and that Alternative plainly violates the CCR Rule.

On behalf of the Hoosier Environmental Council, I appreciate the opportunity to comment on the draft NPDES permit for Eagle Valley and respectfully request that IDEM consider and address the concerns HEC has raised before issuing the final permit.

Sincerely,



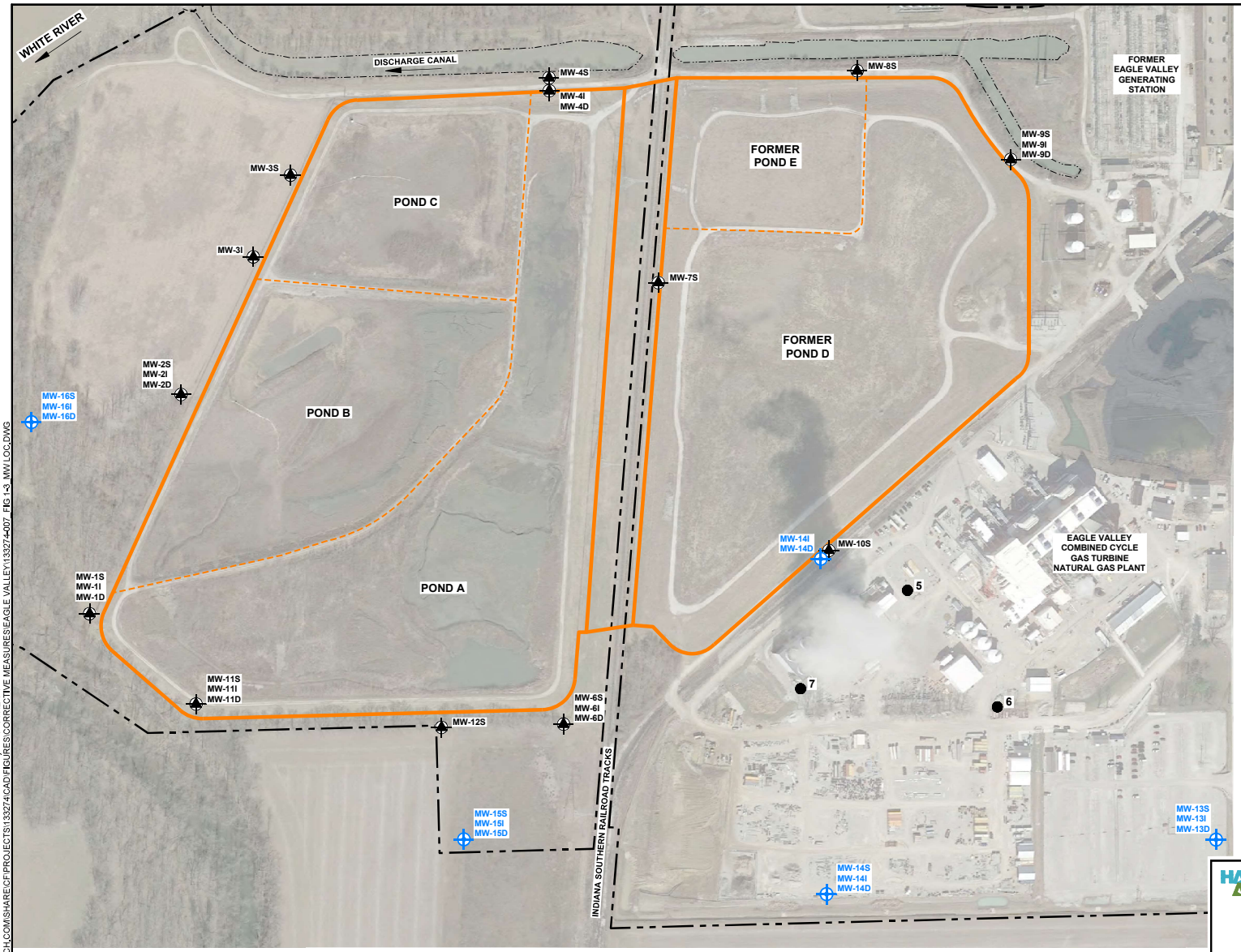
Indra Frank
Director of Environmental Health and Water Policy
ifrank@hecweb.org

TABLE 6
Groundwater Analytical Results for Sampling Event No. 1
Eagle Valley Station
Martinsville, Indiana

		Upgradient/Background Wells								Downgradient Wells																			QA/QC	
Constituent	**Units**	MW-4S	MW-4I	MW-4D	MW-8S	MW-9S	MW-9I	MW-9D	MW-10S	MW-1S	MW-1I	DUP-1 (MW-1I)	MW-1D	MW-2S	MW-2I	MW-2D	MW-3S	MW-3I	MW-6S	MW-6I	MW-6D	MW-7S	MW-11S	MW-11I	MW-11D	MW-12S	DUP-2 (MW-12S)	FIELD BLANK-1	FIELD BLANK-2
Lab I.D. No.		50143418009	50143418010	50143418011	50143418016	50143418017	50143418018	50143418019	50143418020	50143418001	50143418002	50143418025	50143418003	50143418004	50143418005	50143418006	50143418007	50143418008	50143418012	50143418013	50143418014	50143418015	50143418021	50143418022	50143418023	50143418024	50143418026	50143418027	50143418028
Date Sampled:		4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/21/2019	4/21/2019	4/21/2019	4/21/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/21/2016
Alkalinity, Total as CaCO3	mg/L	239	259	215	267	362	210	244	285	370	200	200	177	178	166	221	341	192	421	245	216	442	214	204	186	209	211	<2.0	<2.0
Aluminum, Dissolved	ug/L	<200	<200	<200	<200	<200	<200	240	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	873	<200	<200	<200	<200
Antimony	ug/L	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Antimony, Dissolved	ug/L	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Arsenic	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	16	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	146	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Arsenic, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	14	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	129	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Barium	ug/L	41.0	78.6	75.5	77.7	68.5	73.1	96.8	78.3	74.8	52.8	51.8	77.7	115.0	76.3	71.7	92.6	73.9	190.0	64.0	71.6	164.0	107.0	72.6	90.1	123.0	103.0	<10.0	<10.0
Barium, Dissolved	ug/L	40.0	60.9	49.8	73.4	59.8	69.1	92.5	77.6	70.0	47.2	46.7	77.2	113.0	72.8	62.9	90.7	69.6	96.0	60.8	60.3	153.0	74.0	63.5	72.2	79.8	79.2	<10.0	<10.0
Beryllium	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Beryllium, Dissolved	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Boron	ug/L	130	236	194	199	226	168	146	6.920	3,860	3,800	3,680	2,560	1,330	1,460	1,020	1,660	931	2,840	3,430	5,990	7,920	7,700	2,330	3,440	1,820	1,820	<100	<100
Boron, Dissolved	ug/L	139	241	193	194	231	172	150	6.940	3,920	3,790	3,690	2,620	1,340	1,480	1,000	1,690	968	2,810	3,420	5,920	7,910	7,750	2,270	3,340	1,690	1,690	<100	<100
Cadmium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Cadmium, Dissolved	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Calcium	ug/L	80,100	90,400	75,400	95,500	129,000	76,000	89,600	139,000	215,000	85,400	80,900	83,900	71,700	73,200	83,200	123,000	81,200	163,000	121,000	141,000	223,000	117,000	108,000	101,000	111,000	98,800	<1000	<1000
Calcium, Dissolved	ug/L	80,500	87,700	70,300	94,700	127,000	73,400	88,100	139,000	217,000	82,300	79,600	86,000	70,300	72,700	81,500	125,000	82,600	160,000	118,000	139,000	213,000	110,000	101,000	94,900	91,700	91,700	<1000	<1000
Chloride	mg/L	71	97	110	53	20	89	82	140	85	158	161	166	144	163	146	91	138	61	262	243	47	160	149	147	175	175	<1.0	<1.0
Chromium (III+VI)	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chromium, Diss, (III+VI)	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cobalt	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cobalt, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Copper, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cyanide	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoride	mg/L	0.29	0.35	0.21	0.27	0.16	0.41	0.19	0.39	0.33	0.42	0.39	0.44	0.42	0.46	0.42	0.26	0.33	0.24	0.34	0.20	0.16	0.32	0.39	0.26	0.58	0.56	<0.10	<0.10
Iron, Dissolved	ug/L	<100	561	1,410	200	<100	<100	683	<100	242	<100	<100	604	<100	<100	985	<100	<100	<100	<100	105	134	<100	196	2,360	243	164	<100	<100
Lead	ug/L	<10.0	<10.0	11	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	13	<10.0	<10.0	18	<10.0	<10.0	<10.0	<10.0
Lead, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Lithium	ug/L	<20.0	25	25	<20.0	<20.0	20	<20.0	124	100	100	94	108	86	126	115	90	86	76	148	155	126	115	120	102	95	94	<20.0	<20.0
Lithium, Dissolved	ug/L	<20.0	26	21	<20.0	<20.0	<20.0	<20.0	120	104	99	81	106	85	128	116	90	87	73	146	154	118	107	110	89	79	79	<20.0	<20.0
Magnesium, Dissolved	ug/L	21,600	25,400	22,300	24,700	28,100	22,900	21,600	25,600	41,000	26,500	26,100	26,300	22,100	24,300	24,500	31,200	27,100	36,400	28,000	29,200	46,100	18,900	27,400	22,600	23,000	23,100	<1000	<1000
Manganese, Dissolved	ug/L	<10.0	182	226	15	<10.0	232	176	<10.0	22	196	195	380	481	52	215	24	<10.0	32	50	542	1,020	<10.0	231	392	66	67	<10.0	<10.0
Mercury	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Mercury, Dissolved	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Molybdenum	ug/L	<10.0	20	31	<10.0	<10.0	13	<10.0	155	33	126	125	108	69	102	103	55	71	94	201	184	130	181	179	202	118	122	<10.0	<10.0
Molybdenum, Dissolved	ug/L	<10.0	20	33	<10.0	<10.0	13	<10.0	151	32	123	128	111	72	108	99	54	74	91	199	181	124	185	176	193	118	117	<10.0	<10.0
Nickel, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Potassium, Dissolved	ug/L	3,200	3,480	4,370	1,750	<1000	4,010	3,140	11,700	8,060	7,650	7,680	9,220	6,670	8,330	8,380	8,350	8,070	6,670	11,600	8,970	8,380	12,200	8,220	7,520	9,020	8,990	<1000	<1000
Selenium	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	17	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	16	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Selenium, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	19	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	13	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Silver, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Sodium, Dissolved	ug/L	49,600	73,400	87,000	34,600	15,900	64,400	54,900	136,000	67,600	104,000	107,000	98,300	103,000	113,000	108,000	75,700	88,700	47,400	149,000	139,000	55,400	116,000	114,000	112,000	115,000	114,000	<1000	<1000
Specific Conductance	umhos/cm	761	902	918	765	791	838	796	1,420	1,400	1,090	1,110	1,110	1,040	1,110	1,050	1,070	1,000	1,120	1,450	1,510	1,360	1,220	1,240	1,170	1,180	1,180	1.2	1.2
Sulfate	mg/L	58	98	118	68	75	94	73	401	430	145	168	195	177	202	171	158	164	161	207	334	513	210	321	215	174	183	<5.0	<5.0
Sulfide	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Thallium, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Total Dissolved Solids	mg/L	584	531	487	438	494	442	463	926	999	632	637	408	649	577	637	3,240	680	735	878	949	975	762	763	715	702	691	<10.0	<10.0
Zinc, Dissolved	ug/L	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Radium-226	pCi/L	0.000 ± 0.326	0.802 ± 0.593	0.430 ± 0.490	0.410 ± 0.427	0.0597 ± 0.567	0.215 ± 0.327	0.150 ± 0.343	0.540 ± 0.614	0.550 ± 0.498	0.621 ± 0.521	0.194 ± 0.595	1.28 ± 0.751 (0.931) C:NA	0.339 ± 0.517	0.206 ± 0.486	0.877 ± 0.487	0.0261 ± 0.484	0.443 ± 0.483	0.540 ± 0.462	0.547 ± 0.468	0.858 ± 0.543	0.606 ± 0.443	0.198 ± 0.598	0.888 ± 0.693	1.53 ± 0.831 (0.959) C:NA	1.49 ± 0.924 (0.911) C:NA	0.552 ± 0.514	0.086 ± 0.394	0.082 ± 0.376
Radium-228	pCi/L	0.313 ± 0.377	0.129 ± 0.256	0.622 ± 0.353	0.219 ± 0.296	0.461 ± 0.377	0.620 ± 0.347	0.406 ± 0.297	0.501 ± 0.320	0.112 ± 0.300	0.236 ± 0.294	0.0259 ± 0.337	1.26 ± 0.514 (0.859)	0.461 ± 0.361	0.341 ± 0.329	0.634 ± 0.364	0.290 ± 0.299	0.450 ± 0.310	0.254 ± 0.296	0.392 ± 0.307	0.434 ± 0.324	0.569 ± 0.358	3.13 ± 0.432 (0.656)	0.753 ± 0.407	1.04 ± 0.388 (0.580)	0.956 ± 0.392	0.347 ± 0.338	0.266 ± 0.313	0.290 ± 0.404
Total Radium (calc.)	pCi/L	0.313 ± 0.703 (1.32)	0.931 ± 0.849 (1.37)	1.05 ± 0.843 (1.42)	0.629 ± 0.723 (1.27)	0.521 ± 0.944 (1.75)	0.835 ± 0.674 (1.16)	0.556 ± 0.640	1.04 ± 0.934 (1.57)	0.662 ± 0.798 (1.40)	0.857 ± 0.815 (1.37)	0.220 ± 0.932 (1.75)	2.54 ± 1.27 (1.79)	0.800 ± 0.878 (1.61)	0.547 ± 0.815 (1.58)	1.51 ± 0.851 (0.853)	0.316 ± 0.783 (1.58)	0.893 ± 0.793 (1.35)	0.794 ± 0.758 (1.25)	0.939 ± 0.775 (1.24)	1.29 ± 0.867 (1.25)	1.18 ± 0.801 (1.17)	0.932 ± 1.03 (1.65)	1.64 ± 1.10 (1.70)	2.57 ± 1.22 (1.54)	2.45 ± 1.32 (1.53)	0.899 ± 0.852 (1.37)	0.180 ± 0.707 (1.46)	0.208 ± 0.780 (1.63)
pH at 25 Degrees C	Std. Units	7.5	7.5	7.6	7.3	7.1	7.6	7.4	7.2	7.1	7.7	7.7	7.6	7.7	7.8	7.6	7.2	7.6	7.0	7.4	7.5	7.1	7.5	7.5	7.5	7.5	7.5	7.3	6.6

TABLE 7
Groundwater Analytical Results for Sampling Event No. 2
Eagle Valley Station
Martinsville, Indiana

		Upgradient/Background Wells							Downgradient Wells																			QA/QC	
Constituent	**Units**	MW-4S	MW-4I	MW-4D	MW-8S	MW-9S	MW-9I	MW-9D	MW-1S	MW-1I	DUP-1 (MW-1I)	MW-1D	MW-2S	MW-2I	MW-2D	MW-3S	MW-3I	MW-6S	MW-6I	MW-6D	MW-7S	MW-10S	MW-11S	MW-11I	MW-11D	MW-12S	DUP-2 (MW-12S)	FIELD BLANK-1	FIELD BLANK-2
Lab I.D. No.		50143418009	50143418010	50143418011	50143418016	50143418017	50143418018	50143418019	50143418001	50143418002	50143418025	50143418003	50143418004	50143418005	50143418006	50143418007	50143418008	50143418012	50143418013	50143418014	50143418015	50143418020	50143418021	50143418022	50143418023	50143418024	50143418026	50143418027	50143418028
Date Sampled:		4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/21/2019	4/21/2019	4/21/2019	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/19/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/21/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/20/2016	4/21/2016
Alkalinity, Total as CaCO3	mg/L	243	281	218	267	328	208	240	258	197	206	167	176	550	223	270	179	418	221	211	397	296	186	202	184	222	421	<2.0	<2.0
Aluminum, Dissolved	ug/L	<200	<200	<200	<200	<200	<200	<200	472	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Antimony	ug/L	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Antimony, Dissolved	ug/L	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Arsenic	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	100	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Arsenic, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	10.8	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	107	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Barium	ug/L	33.8	58.6	46.5	74.7	73	67.5	86	73.3	50.4	65.7	74.5	117	61.9	62.2	86.9	72.2	130	59.4	58.9	145.0	76.6	72.1	68.4	76.5	81.1	106	<10.0	<10.0
Barium, Dissolved	ug/L	35.7	56.2	49.2	70.3	55	68.9	84.1	77.1	50.1	63.3	72.4	114	59.5	60.2	85.6	67.6	85.7	62.4	59.5	131.0	76.5	74.5	65.9	65	75.3	87.3	<10.0	<10.0
Beryllium	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Beryllium, Dissolved	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Boron	ug/L	108	239	191	239	211	173	134	3,280	3,680	176	2,910	1,530	1,150	1,300	1,390	1,190	2,800	3,540	5,890	6,560	7,200	8,370	2,540	3,890	1,720	2,940	<100	<100
Boron, Dissolved	ug/L	111	231	189	221	205	172	132	3,210	3,560	166	2,820	1,450	1,110	1,230	1,360	1,140	2,770	3,470	5,810	6,050	6,950	8,200	2,430	3,780	1,640	2,800	<100	<100
Cadmium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Cadmium, Dissolved	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Calcium	ug/L	77,800	88,200	69,400	93,500	118,000	72,500	82,100	121,000	81,500	70,300	83,800	71,100	64,000	81,700	103,000	83,800	152,000	121,000	133,000	192,000	135,000	102,000	107,000	98,400	94,500	159,000	<1000	<1000
Calcium, Dissolved	ug/L	77,300	84,900	68,300	87,500	111,000	75,200	79,500	120,000	79,000	69,300	81,600	67,900	61,000	80,900	102,000	78,300	148,000	119,000	133,000	174,000	132,000	103,000	106,000	96,900	91,400	152,000	<1000	<1000
Chloride	mg/L	73.8	96.8	108	64.8	24.8	87.4	79.7	146	160	89.9	159	148	140	146	129	145	58.3	319	239	78	144	161	152	149	177	59.2	<1.0	<1.0
Chromium (III+VI)	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Chromium, Diss, (III+VI)	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cobalt	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cobalt, Dissolved	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Copper, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cyanide	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoride	mg/L	0.28	0.31	0.19	0.28	0.15	0.38	0.17	0.52	0.42	0.39	0.44	0.4	0.45	0.41	0.28	0.29	0.23	0.32	0.18	0.17	0.36	0.34	0.39	0.23	0.57	0.22	<0.10	<0.10
Iron, Dissolved	ug/L	<100	429	1800	<100	<100	<100	141	1,090	285	<100	567	<100	<100	958	<100	<100	<100	<100	<100	<100	<100	<100	<100	1230	<100	<100	<100	<100
Lead	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Lead, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Lithium	ug/L	<20.0	20.9	<20.0	<20.0	<20.0	<20.0	<20.0	110	96.2	<20.0	99	79.6	116	110	90.5	67.1	70.9	146	134	162	110	119	124	99.6	91.7	75	<20.0	<20.0
Lithium, Dissolved	ug/L	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	102	87.8	<20.0	88.2	68.5	104	101	83.1	57	64.2	135	129	145	106	112	113	89	80	67	<20.0	<20.0
Magnesium, Dissolved	ug/L	22,500	25,900	22,300	24,900	25,900	23,800	19,800	28,000	25,600	21,600	25,600	21,500	20,700	25,200	29,500	26,400	34,500	29,000	29,000	38,900	24,900	18,000	28,000	22,100	23,200	34,700	<1000	<1000
Manganese, Dissolved	ug/L	14.5	190	231	<10.0	<10.0	239	148	69.7	217	215	383	461	55.4	213	108	<10.0	<10.0	53.4	541	833	<10.0	<10.0	261	340	43.4	<10.0	<10.0	<10.0
Mercury	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Mercury, Dissolved	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Molybdenum	ug/L	<10.0	18.8	29	<10.0	<10.0	13.5	<10.0	71.7	126	13.6	118	72.2	115	107	68.6	66.3	101	198	185	195	174	218	180	200	138	106	<10.0	<10.0
Molybdenum, Dissolved	ug/L	<10.0	18.9	29.5	<10.0	<10.0	15.4	<10.0	71.2	122	13.3	114	72.2	112	103	67.2	65.9	101	194	180	188	168	212	172	192	132	98.7	<10.0	<10.0
Nickel, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Potassium, Dissolved	ug/L	3,640	3,280	3,790	2,260	1,130	4,200	2,890	9,180	7,820	3,800	8,800	6,830	7,540	8,380	8,510	7,010	6,900	11,800	8,540	11,200	11,700	11,500	8,140	6,930	8,250	6,870	<1000	<1000
Selenium	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	12.4	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	15.5	<10.0	<10.0
Selenium, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	13.5	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	17.4	<10.0	<10.0
Silver, Dissolved	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Sodium, Dissolved	ug/L	50,400	73,400	81,400	46,900	19,200	68,500	52,600	101,000	106,000	63,200	101,000	102,000	109,000	109,000	88,100	93,500	49,000	164,000	141,000	68,600	142,000	109,000	120,000	110,000	118,000	49,200	<1000	<1000
Specific Conductance	umhos/cm	773	908	904	812	778	787	803	1,290	1,110	850	1,000	976	1,170	1,140	1,150	1,020	1,160	1,610	1,540	1,390	1,480	1,180	1,280	1,110	1,200	1,260	1.4	1.5
Sulfate	mg/L	51	63.1	95.8	67	56.7	70	45.3	206	163	60.8	188	124	138	143	145	148	106	143	238	245	288	175	259	207	107	114	<5.0	<5.0
Sulfide	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Thallium, Dissolved	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Dissolved Solids	mg/L	403	491	478	452	435	437	433	756	627	428	654	544	539	647	632	570	670	900	906	874	369	711	809	732	660	669	<10.0	<10.0
Zinc, Dissolved	ug/L	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Radium-226	pCi/L	0.000 ± 0.377	0.347 ± 0.410	0.832 ± 0.543	0.199 ± 0.568	0.222 ± 0.385	0.130 ± 0.402	0.555 ± 0.435	0.472 ± 0.548	0.133 ± 0.488	0.167 ± 0.361	0.270 ± 0.459	0.560 ± 0.517	0.779 ± 0.644	1.08 ± 0.631 (0.725)	0.0368 ± 0.525	0.747 ± 0.556	0.157 ± 0.358	0.798 ± 0.594	0.340 ± 0.443	0.938 ± 0.593	0.561 ± 0.481	0.121 ± 0.276	1.36 ± 0.600 (0.435) C:NA	0.459 ± 0.389	0.643 ± 0.505	0.167 ± 0.361	0.189 ± 0.288	0.0621 ± 0.283
Radium-228	pCi/L	0.171 ± 0.352	0.377 ± 0.368	0.756 ± 0.401	0.819 ± 0.459	0.885 ± 0.423	0.496 ± 0.347	0.649 ± 0.362	0.160 ± 0.327	0.465 ± 0.374	0.473 ± 0.376	0.905 ± 0.455	0.266 ± 0.369	0.853 ± 0.407	0.695 ± 0.441	0.619 ± 0.378	0.335 ± 0.428	1.11 ± 0.461 (0.738)	1.22 ± 0.467 (0.729)	1.89 ± 0.572 (0.710)	1.20 ± 0.538 (0.900)	1.45 ± 0.519 (0.767)	0.223 ± 0.377	0.615 ± 0.444	0.834 ± 0.450	0.179 ± 0.448 (1.01)	0.423 ± 0.376	0.194 ± 0.377	-0.0499 ± 0.369
Total Radium (calc.)	pCi/L	0.171 ± 0.729 (1.59)	0.724 ± 0.778 (1.40)	1.59 ± 0.944 (1.28)	1.02 ± 1.03 (1.82)	1.11 ± 0.808 (1.41)	0.626 ± 0.749 (1.45)	1.20 ± 0.797 (1.17)	0.312 ± 0.875 (1.65)	0.598 ± 0.862 (1.68)	0.590 ± 0.737 (1.43)	1.18 ± 0.914 (1.62)	0.826 ± 0.886 (1.53)	1.63 ± 1.05 (1.62)	1.78 ± 1.07 (1.56)	0.0477 ± 0.903 (1.87)	1.08 ± 0.984 (1.64)	1.27 ± 0.819 (1.32)	2.02 ± 1.06 (1.51)	2.23 ± 1.02 (1.44)	2.14 ± 1.13 (1.57)	2.01 ± 1.000 (1.42)	0.344 ± 0.653 (1.27)	1.98 ± 1.04 (1.30)	1.29 ± 0.839 (1.28)	0.772 ± 0.953 (1.71)	0.590 ± 0.737 (1.43)	0.383 ± 0.665	0.0122 ± 0.652 (1.33)
pH at 25 Degrees C	Std. Units	7.5	7.4	7.6	7.4	7.2	7.7	7.6	7.2	7.6	7.6	7.7	7.7	7.8	7.7	7.4	7.6	7	7.5	7.5	7.2	7.4	7.5	7.5	7.5	7.5	7	7.7	7.2



LEGEND

- APPROXIMATE LIMITS OF PROPERTY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- MW-3 — CCR MONITORING WELL
- MW-15 — NATURE AND EXTENT MONITORING WELL
- 5 — PRODUCTION WELL

NOTES

1. AERIAL IMAGE FROM GOOGLE EARTH, DATED 03/02/2018.
2. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
3. MONITORING WELL LOCATIONS OBTAINED FROM FIGURE 2 2018 CCR ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT (ATC, JANUARY 2019).
4. WELL DESIGNATION:
   - S = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - D = DEEP WELL
5. CCR = COAL COMBUSTION RESIDUALS

0 300 600
SCALE IN FEET

HALEY ALDRICH

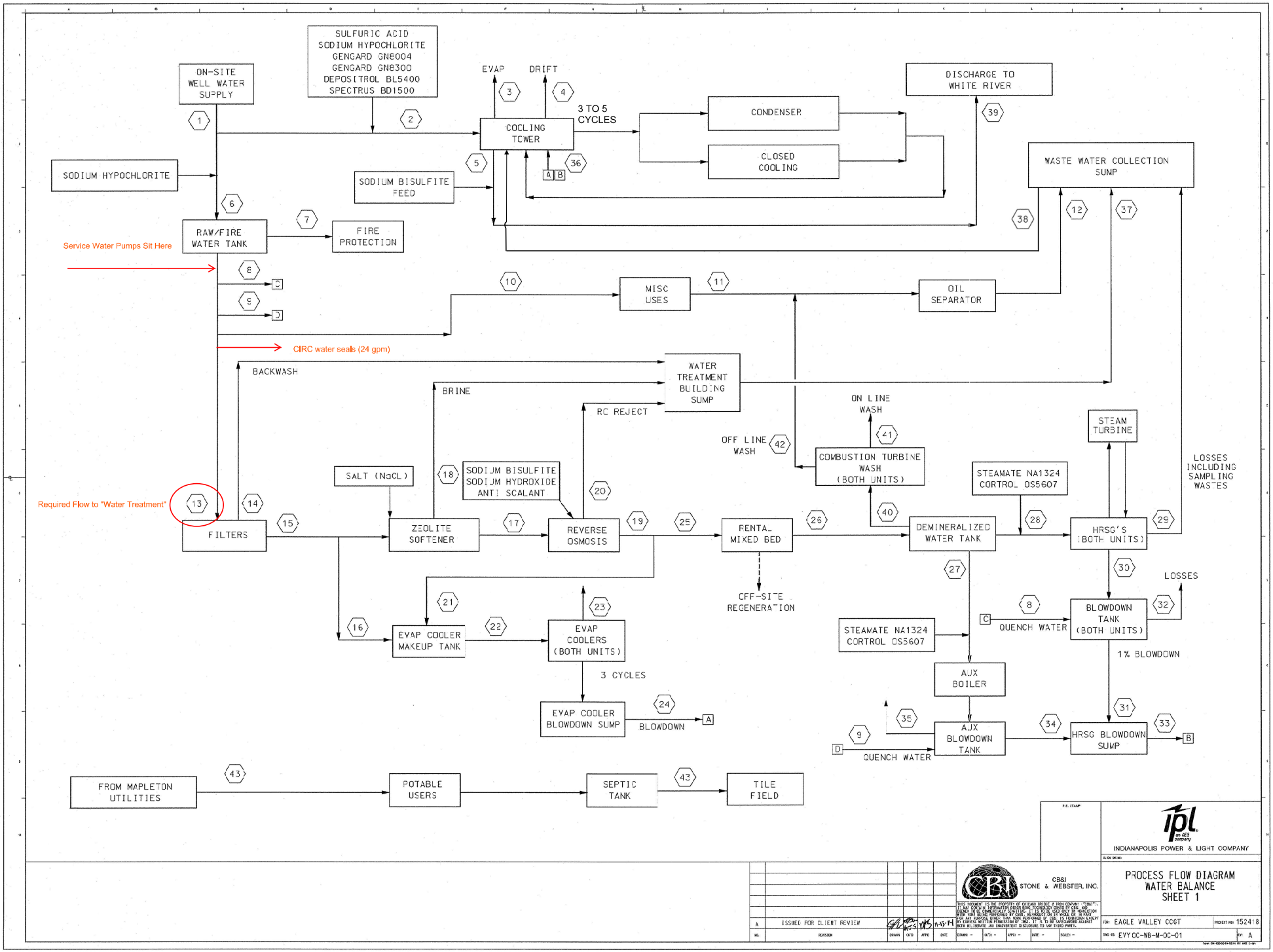
CORRECTIVE MEASURES ASSESSMENT
ASH POND SYSTEM
EAGLE VALLEY GENERATING STATION
MARTINSVILLE, INDIANA

CCR AND N&E MONITORING WELL LOCATIONS

SCALE: AS SHOWN
OCTOBER 2019

FIGURE 1-3

VARI KATALIN Saved: 10/10/2019 12:27 PM Layout: FIGURE 1-3
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\EAGLE VALLEY\133274-007_FIG 1-3_MW LOC.DWG


SULFURIC ACID
SODIUM HYPOCHLORITE
GENGARD GN6004
GENGARD GN8300
DEPOSITROL BL5400
SPECTRUS BD1500
ON-SITE WELL WATER SUPPLY
EVAP
DRIFT
3 TO 5 CYCLES
DISCHARGE TO WHITE RIVER
CONDENSER
COOLING TOWER
CLOSED COOLING
WASTE WATER COLLECTION SUMP
SODIUM HYPOCHLORITE
SODIUM BISULFITE FEED
RAW/FIRE WATER TANK
FIRE PROTECTION
Service Water Pumps Sit Here
MISC USES
OIL SEPARATOR
CIRC water seals (24 gpm)
BACKWASH
BRINE
WATER TREATMENT BUILDING SUMP
RC REJECT
ON LINE WASH
OFF LINE WASH
COMBUSTION TURBINE WASH (BOTH UNITS)
STEAM TURBINE
LOSSES INCLUDING SAMPLING WASTES
STEAMATE NA1324 CORTROL OS5607
SALT (NaCL)
SODIUM BISULFITE SODIUM HYDROXIDE ANTI SCALANT
Required Flow to "Water Treatment"
FILTERS
ZEOLITE SOFTENER
REVERSE OSMOSIS
RENTAL MIXED BED
DEMINERALIZED WATER TANK
HRSG'S (BOTH UNITS)
OFF-SITE REGENERATION
LOSSES
EVAP COOLER MAKEUP TANK
EVAP COOLERS (BOTH UNITS)
QUENCH WATER
BLOWDOWN TANK (BOTH UNITS)
1% BLOWDOWN
STEAMATE NA1324 CORTROL OS5607
AUX BOILER
3 CYCLES
EVAP COOLER BLOWDOWN SUMP
BLOWDOWN
AUX BLOWDOWN TANK
HRSG BLOWDOWN SUMP
QUENCH WATER
FROM MAPLETON UTILITIES
POTABLE USERS
SEPTIC TANK
TILE FIELD
INDIANAPOLIS POWER & LIGHT COMPANY
CB&I STONE & WEBSTER, INC.
PROCESS FLOW DIAGRAM
WATER BALANCE
SHEET 1
FOR: EAGLE VALLEY CCGT
PROJECT NO: 152418
DWG NO: EVY-CC-WB-M-OC-01
REV: A
A
ISSUED FOR CLIENT REVIEW
11-13-14