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A R K A N S A S
Department of Environmental Quality

MAR 1 1 2020

CERTIFIED MAIL: RETURN RECEIPT REQUESTED 9489 0090 0027 6060 6269 72

Division of Water Resources
Dept. of Environmental & Conservation
711 R.S. Glass Blvd.
Nashville, TN 37216

RE: Big River Steel LLC -
NPDES Permit Number: AR0052582 – AFIN: 47-00991

Dear Sir:

This letter constitutes notice of the Department's draft permit decision. Enclosed is the public notice, a copy of the draft permit and Fact Sheet which the Arkansas Department of Environmental Quality (ADEQ) has prepared. In accordance with Arkansas Regulations, the enclosed public notice will be published by ADEQ in a newspaper of general circulation of the facility on the above stamped date. Comments must be received at ADEQ prior to the close of the public comment period (i.e., 30 days following the publication date) as shown in the enclosed public notice.

If you have any questions, feel free to contact Terry Liu, P.E. of my staff at (501) 682-682-0653 or by email at Liu@adeq.state.ar.us.

Bryan Leamons

Bryan Leamons, P.E.
Senior Operations Manager
Office of Water Quality

BL:ab

Enclosure

PUBLIC NOTICE OF DRAFT DISCHARGE PERMIT MODIFICATION
PERMIT NUMBER AR0052582, AFIN 47-00991

In accordance with Ark. Code Ann. § 8-4-203(e), the Arkansas Department of Energy and Environment – Division of Environmental Quality (DEQ), Office of Water Quality, gives the following notice:

Big River Steel LLC operates a facility located as follows: 2027 East State Highway 198, Osceola, AR 72370 in Mississippi County. The facility is currently permitted to discharge treated process wastewater from Outfall 001, and stormwater and dust suppression/quenching water runoff from the slag pile from Outfall 002, into the Mississippi River in Segment 6C of the Mississippi River Basin. Big River Steel LLC submitted an application on October 30, 2019, with additional information received November 5, 2019, for the major modification of NPDES Permit No. AR0052582. The application has been reviewed by the DEQ's Office of Water Quality and has received tentative approval subject to the terms of this notice.

Citizens wishing to examine or obtain copies of the permit application, the draft permitting decision, or the Fact Sheet may do so at the DEQ headquarters located at 5301 Northshore Drive, North Little Rock, AR 72118-5317. To request a copy of one or more of the documents, please call (501) 682-0623. For those with Internet access, a copy of the proposed draft permit as well as the publication date may be found on the DEQ's website at: https://www.adeq.state.ar.us/water/permits/drafts_pn.aspx

Comments on the draft major modification will be accepted in accordance with Arkansas Pollution Control and Ecology Commission (APC&EC) Reg. 8.208. DEQ's contact person for submitting written comments on the draft permit or requesting a public hearing on the draft permit, is Terry Liu, P.E., at the above address and telephone number, or by email at Water-Draft-Permit-Comment@adeq.state.ar.us.

The period for submitting comments on the draft permit and for requesting a public hearing shall begin on the date of publication of the public notice, and end at 4:30 P.M. (Central Time) on the 30th day after the publication date. If the last day of the comment period is a Saturday, Sunday, or legal holiday, the public comment period shall expire on the next day that is not a Saturday, Sunday, or legal holiday. For information regarding the actual publication date along with the actual date and time the comment period will end, please contact Terry Liu, P.E. at the above address and telephone number or by email at Water-Draft-Permit-Comment@adeq.state.ar.us. Public notice, comments, and hearings will be conducted in accordance with Regulation 6.104(A)(5) [40 CFR Parts 124.10 through 124.12 by reference] and Regulations 8.207 through 8.210 (Administrative Procedures). All persons, including the permittee, who wish to comment on DEQ's draft permitting decision must submit written comments to DEQ, along with their name and mailing address. A Public Hearing will be held when DEQ finds a significant degree of public interest. After the public comment period, DEQ will issue a final permitting decision. DEQ will notify the applicant and each person who has submitted written comments or requested notice of the final permitting decision. Any interested person who has submitted comments may appeal a final decision by DEQ in accordance with the APC&EC Regulation No. 8.

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

Big River Steel LLC

is authorized to discharge treated process wastewater as well as stormwater and dust suppression/quenching water runoff from slag pile from a facility located as follows: 2027 East State Highway 198, Osceola, AR 72370. From Osceola, travel south on US Highway 61 and turn left onto State Highway 198. The front gate of the facility is on the right approximately two miles east of the intersection of State Highway 198 and US Highway 61 in Mississippi County, Arkansas. The applicant's mailing address is: P.O. Box 707, Osceola, AR 72370.

Latitude: 35° 39' 14.43" N; Longitude: 89° 57' 15.78" W

to receiving waters named:

Outfalls 001 and 002: Mississippi River in Segment 6C of the Mississippi River Basin.

The outfalls are located at the following coordinates:

Outfall 001: Latitude: 35° 39' 5.0" N; Longitude: 89° 54' 47.0" W
Outfall 002: Latitude: 35° 39' 5.0" N; Longitude: 89° 54' 47.1" W

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

Effective Date:	July 1, 2016
Minor Modification Effective Date:	October 14, 2016
Major Modification Effective Date:	
Expiration Date:	June 30, 2021

_____ _____

Robert E. Blanz, Ph.D., P.E. Major Modification Issue Date
Associate Director, Office of Water Quality
Arkansas Department of Environmental Quality

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PART I
PERMIT REQUIREMENTS

SECTION A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated process wastewater from the following sources: chromate reactor, galvanizing lines, pickling lines, skin pass mill, tandem cold mill, contact cooling water systems, and non-contact cooling water systems.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Tier I – permit limits when the average daily production for a calendar month is equal to or less than 11,000,000 lbs/day.*

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lb/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/day	totalizing meter
Total Suspended Solids (TSS)	235.3	610.9	Report	Report	once/week	composite
Oil and Grease (O&G)	78.6	143.9	10.0	15.0	once/week	grab
Chromium (VI)[1]	0.02	0.06	Report[3]	Report[3]	once/week	composite
Chromium, Total Recoverable[1]	0.1	0.3	Report[3]	Report[3]	once/week	composite
Lead, Total Recoverable[1]	0.5	1.6	Report[3]	Report[3]	once/week	composite
Nickel, Total Recoverable[1]	0.08	0.2	Report[3]	Report[3]	once/week	composite
Zinc, Total Recoverable[1]	0.8	2.3	Report[3]	Report[3]	once/week	composite
Naphthalene[1]	0.01	0.03	Report[3]	Report[3]	once/week	grab
Tetrachloroethylene[1]	0.02	0.04	Report[3]	Report[3]	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab
Acute WET Testing[2, 4]	N/A	N/A	Report		once/quarter	24-hr composite
***Pimephales promelas* (Acute)[2]**	N/A	N/A	48-hr Minimum			
Pass/Fail Lethality (48-Hr NOEC) **TEM6C**			Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (48-Hr NOEC) **TOM6C**			Report %		once/quarter	24-hr composite
Coefficient of Variation (48-Hr NOEC) **TQM6C**			Report %		once/quarter	24-hr composite
Pass/Fail Retest 1 (48-Hr NOEC) 22418			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 2 (48-Hr NOEC) 22419			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 3 (48-Hr NOEC) 51444			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
***Daphnia pulex* (Acute)[2]**	N/A	N/A	48-hr Minimum			
Pass/Fail Lethality (48-Hr NOEC) **TEM3D**			Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (48-Hr NOEC) **TOM3D**			Report %		once/quarter	24-hr composite
Coefficient of Variation (48-Hr NOEC) **TQM3D**			Report %		once/quarter	24-hr composite
Pass/Fail Retest 1 (48-Hr NOEC) 22415			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 2 (48-Hr NOEC) 22416			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 3 (48-Hr NOEC) 51443			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite

* See Transition Condition in Part II.9 of this permit.

[1] See Condition No. 7 of Part II (Metals and Other Toxic Compounds Requirements).
[2] See Condition No. 8 of Part II (WET Testing Requirements).
[3] Samples for metals and other toxic compounds shall be reported in units of micrograms per liter (µg/l).

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[4] CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters (reported on a quarterly DMR). This condition applies to *P. promelas* and *D. pulex*.

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after sand filtration and prior to the pipeline to Outfall 001.

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SECTION A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated process wastewater from the following sources: chromate reactor, galvanizing lines, pickling lines, skin pass mill, tandem cold mill, reversing cold mill, contact cooling water systems, and non-contact cooling water systems.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Tier II – permit limits when the average daily production for a calendar month is greater than 11,000,000 lbs/day.*

Effluent Characteristics	Discharge Limitations				Monitoring Requirements	
	Mass (lb/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/day	totalizing meter
Total Suspended Solids (TSS)	585.3	1515.0	Report	Report	once/week	composite
Oil and Grease (O&G)	195.5	356.9	10.0	15.0	once/week	grab
Chromium (VI)[1]	0.07	0.20	Report[3]	Report[3]	once/week	composite
Chromium, Total Recoverable[1]	0.2	0.6	Report[3]	Report[3]	once/week	composite
Lead, Total Recoverable[1]	1.4	4.2	Report[3]	Report[3]	once/week	composite
Nickel, Total Recoverable[1]	0.18	0.53	Report[3]	Report[3]	once/week	composite
Zinc, Total Recoverable[1]	2.0	6.0	Report[3]	Report[3]	once/week	composite
Naphthalene[1]	0.03	0.06	Report[3]	Report[3]	once/week	grab
Tetrachloroethylene[1]	0.04	0.09	Report[3]	Report[3]	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab
Acute WET Testing[2]	N/A	N/A	Report		once/quarter	24-hr composite
***Pimephales promelas* (Acute)[2]**			48-hr Minimum			
Pass/Fail Lethality (48-Hr NOEC) **TEM6C**			Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (48-Hr NOEC) **TOM6C**			Report %		once/quarter	24-hr composite
Coefficient of Variation (48-Hr NOEC) **TQM6C**			Report %		once/quarter	24-hr composite
Pass/Fail Retest 1 (48-Hr NOEC) 22418			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 2 (48-Hr NOEC) 22419			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 3 (48-Hr NOEC) 51444			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
***Daphnia pulex* (Acute)[2]**			48-hr Minimum			
Pass/Fail Lethality (48-Hr NOEC) **TEM3D**			Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (48-Hr NOEC) **TOM3D**			Report %		once/quarter	24-hr composite
Coefficient of Variation (48-Hr NOEC) **TQM3D**			Report %		once/quarter	24-hr composite
Pass/Fail Retest 1 (48-Hr NOEC) 22415			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 2 (48-Hr NOEC) 22416			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite
Pass/Fail Retest 3 (48-Hr NOEC) 51443			Report (Pass=0/Fail=1)		once/month[4]	24-hr composite

* See Transition Condition in Part II.9 of this permit.

[1] See Condition No. 7 of Part II (Metals and Other Toxic Compounds Requirements).
[2] See Condition No. 8 of Part II (WET Testing Requirements).
[3] Samples for metals and other toxic compounds shall be reported in units of micrograms per liter (µg/l).

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[4] CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters (reported on a quarterly DMR). This condition applies to *P. promelas* and *D. pulex*.

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after sand filtration and prior to the pipeline to Outfall 001.

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SECTION A3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 – stormwater and dust suppression/quenching water runoff from slag pile.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 002. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lb/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	two/week	calculated[1]
Total Suspended Solids (TSS)	N/A	N/A	100	150	once/quarter	grab
Oil and Grease (O&G)	N/A	N/A	10.0	15.0	once/quarter	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab

[1] Flow is to be calculated based upon pump run times and the pump rating curve.

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the sedimentation pond and prior to the pipeline to Outfall 002.

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SECTION B. PERMIT COMPLIANCE SCHEDULE

None

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PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be an Advanced Industrial licensed by the State of Arkansas in accordance with APCEC Regulation No. 3.503(B).

2. In accordance with 40 CFR Parts 122.62 (a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

3. Other Specified Monitoring Requirements

   The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

   - The monitoring and analytical instruments are consistent with accepted scientific practices.
   - The requests shall be submitted in writing to the Permits Branch of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5.
   - All associated devices are installed, calibrated, and maintained to ensure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Assurance/Quality Control (QA/QC) program.

   Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. The ADEQ must be notified in writing and the permittee must receive written approval from the ADEQ if the permittee decides to return to the original permit monitoring requirements.

4. Best Management Practices (BMPs), as defined in Part IV.6 of the permit, must be implemented for the facility to prevent or reduce the pollution of waters of the State from stormwater runoff, spills or leaks, and/or waste disposal. These BMPs shall be implemented in the areas that drain to the treatment system covered under this permit, but not the areas covered under the NPDES Industrial Stormwater General Permit ARR000000. The permittee must amend these BMPs whenever there is a change in the facility or a change in the operation of the facility that warrants necessary revisions in management practices in order to control the quality of stormwater discharges associated with industrial activity authorized by this permit.

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5. This facility must maintain stormwater permit coverage under the NPDES Industrial Stormwater General Permit ARR000000 in accordance with 40 CFR 122.26(a)(1)(ii) and 40 CFR 122.26(b)(14)(i).

6. There shall be no discharge of process wastewater pollutants resulting from the electric arc furnace steelmaking process to waters of the State, in accordance with 40 CFR 420.44(a).

7. Metals and Other Toxic Compounds

   The permittee shall use any EPA approved method based on 40 CFR Part 136 provided the minimum quantification level (MQL) for the chosen method is equal to or less than what has been specified in the chart below:

Pollutant	MQL (µg/l)
Chromium (VI)[1]	10
Chromium, Total Recoverable	10
Lead, Total Recoverable	0.5
Nickel, Total Recoverable	0.5
Zinc, Total Recoverable	20
Naphthalene	10
Tetrachloroethylene	10

[1] Chromium (VI) shall be expressed in the dissolved form, in accordance with 40 CFR 122.45(c)(3).

   The permittee may develop a matrix-specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. A matrix is defined as an environment or material in which something develops; a surrounding medium or structure (e.g., the effluent discharged from a wastewater treatment facility). For any pollutant for which the permittee determines a matrix-specific MDL, the permittee shall send to the ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a matrix-specific MDL was correctly calculated. A matrix-specific MQL shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

   Upon written approval by the Permits Branch, the matrix-specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

8. WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC FRESHWATER)

   A. SCOPE AND METHODOLOGY

      (1) The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

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APPLICABLE TO FINAL OUTFALL(S):	001
REPORTED ON DMR AS FINAL OUTFALL:	OUTFALL 001
CRITICAL DILUTION (%):	0.15
EFFLUENT DILUTION SERIES (%):	0.06, 0.08, 0.11, 0.15, 0.20
TESTING FREQUENCY:	once/quarter
COMPOSITE SAMPLE TYPE:	Defined at Part I
TEST SPECIES/METHODS:	40 CFR Part 136

Daphnia pulex acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

Pimephales promelas (Fathead minnow) acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

(2) The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which toxicity that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Acute test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.

(3) This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

B. PERSISTENT LETHALITY

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects are herein defined as a statistically significant difference at the 95% confidence level between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent). The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation.

Such testing cannot confirm or disprove a previous test result.

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If a frequency reduction, as specified in Item F, has been granted and any subsequent, valid test demonstrates significant lethal effects to a test species at or below the critical dilution, the frequency of testing for this species is automatically increased to once per quarter for the life of the permit.

(1) Part I Testing Frequency Other Than Monthly

a. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item D of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

b. If any of the additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item E of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

c. The provisions of Item B.1.a are suspended upon submittal of the TRE Action Plan.

C. REQUIRED TOXICITY TESTING CONDITIONS

(1) Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

a. Each toxicity test control (0% effluent) must have a survival equal to or greater than 90%.

b. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: *Daphnia pulex* survival test; and Fathead minnow survival test.

c. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal effects are exhibited for: *Daphnia pulex* survival test; and Fathead minnow survival test.

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d. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the survival in the *Daphnia pulex* survival test or the survival endpoint of the Fathead minnow test, the test is determined to invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

e. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of great than 40%.

(2) Statistical Interpretation

For the *Daphnia pulex* survival test and the Fathead minnow survival test, the statistical analyses used to determine if there is a statistically significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-821-R-02-012 or the most recent update thereof.

If the conditions of Test Acceptability are met in Item C.1 above and the percent survival of the test organism is equal to or greater than 90% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item D below.

(3) Dilution Water

a. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

i. toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

ii. toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

b. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item C.1), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

i. a synthetic dilution water control which fulfills the test acceptance requirements of Item C.1 was run concurrently with the receiving water control;

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ii. the test indicating receiving water toxicity has been carried out to completion (i.e., 48 hours);

iii. the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item D below; and

iv. the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

(4) Samples and Composites

a. The permittee shall collect two flow-weighted composite samples from the outfall(s) listed at Item A.1 above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.

b. The permittee shall collect a second composite sample for use during the 24-hour renewal of each dilution concentration for both tests. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.

c. The permittee must collect both flow-weighted composite samples within the monitoring period. The second composite sample shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.

d. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

e. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item D of this section.

D. REPORTING

DRAFT

(1) The permittee shall prepare a full report of the results of all tests conducted pursuant to this Part in accordance with the Report Preparation Section of EPA-821-R-02-012, for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of Part III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

(2) A valid test for each species must be reported on the DMR during each reporting period specified in Part I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST Survival results for each species during the reporting period. The full report for all invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

(3) The permittee shall report the following results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with Part III.D.4 of this permit. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

a. *Pimephales promelas* (Fathead minnow)

i. If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C.

ii. Report the NOEC value for survival, Parameter No. TOM6C.

iii. Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM6C.

iv. If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):

a. Consecutive Monthly Retest 1: If the NOEC for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22418 (reported on quarterly DMR);

b. Consecutive Monthly Retest 2: If the NOEC for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22419 (reported on quarterly DMR);

DRAFT

c. Consecutive Monthly Retest 3: If the NOEC for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 51444 (reported on quarterly DMR);

d. If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test;

e. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22418, 22419, 51444 (reported on quarterly DMR).

b. *Daphnia pulex*

i. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D.

ii. Report the NOEC value for survival, Parameter No. TOM3D.

iii. Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM3D.

iv. If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):

a. Consecutive Monthly Retest 1: If the NOEC for *D. pulex* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22415 (reported on quarterly DMR);

b. Consecutive Monthly Retest 2: If the NOEC for *D. pulex* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22416 (reported on quarterly DMR);

c. Consecutive Monthly Retest 3: If the NOEC for *D. pulex* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 51443 (reported on quarterly DMR);

d. If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test;

e. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22415, 22416, and 51443 (reported on quarterly DMR).

E. TOXICITY REDUCTION EVALUATION (TRE)

(1) Within ninety (90) days of confirming lethality in the retests, the permittee shall

DRAFT

submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:

a. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

   The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

   U.S. Department of Commerce
   National Technical Information Service
   5285 Port Royal Road
   Springfield, VA 22161

b. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

   Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 24 hours of test initiation, each composite sample shall be analyzed independently.

DRAFT

Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

c. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

d. Project Organization (e.g., project staff, project manager, consulting services, etc.).

(2) The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

(3) The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

a. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

b. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

c. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.

(4) The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

(5) Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

F. MONITORING FREQUENCY REDUCTION

(1) The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item A.1) of testing for one or both test species, with no lethal

DRAFT

effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Daphnia pulex*).

(2) CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in Item C.1 above. In addition, the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.

(3) SURVIVAL FAILURES - If any test fails the survival endpoint at any time during the life of this permit, three monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

(4) Any monitoring frequency reduction granted applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

9. Transition Period

The permittee is planning construction for improvements to the existing wastewater treatment system to accommodate increased production capacity of the facility (Phase 2). The design flow at Outfall 001 will be increasing from 1.15 MGD to 2.853 MGD when the new system is installed and operating.

a. Beginning on the effective date of the permit modification, the permittee must submit a Discharge Monitoring Report (DMR) for each permitted production tier on a monthly basis (i.e., Tier I - the average daily production for a calendar month is equal to or less than 11,000,000 lbs/day and Tier II - the average daily production for a calendar month is greater than 11,000,000 lbs/day). The DMR for Tier II can be marked and submitted as "Conditional Monitoring – Not Required This Period" until such time as the new treatment system is operational. The permittee must continue to submit two (2) monthly DMRs until the report required in Item b of this condition is received.

b. The permittee must notify the ADEQ within 30 days of when the new wastewater treatment system has been completely installed and is operating. Once Phase 2 is in production, the permittee shall follow appropriate Tier requirements after notification until the end of the permit term.

DRAFT

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. **Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; and/or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report (DMR) which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

2. **Penalties for Violations of Permit Conditions**

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. **Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

A. Violation of any terms or conditions of this permit.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by Part III.A.11 herein.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

DRAFT

4. **Toxic Pollutants**

Notwithstanding Part III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APCEC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under APCEC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. **Civil and Criminal Liability**

Except as provided in permit conditions for "Bypass of Treatment Facilities" (Part III.B.4), and "Upset" (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

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 to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

7. **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.

8. **Property Rights**

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

DRAFT

9. **Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. **Applicable Federal, State or Local Requirements**

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal such as endangered species, state or local statute, ordinance or regulation.

11. **Permit Fees**

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APCEC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

A. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to achieve compliance with the conditions of this permit.

2. **Need to Halt or Reduce not a Defense**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control

DRAFT

production or discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. **Duty to Mitigate**

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

4. **Bypass of Treatment Facilities**

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).

A. Bypass not exceeding limitation

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.B and 4.C.

B. Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part III.D.6 (24-hour notice).

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance.
(c) The permittee submitted notices as required by Part III.B.4.B.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.C(1).

DRAFT

5. **Upset Conditions**

A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.B of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

1. An upset occurred and that the permittee can identify the specific cause(s) of the upset.
2. The permitted facility was at the time being properly operated.
3. The permittee submitted notice of the upset as required by Part III.D.6.
4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. **Removed Substances**

A. Solids, sludges, filter backwash, or other pollutants removed in the course of 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. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 CFR Part 503, 40 CFR Part 257, and 40 CFR Part 258.

B. Any changes to the permittee's disposal practices described in Part II of the permit will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. **Power Failure**

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

SECTION C – MONITORING AND RECORDS

1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified,

DRAFT

before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Department approved method (i.e., as allowed under Part II.3), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department.

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to ensure accuracy of measurements and shall ensure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to ensure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. **Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

5. **Reporting of Monitoring Results**

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form provided by the Department or other form/method approved in writing by the Department (e.g., electronic submittal of DMR once approved). Monitoring results obtained during the

DRAFT

previous monitoring period shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month or submitted electronically by 6:00 p.m. of the 25th, following the completed reporting period beginning on the effective date of the permit. When mailing the DMRs, duplicate copies of the forms signed and certified as required by Part III.D.11 and all other reports required by Part III.D, shall be submitted to the Director at the following address:

Enforcement Branch
Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

If permittee uses outside laboratory facilities for sampling and/or analysis, the name and address of the contract laboratory shall be included on the DMR.

6. **Additional Monitoring by the Permittee**

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. **Retention of Records**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. **Record Contents**

Records and monitoring information shall include:

A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any.
B. The individual(s) who performed the sampling or measurements.
C. The date(s) and time analyses were performed.
D. The individual(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The measurements and results of such analyses.

9. **Inspection and Entry**

DRAFT

The permittee shall allow the Director, or an authorized representative, 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 under the conditions of this permit.
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. **Planned Changes**

The Permittee shall give notice to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 CFR 122.41(l)]. Notice is required only when:

A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR 122.29(b).
B. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants subject to effluent limitations in the permit, or to the notification requirements under 40 CFR 122.42(b).

2. **Anticipated Noncompliance**

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

3. **Transfers**

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

4. **Monitoring Reports**

Monitoring results shall be reported at the intervals and in the form specified in Part III.C.5. **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. **Compliance Schedule**

DRAFT

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. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. **Twenty-four Hour Report**

Please be aware that the notifications can be sent by email to water-enforcement-report@adeq.state.ar.us or at 501-682-0624 for immediate reporting:

A. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances to the Enforcement Branch of the Office of Water Quality of DEQ. 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 the following information:

1. A description of the noncompliance and its cause.
2. 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.
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit.
2. Any upset which exceeds any effluent limitation in the permit.
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit.

C. The Director may waive the written report on a case-by-case basis if the notification has been received within 24 hours to the Enforcement Branch of the Office of Water Quality of the ADEQ.

7. **Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Parts III.D.4, 5, and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.6.

8. **Changes in Discharge of Toxic Substances for Industrial Dischargers**

The Director shall be notified as soon as the permittee knows or has reason to believe:

DRAFT

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1).

B. That any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(2).

9. **Duty to Provide Information**

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

10. **Duty to Reapply**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated in APCEC Regulation No. 6.

11. **Signatory Requirements**

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

A. All **permit applications** shall be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.
(b) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental

DRAFT

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 proprietor, respectively.

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   (a) The chief executive officer of the agency.
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above.
2. The authorization specified 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).
3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section 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."

12. **Availability of Reports**

Except for data determined to be confidential under 40 CFR Part 2 and APCEC Regulation No. 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. As required by

DRAFT

the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. **Penalties for Falsification of Reports**

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

14. **Other Information**

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

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PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
3. **"APCEC"** means the Arkansas Pollution Control and Ecology Commission.
4. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APCEC) Regulation No. 2, as amended.
6. **"Best Management Practices (BMPs)"** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
7. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).
8. **"Composite sample"** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
9. **"Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
   A. **Mass Calculations:** For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of pollutant discharged over the sampling day.
   B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
10. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
11. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
12. **"Director"** means the Director of the Arkansas Department of Environmental Quality.
13. **"Dissolved oxygen limit"** shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month.

DRAFT

B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.

14. **"*E. coli*"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For *E. coli*, report the Daily Maximum as the highest "daily discharge" during the calendar month and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, both in colonies per 100 ml.
15. **"Fecal Coliform Bacteria (FCB)"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest "daily discharge" during the calendar month and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, both in colonies per 100 ml.
16. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
17. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
18. **"Instantaneous flow measurement"** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
19. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
20. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
21. **"Monthly Average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For *E. coli* or Fecal Coliform Bacteria (FCB), report the Monthly Average as the geometric mean of all "daily discharges" within a calendar month (see Part IV.14 and IV.15 above, respectively).
22. **"Monitoring and Reporting"**
    When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.
    A. **MONTHLY:**
    is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.
    B. **BI-MONTHLY:**
    is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.
    C. **QUARTERLY:**
        1. is defined as a **fixed calendar quarter** or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December.

DRAFT

2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.

D. **SEMI-ANNUAL:**
is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

E. **ANNUAL or YEARLY:**
is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.

23. **"National Pollutant Discharge Elimination System"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
24. **"POTW"** means Publicly Owned Treatment Works; a treatment works (see Part IV.29 below) which is owned by a state or municipality.
25. **"Reduction of $CBOD_5$/BOD_5 and TSS in mg/l Formula"**
[(Influent – Effluent) / Influent] × 100
26. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
27. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
28. **"7-Day Average"** also known as "average weekly," means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or *E. coli* is the geometric mean of the "daily discharges" of all effluent samples collected during a calendar week, both in colonies per 100 ml.
29. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.

DRAFT

30. **Units of Measure:**
    "MGD" shall mean million gallons per day.
    "mg/l" shall mean milligrams per liter or parts per million (ppm).
    "µg/l" shall mean micrograms per liter or parts per billion (ppb).
    "cfs" shall mean cubic feet per second.
    "ppm" shall mean parts per million.
    "s.u." shall mean standard units.
31. **"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. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless or improper operations.
32. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
33. **"Weekday"** means Monday – Friday.

DRAFT

Fact Sheet

All changes to this Fact Sheet based upon the application to modify the permit are italicized.

This is a modified permit. Only the modified portions of the permit are open for comment at this time. This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for issuance of the discharge Permit Number AR0052582 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 47-00991 to discharge to Waters of the State.

1. PERMITTING AUTHORITY

The issuing office is:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT

The applicant's mailing address is:

Big River Steel LLC
P.O. Box 707
Osceola, AR 72370

The facility address is:

Big River Steel LLC
2027 East State Highway 198
Osceola, AR 72370

3. PREPARED BY

The permit was modified by:

Terry Liu, P.E.
Staff Engineer
NPDES Discharge Permits Section
Office of Water Quality
(501) 682-0653
E-mail: liu@adeq.state.ar.us

Jessica Sears, P.E.
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NPDES Discharge Permits Section
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4. PERMIT ACTIVITY

This is a modified permit. In accordance with 40 CFR 122.62, only the conditions subject to modification are reopened.

DRAFT

The permittee submitted a permit modification application and state construction permit application on October 30, 2019, with additional information received November 5, 2019. The purpose of the modification is to improve the existing wastewater treatment facility to increase the design flow rate of the facility from 1.15 MGD to 2.853 MGD. The improvements will include construction of new emulsion tanks to replace the existing oil/water separation process, installation of additional treatment tanks and basins for wastewater homogenization and flow equalization, installation of new DAF units for the existing metals removal process, installation of a new clarifier and press plate filter for solids separation and dewatering, construction of a sludge dewatering area, and upgrades to the existing clarifier, aeration basin, and sand filters. Therefore, the effluent limitations at Outfall 001 are being revised to accommodate for the increased design flow rate.

It is proposed that the current discharge permit be modified for the remainder of the 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management practice
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guideline
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH_3-N - ammonia nitrogen
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System

DRAFT

NSPS - new source performance standard
O&G - oil and grease
Reg. 2 - APCEC Regulation No. 2
Reg. 6 - APCEC Regulation No. 6
Reg. 8 - APCEC Regulation No. 8
Reg. 9 - APCEC Regulation No. 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
Total Chromium - total recoverable chromium
Total Lead - total recoverable lead
Total Nickel - total recoverable nickel
Total Zinc - total recoverable zinc
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS - United States Geological Survey
WET - whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

Compliance and Enforcement History for this facility can be reviewed by using the following web link:

http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_Compliance%20Review_20191113.pdf

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT

This is a modified permit. Only the modified portions of the permit are open for comments pursuant to 40 CFR 122.62:

1. *The mailing address has been updated based on the permit modification application.*
2. *A concentration limitation for O&G at Outfall 001 has been included in this permit modification. See Section 11 of this Fact Sheet for more details.*
3. *New mass loading limitations and monitoring requirements in the Part I.A2 for outfall 001 are included for Tier II production. See Section 11.D and 14 of this Fact Sheet for more details.*
4. *The design flow at Outfall 001 has been revised from 1.15 MGD to 2.853 MGD based on the submitted application. See Part II.9 of the permit for transition condition and Section*

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8 of this Fact Sheet for further information.

5. *The treatment process has been updated to reflect the changes listed in the permit application. See Section 8 of this Fact Sheet for more details.*
6. *The Critical Dilution (CD) for Chronic WET testing has been revised to 0.15% based on the updated design flow. See Section 12 of this Fact Sheet for more details.*

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

The outfalls are located at the following coordinates based on information in the permit application and confirmed with Google Earth using WGS84:

Outfall 001: Latitude: 35° 39' 5.0" N; Longitude: 89° 54' 47.0" W
Outfall 002: Latitude: 35° 39' 5.0" N; Longitude: 89° 54' 47.1" W

The receiving waters named:

Mississippi River in Segment 6C of the Mississippi River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 08010100 and reach #010 is a Water of the State classified for primary and secondary contact recreation; raw water source for domestic (public and private), industrial, and agricultural water supplies; propagation of desirable species of fish and other aquatic life; and other compatible uses.

7. 303(d) LIST, TMDL, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS

A. 303(d) List:

The receiving stream is not listed on Arkansas's 2016 List of Impaired Waterbodies (303(d) List). Therefore, no permit action is necessary.

B. Applicable Total Maximum Daily Load (TMDL) Reports:

There are no applicable TMDL reports issued for the receiving stream.

C. Endangered Species:

No comments on the application were received from the USF&WS. *The draft permit and Fact Sheet will be sent to the USF&WS for their review during the public notice process.*

The Arkansas Natural Heritage Commission has identified the following species of conservation concern to occur within five (5) miles downstream of the outfall in the Mississippi River:

Scaphirhynchus albus, pallid sturgeon – federal concern (endangered)
Sternula antillarum athalassos, interior least tern – federal concern (endangered)

DRAFT

The limits in the permit are designed to protect all beneficial uses of the receiving waters, including propagation of desirable species of fish and other aquatic life, which includes the above species of conservation concern. Therefore, the ADEQ has determined that the final permit limits will serve to help protect the species of conservation concern identified above.

D. **Anti-Degradation:**

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APCEC Regulation No. 2.

8. **OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION**

The following is a description of the facility described in the application:

A. Flow Rates:

Outfall 001
Current design flow: 1.15 MGD
New Design Flow: 2.853 MGD

Outfall 002
Flow = variable

B. Type of Treatment:

Outfall 001

Current Treatment system includes:
Pretreatment:
- (oily wastewater) settling basin for oil and water separation using pH adjustment, dissolved air flotation, and oil skimmer
- (chromate-contaminated wastewater) chromium reactor tank using pH adjustment and redox reaction

Primary Treatment (all process wastewater, which includes pretreated wastewater):
- settling basin for homogenization of all process wastewater streams using pH adjustment and precipitation
- coagulation-flocculation and sedimentation using thickener to separate solids
- aeration basin and sand filtration for removal of remaining suspended solids
- dewatering separated solids using press plate filter

New Treatment will include:

DRAFT

Pretreatment:
- *(oily wastewater) settling basin for oil and water separation using pH adjustment, emulsion tanks, and oil skimmer*
- *(chromate-contaminated wastewater) chromium reactor tank using pH adjustment and redox reaction (Existing equipment; not operated to date)*

Primary Treatment (all process wastewater, which includes pretreated wastewater):
- *settling basin for homogenization of all process wastewater streams using pH adjustment, precipitation, and dissolved air flotation*
- *coagulation-flocculation and sedimentation using thickener to separate solids*
- *aeration basin and sand filtration for removal of remaining suspended solids*
- *sludge dewatering process by air drying*
- *dewatering separated solids using press plate filter*

Outfall 002
sedimentation pond

C. Discharge Description:

Outfall 001
current treated process wastewater from the following sources: chromate reactor, galvanizing lines, pickling lines, skin pass mill, tandem cold mill, contact cooling water systems, and non-contact cooling water systems

new treated process wastewater from the following sources: chromate reactor, galvanizing lines, pickling lines, skin pass mill, tandem cold mill, reversing cold mill, contact cooling water systems, and non-contact cooling water systems

Outfall 002
stormwater runoff from slag pile and dust suppression/quenching water runoff from slag pile

D. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 85 is more than 80, this facility is classified as a Major Industrial.

E. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be in accordance with State Construction Permit No. AR0052582C, issued under Reg. 6.202.

9. **ACTIVITY**

Under the Standard Industrial Classification (SIC) code of 3312 or North American Industry Classification System (NAICS) code of 331110, the applicant's activities are the operation of a steel mill.

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10. SOLIDS PRACTICES

It should be noted that no sanitary wastewater will be treated at this facility. All sanitary wastewater will be sent to the nearby publicly owned treatment works.

Solids generated by the process wastewater treatment system will be dewatered through the press plate filter or by air dry in the sludge processing area, and disposed of at a nearby landfill. Solids generated by the stormwater/slag quenching water runoff treatment system will remain in the sedimentation pond. Solids disposal, if any, will require prior authorization from this Department and shall be conducted in accordance with the conditions in Part III Section B.6 of the permit.

11. DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS

The Arkansas Department of Environmental Quality has determined to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR Part 403 and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations and Conditions

Following regulations promulgated at 40 CFR Part 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44 (a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44 (d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
Outfall 001 *(Tier I)*						
TSS	N/A	N/A	235.3 lb/day	610.9 lb/day	Report* mg/l 235.3 lb/day	Report* mg/l 610.9 lb/day
O&G	*10.0 mg/l*	*15.0 mg/l*	78.6 lb/day	183.7 lb/day	*10.0 mg/l*	*15.0 mg/l*

DRAFT

Parameter	Water Quality-Based		Technology-Based		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
	95.9 lb/day	143.9 lb/day			78.6 lb/day	143.9 lb/day
Chromium (VI)	535 lb/day	1,074 lb/day	0.02 lb/day	0.06 lb/day	Report* mg/l 0.02 lb/day	Report* mg/l 0.06 lb/day
Chromium, Total	N/A	N/A	0.1 lb/day	0.3 lb/day	Report* mg/l 0.1 lb/day	Report* mg/l 0.3 lb/day
Lead, Total	1,879 lb/day	3,770 lb/day	0.5 lb/day	1.6 lb/day	Report* mg/l 0.5 lb/day	Report* mg/l 1.6 lb/day
Nickel, Total	51,819 lb/day	103,972 lb/day	0.08 lb/day	0.2 lb/day	Report* mg/l 0.08 lb/day	Report* mg/l 0.2 lb/day
Zinc, Total	10,867 lb/day	21,803 lb/day	0.8 lb/day	2.3 lb/day	Report* mg/l 0.8 lb/day	Report* mg/l 2.3 lb/day
Naphthalene	78,339 lb/day	157,183 lb/day	0.01 lb/day	0.03 lb/day	Report* mg/l 0.01 lb/day	Report* mg/l 0.03 lb/day
Tetrachloroethylene	150,555 lb/day	302,080 lb/day	0.02 lb/day	0.04 lb/day	Report* mg/l 0.02 lb/day	Report* mg/l 0.04 lb/day
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
Acute WET Testing	Report	Report	N/A	N/A	Report	Report
Outfall 001 (Tier II)						
TSS	*N/A*	*N/A*	*585.3 lb/day*	*1515.0 lb/day*	*Report* mg/l* *585.3 lb/day*	*Report* mg/l* *1515.0 lb/day*

Parameter	Water Quality-Based		Technology-Based		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
O&G	*10.0 mg/l*	*15.0 mg/l*	*195.5 lb/day*	*461.4 lb/day*	*10.0 mg/l*	*15.0 mg/l*
	237.9 lb/day	*356.9 lb/day*			*195.5 lb/day*	*356.9 lb/day*
Chromium (VI)	*535 lb/day*	*1,073 lb/day*	*0.07 lb/day*	*0.20 lb/day*	*Report* mg/l*	*Report* mg/l*
					0.07 lb/day	*0.20 lb/day*
Chromium, Total	*N/A*	*N/A*	*0.2 lb/day*	*0.6 lb/day*	*Report* mg/l*	*Report* mg/l*
					0.2 lb/day	*0.6 lb/day*
Lead, Total	*1,877 lb/day*	*3,765 lb/day*	*1.4 lb/day*	*4.2 lb/day*	*Report* mg/l*	*Report* mg/l*
					1.4 lb/day	*4.2 lb/day*
Nickel, Total	*51,749 lb/day*	*103,832 lb/day*	*0.18 lb/day*	*0.53 lb/day*	*Report* mg/l*	*Report* mg/l*
					0.18 lb/day	*0.53 lb/day*
Zinc, Total	*10,855 lb/day*	*21,780 lb/day*	*2.0 lb/day*	*6.0 lb/day*	*Report* mg/l*	*Report* mg/l*
					2.0 lb/day	*6.0 lb/day*
Naphthalene	*78,255 lb/day*	*157,015 lb/day*	*0.03 lb/day*	*0.06 lb/day*	*Report* mg/l*	*Report* mg/l*
					0.03 lb/day	*0.06 lb/day*
Tetrachloroethylene	*150,351 lb/day*	*301,672 lb/day*	*0.04 lb/day*	*0.09 lb/day*	*Report* mg/l*	*Report* mg/l*
					0.04 lb/day	*0.09 lb/day*
pH	*6.0-9.0 s.u.*		*6.0-9.0 s.u.*		*6.0-9.0 s.u.*	
Acute WET Testing	*Report*	*Report*	*N/A*	*N/A*	*Report*	*Report*
Outfall 002						
TSS	N/A	N/A	100 mg/l	150 mg/l	100 mg/l	150 mg/l

Parameter	Water Quality-Based		Technology-Based		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
O&G	*10.0* mg/l	*15.0* mg/l	N/A	N/A	*10.0* mg/l	*15.0* mg/l
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	

* Monitor and report requirements only for concentration are included in the permit. See Section 11.D.5, paragraph three of this Fact Sheet for explanation.

A. **Justification for Limitations and Conditions of the Final Permit**

Parameter	Water Quality or Technology	Justification
		Outfall 001
TSS	Technology	NSPS 40 CFR 420 Subparts D, E, F, G, I, J, K, and L
O&G	Technology/ *Water Quality*	NSPS 40 CFR 420 Subparts F, G, I, J, K, and L, Reg. 2.510
Chromium (VI)	Technology	NSPS 40 CFR 420 Subpart L
Chromium, Total	Technology	NSPS 40 CFR 420 Subpart J
Lead, Total	Technology	NSPS 40 CFR 420 Subparts D, E, F, I, J, and L
Nickel, Total	Technology	NSPS 40 CFR 420 Subpart J
Zinc, Total	Technology	NSPS 40 CFR 420 Subparts D, E, F, I, J, and L
Naphthalene	Technology	NSPS 40 CFR 420 Subpart J
Tetrachloroethylene	Technology	NSPS 40 CFR 420 Subpart J
pH	Water Quality	NSPS 40 CFR 420 Subparts D, E, F, G, I, J, K, and L, Reg. 2.504
Acute WET Testing	Water Quality	2000 CPP: Appendix D Part V.C – Implementation Procedures for Toxic Substances
		Outfall 002
TSS[1]	Technology	Generally accepted scientific knowledge and engineering practice, Industrial Stormwater General Permit ARR000000
O&G[2]	Water Quality	Reg. 2.510
pH	Water Quality	Reg. 2.504

[1] Total Suspended Solids (TSS) is a factor contributing to physical and aesthetic degradation of water quality. TSS is physically related to other pollutants, particularly nutrients and metals, which may be carried on the surface of suspended sediments. In accordance with 40 CFR 122.44(d)(1)(i), "limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water

quality standard, including State narrative criteria for water quality." APCEC Reg. 2.408 states, "Receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature…" Note that TSS is a primary factor affecting turbidity. The ADEQ acknowledges that there are no Water Quality Standards for TSS; however, there are Water Quality Standards for turbidity based on APCEC Reg. 2.503. APCEC Regulation No. 2 lists a turbidity value for all flows of 75 NTU for the Mississippi River. As stated above, TSS is a good indicator of other pollutants, particularly nutrients such as phosphorus. Therefore, in lieu of turbidity, TSS limits have been included in the permit.

The Monthly Average limit of 100 mg/l for TSS is based on the benchmark value provided in the Industrial Stormwater General Permit ARR000000. Considering that the sedimentation pond collects stormwater runoff from the slag pile, an industrial source, this limit is included to ensure the pond is operating properly. The Daily Maximum limit of 150 mg/l for TSS is based on Section 5.4.2 of the Technical Support Document for Water Quality-based Toxics Control. For more information, see Section 11.C.2 of this Fact Sheet.

[2] APCEC Reg. 2.510 states, "Oil, grease or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface, or coat the banks and/or bottoms of the water courses or adversely affect any of the associated biota." This regulation does not allow mixing zones for discharges of oil and grease. Therefore, Monthly Average and Daily Maximum limits of 10 mg/l and 15 mg/l, respectively, have been included in the permit to be met at end-of-pipe.

As discussed in Section 11.B below, the mass limitations of TSS, O&G, Chromium(VI), Total Chromium, Total Lead, Total Nickel, Total Zinc, Naphthalene, and Tetrachloroethylene at Outfall 001 have been revised due to the increased design flow. The effluent concentration limitations of O&G at Outfall 001 are being added with this permit modification.

B. **Anti-backsliding**

Since this is a new permit, the anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(l)] will be taken into consideration when the permit is renewed.

The permit maintains the requirements of the current permit with the exception of revised mass limitations of TSS, O&G, Chromium(VI), Total Chromium, Total Lead, Total Nickel, Total Zinc, Naphthalene, and Tetrachloroethylene at Outfall 001.

The revisions to the mass limitations are allowed in accordance with the 40 CFR 122.44 (l)(2)(i)(A), which states, "A permit…may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation." As stated in Section 4 of this

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Fact Sheet, the permittee will improve the existing wastewater treatment system to treat the proposed Phase 2 process wastewater, thereby increasing the design flow from 1.15 MGD to 2.853 MGD at outfall 001. This increase in flow justifies the increase of allowable mass loadings of TSS, O&G, Chromium(VI), Total Chromium, Total Lead, Total Nickel, Total Zinc, Naphthalene, and Tetrachloroethylene at Outfall 001.

C. **Limits Calculations**

1. Mass Limits:

   In accordance with 40 CFR 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 CFR 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

   Outfall 001

   Calculations of mass limits are explained in Section 11.D of this Fact Sheet.

   Outfall 002

   Mass limits are not feasible for this outfall because the runoff through the system depends more on meteorological conditions, rather than the operations of the steel mill.

2. Concentration Limits:

   Outfall 001

   The daily maximum limit for O&G is based on Reg. 2.510.

   Concentration limits are not included for *other parameters at* this outfall since the receiving stream to effluent dilution factor is greater than 100:1 [EPA Technical Support Document for Water Quality-based Toxics Control, Section 5.7.1, March 1991].

   Outfall 002

   The daily maximum limit for TSS is based on Section 5.4.2 of the Technical Support Document for Water Quality-based Toxics Control using the following equation:

   Daily Maximum limits = Monthly Average limits × 1.5

   The daily maximum limit for O&G is based on Reg. 2.510.

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D. **Applicable Effluent Limitations Guidelines**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines (ELGs) promulgated under 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category. The operations consuming water and generating wastewater at this facility are covered under the following subcategories of 40 CFR Part 420: Subpart D – Steelmaking Subcategory, Subpart E – Vacuum Degassing Subcategory, Subpart F – Continuous Casting Subcategory, Subpart G – Hot Forming Subcategory, Subpart I – Acid Pickling Subcategory, Subpart J – Cold Forming Subcategory, Subpart K – Alkaline Cleaning Subcategory, and Subpart L – Hot Coating Subcategory.

The highest monthly average production reported in the permit modification application occurred in November 2018 (10,116,933 lbs/day). This actual reported production rate is within 20% of the anticipated production rates (9,315,000 lbs/day) used in the current permit for effluent limits calculations. Therefore, the technology-based limits for Tier I production remain unchanged.

For Tier II, the production data submitted with the application is based on projections for the first three (3) years of operation. The technology-based effluent limitations and monitoring requirements are included based on the estimated production data and 40 CFR Part 420. These limits are derived from the applicable New Source Performance Standards (NSPSs) specified in the aforementioned subcategories. The calculations of these limits are presented as follows:

(1) **Production Data**

Applicable New Source Performance Standard (NSPS)	Production Quantity (1,000 lb/day)	
	Tier I	*Tier II*
Subpart D – Steelmaking 40 CFR §420.44(a), Basic oxygen furnace steelmaking—semi-wet; and electric arc furnace steelmaking—semi-wet	9,315	*22,466*
Subpart E – Vacuum Degassing 40 CFR §420.54	1,864	*4,494*
Subpart F – Continuous Casting 40 CFR §420.64	9,315	*22,466*
Subpart G – Hot Forming 40 CFR §420.74(c)(1), Flat mills—Hot strip and sheet mills, carbon and specialty	9,315	*22,466*
Subpart I – Acid Pickling 40 CFR §420.94(b)(4), Hydrochloric acid pickling (spent acid solutions and rinse waters)—Fume scrubbers	one (1) fume scrubber	*Two (2) fume scrubbers*
Subpart J – Cold Forming	2,192	*4,384*

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Applicable New Source Performance Standard (NSPS)	Production Quantity (1,000 lb/day)	
	Tier I	*Tier II*
40 CFR §420.104(a)(2), Cold rolling mills—Recirculation-multiple stands	(Skin Pass Mill)	*(Skin Pass Mill)*
	3,982 (Tandem Cold Mill)	*7,684 (Tandem Cold Mill)*
	N/A	*2,020 (Reversing Cold Mill)*
Subpart K – Alkaline Cleaning 40 CFR §420.114(a), Batch and continuous	1,644	*3,288*
Subpart L – Hot Coating 40 CFR §420.124(a)(1), Galvanizing, terne coating and other coatings—Strip, sheet, and miscellaneous products	1,644	*5,308*

(2) **Federal Effluent Limitations**

40 CFR §420.44(a), Subpart D—Steelmaking – New Source Performance Standards

It was noted in Air Permit No. *2305-AOP-R5* for Big River Steel LLC that baghouses are used as the primary emissions control devices for the electric arc furnaces. As with other steel mills, this type of control device is defined as semi-wet, according to 40 CFR 420.41(e). Therefore, 40 CFR 420.44(a) applies in this situation and requires no discharge of process wastewater pollutants to navigable waters.

40 CFR §420.54, Subpart E—Vacuum Degassing – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00261	0.00730
Lead	0.0000313	0.0000939
Zinc	0.0000469	0.000141
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

40 CFR §420.64, Subpart F—Continuous Casting – New Source Performance Standards

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Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00261	0.00730
O&G	0.00104	0.00313
Lead	0.0000313	0.0000939
Zinc	0.0000469	0.000141
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

40 CFR §420.74(c)(1), Subpart G—Hot Forming – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.0163	0.0435
O&G	0.00545[1]	0.0109
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] A production-based effluent limit factor for the monthly average of O&G was determined by the permit writer for calculation of final effluent limits. The factor was calculated by dividing the daily maximum factor of 0.0109 lb/1,000 lb by two (2), resulting to a monthly average factor of 0.00545 lb/1,000 lb. This determination is based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control, which states that in the absence of other information, the daily maximum limit is divided by 2.0 in order to derive a monthly average limit.

40 CFR §420.94(b)(4), Subpart I—Acid Pickling – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average[2] (lb/day)[3]	Daily Maximum[2] (lb/day)[3]
TSS	5.40	12.61
O&G[1]	1.81	5.40
Lead	0.0271	0.0811
Zinc	0.0362	0.108
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] The limitations for O&G shall be applicable when acid pickling wastewaters are treated with cold rolling wastewaters.
[2] The above limitations shall be applicable to each fume scrubber associated with acid pickling operations.
[3] It should be noted that the above limitations, except pH, are expressed in the federal regulation in units of kg/day, but have been converted to lb/day for simplification.

40 CFR §420.104(a)(2), Subpart J—Cold Forming – New Source Performance Standards

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Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00125	0.00250
O&G	0.000417	0.00104
Chromium[1]	0.0000167	0.0000418
Lead	N/A[1]	N/A[1]
Nickel[1]	0.0000125	0.0000376
Zinc	N/A[1]	N/A[1]
Naphthalene	0.0000021[2]	0.0000042
Tetrachloroethylene	0.00000315[2]	0.0000063
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] The limitations for chromium and nickel shall be applicable in lieu of those for lead and zinc when cold rolling wastewaters are treated with descaling or combination acid pickling wastewaters. Therefore, the loadings calculated for lead and zinc, according to Subpart J, were not included in the building block approach for those parameters.

[2] Production-based effluent limit factors for the monthly averages of naphthalene and tetrachloroethylene were determined by the permit writer for calculations of final effluent limits. The factor for naphthalene was calculated by dividing the daily maximum factor of 0.0000042 lb/1,000 lb by two (2), resulting to a monthly average factor of 0.0000021 lb/1,000 lb. The factor for tetrachloroethylene was calculated by dividing the daily maximum factor of 0.0000063 lb/1,000 lb by two (2), resulting to a monthly average factor of 0.00000315 lb/1,000 lb. These determinations are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control, which states that in the absence of other information, the daily maximum limit is divided by 2.0 in order to derive a monthly average limit.

40 CFR §420.114(a), Subpart K—Alkaline Cleaning – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00626	0.0146
O&G	0.00209	0.00626
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

40 CFR §420.124(a)(1), Subpart L—Hot Coating – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.0188	0.0438
O&G	0.00626	0.0188
Lead	0.0000939	0.000282
Zinc	0.000125	0.000376

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Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
Chromium (VI)[1]	0.0000125	0.0000376
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] The limitations for chromium (VI) shall be applicable only to galvanizing operations, which discharge wastewaters from the chromate rinse step.

(3) **Calculations**

Limit (lb/day) = Production Quantity (1,000 lb/day) × ELG Factor (lb/1,000 lb product)

The following sample calculation shows how the technology-based TSS limits were calculated. In accordance with the NPDES Permit Writers' Manual, the building block approach was used since this facility is subject to multiple subparts of 40 CFR 420. Technology-based limits for O&G, Chromium (VI), Chromium, Lead, Nickel, Zinc, Naphthalene, and Tetrachloroethylene are calculated using the same procedure shown below, with the applicable production-based effluent limit factors from 40 CFR 420 listed in the previous tables. It should be noted that the effluent limit factor for Subpart I is based on the number of fume scrubbers used rather than production.

Sample Calculation of TSS Technology-based Limits

Subpart E: Limit = 1,864 1,000 lb/day × 0.00261 lb/1,000 lb = 4.9 lb/day

Tier I – the average daily production for a calendar month is equal to or less than 11,000,000 lbs/day

Monthly Average Limit

ELG-NSPS	Production Quantity (1,000 lb/day)	ELG Factor (lb/1,000 lb)	Monthly Avg. Mass Limit (lb/day)
Subpart D	9,315	No discharge	0.0
Subpart E	1,864	0.00261	4.9
Subpart F	9,315	0.00261	24.3
Subpart G	9,315	0.0163	151.8
Subpart I	1 fume scrubber	5.40 lb/day	5.4
Subpart J	2,192 [Skin Mill]	0.00125	2.7
	3,982 [Tan. Mill]	0.00125	5.0
Subpart K	1,644	0.00626	10.3
Subpart L	1,644	0.0188	30.9

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Total	-	-	**235.3**

Daily Maximum Limit

ELG-NSPS	Production Quantity (1,000 lb/day)	ELG Factor (lb/1,000 lb)	Daily Max. Mass Limit (lb/day)
Subpart D	9,315	No discharge	0.0
Subpart E	1,864	0.0073	13.6
Subpart F	9,315	0.0073	68.0
Subpart G	9,315	0.0435	405.2
Subpart I	1 fume scrubber	12.61 lb/day	12.6
Subpart J	2,192 [Skin Mill]	0.0025	5.5
	3,982 [Tan. Mill]	0.0025	10.0
Subpart K	1,644	0.0146	24.0
Subpart L	1,644	0.0438	72.0
Total	-	-	**610.9**

Tier II – the average daily production for a calendar month is greater than 11,000,000 lbs/day

Monthly Average Limit

ELG-NSPS	*Production Quantity (1,000 lb/day)*	*ELG Factor (lb/1,000 lb)*	*Monthly Avg. Mass Limit (lb/day)*
Subpart D	*22,466*	*No discharge*	*0.0*
Subpart E	*4,494*	*0.00261*	*11.7*
Subpart F	*22,466*	*0.00261*	*58.6*
Subpart G	*22,466*	*0.0163*	*366.2*
Subpart I	*2 fume scrubbers*	*5.40 lb/day*	*10.8*
Subpart J	*4,384 [Skin Mill]*	*0.00125*	*5.5*
	7,684 [Tan. Mill]	*0.00125*	*9.6*
	2,020 [Reversing Mill]	*0.00125*	*2.5*
Subpart K	*3,288*	*0.00626*	*20.6*
Subpart L	*5,308*	*0.0188*	*99.8*
Total	*-*	*-*	***585.3***

DRAFT

Daily Maximum Limit

ELG-NSPS	*Production Quantity (1,000 lb/day)*	*ELG Factor (lb/1,000 lb)*	*Daily Max. Mass Limit (lb/day)*
Subpart D	*22,466*	*No discharge*	*0.0*
Subpart E	*4,494*	*0.0073*	*32.8*
Subpart F	*22,466*	*0.0073*	*164.0*
Subpart G	*22,466*	*0.0435*	*977.3*
Subpart I	*2 fume scrubbers*	*12.61 lb/day*	*25.2*
Subpart J	*4,384 [Skin Mill]*	*0.0025*	*11.0*
	7,684 [Tan. Mill]	*0.0025*	*19.2*
	2,020 [Reversing Mill]	*0.0025*	*5.0*
Subpart K	*3,288*	*0.0146*	*48.0*
Subpart L	*5,308*	*0.0438*	*232.5*
Total	-	-	***1515.0***

(4) **Technology-based Limits**

Parameter	Monthly Average Limit (lb/day)		Daily Maximum Limit (lb/day)	
	Tier - I	*Tier - II*	*Tier - I*	*Tier - II*
TSS	235.3	*585.3*	610.9	*1515.0*
O&G	78.6	*195.5*	183.7	*461.4*
Chromium (VI)	0.02	*0.07*	0.06	*0.20*
Chromium, Total	0.1	*0.2*	0.3	*0.6*
Lead, Total	0.5	*1.4*	1.6	*4.2*
Nickel, Total	0.08	*0.18*	0.2	*0.53*
Zinc, Total	0.8	*2.0*	2.3	*6.0*
Naphthalene	0.01	*0.03*	0.03	*0.06*
Tetrachloroethylene	0.02	*0.04*	0.04	*0.09*
pH	6.0-9.0 s.u.	*6.0-9.0 s.u.*	6.0-9.0 s.u.	*6.0-9.0 s.u.*

The calculations of technology-based limits can be reviewed at the following web *links*:

Tier I

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_ELG%20Production-based%20Limits_20151218.pdf

Tier II

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http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_ELG%20Production-based%20Limits_20191118.pdf

(5) **Water Quality-based Limits vs. Technology-based Limits**

The water quality-based limit for pH contained in APCEC Reg. 2.504 is equivalent to the technology-based limits specified in the ELGs of the select subparts of 40 CFR 420. Therefore, no comparison is necessary for pH limits.
Concentration limits have not been calculated for limitation purposes because this outfall discharges directly to the Mississippi River, which has a 7Q10 of 119,000 cfs. Instead, water quality-based mass limits, derived from the water quality standards contained in APCEC Reg. 2.508, were calculated for comparison with the aforementioned technology-based limits. The water quality-based masses for Chromium (VI), Lead, Nickel, Zinc, Naphthalene, and Tetrachloroethylene were calculated using the procedures derived in a manner consistent with the Technical Support Document for Water Quality-based Toxics Control (EPA, March 1991), the 2000 CPP, and 40 CFR 122.45(c).

Parameter	Value	Source
Tier I Design Flow	1.15 MGD = 1.78 cfs	Permit application
Tier II Design Flow	*2.853 MGD = 4.41 cfs*	*Permit modification application*
7Q10	119,000 cfs	Arkansas Geological Commission Map dated 1983, for U.S.G.S. Station ID: 07032000
TSS	8 mg/l	Specified in CPP for Delta Ecoregion
Hardness as $CaCO_3$	81 mg/l	Specified in CPP for Delta Ecoregion
pH	7.0 s.u.	Neutral pH used since no known, upstream data was found.

(6) **Calculated Water Quality-based Masses**

Parameter	Monthly Average Limit (lb/day)		Daily Maximum Limit (lb/day)	
	Tier - I	*Tier - II*	*Tier - I*	*Tier - II*
O&G	95.9	*237.9*	143.9	*356.9*
Chromium (VI)	535	*535*	1,074	*1,073*
Lead, Total	1,879	*1,877*	3,770	*3,765*
Nickel, Total	51,819	*51,749*	103,972	*103,832*
Zinc, Total	10,867	*10,855*	21,803	*21,780*
Naphthalene	78,339	*78,255*	157,183	*157,015*
Tetrachloroethylene	150,555	*150,351*	302,080	*301,672*

The calculations of water quality-based masses can be reviewed at the following web *links*:

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Tier I

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_PPS%20WQ-based%20Limits_20151020.pdf

Tier II

http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_PPS%20for%20Outfall%20001_20191119.pdf

(7) **Comparison of Technology-based Masses to Water Quality-based Masses**

Tier I

Parameter	Technology-based Masses		Water Quality-based Masses	
	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)
O&G	**78.6**	183.7	95.9	**143.9**
Chromium (VI)	**0.02**	**0.06**	535	1,074
Lead, Total	**0.5**	**1.6**	1,879	3,770
Nickel, Total	**0.08**	**0.2**	51,819	103,972
Zinc, Total	**0.8**	**2.3**	10,867	21,803
Naphthalene	**0.01**	**0.03**	78,339	157,183
Tetrachloroethylene	**0.02**	**0.04**	150,555	302,080

Tier II

Parameter	*Technology-based Masses*		*Water Quality-based Masses*	
	Monthly Average Limit (lb/day)	*Daily Maximum Limit (lb/day)*	*Monthly Average Limit (lb/day)*	*Daily Maximum Limit (lb/day)*
O&G	***195.5***	*461.4*	*237.9*	***356.9***
Chromium (VI)	***0.07***	***0.20***	*535*	*1,073*
Lead, Total	***1.4***	***4.2***	*1,877*	*3,765*
Nickel, Total	***0.18***	***0.53***	*51,749*	*103,832*
Zinc, Total	***2.0***	***6.0***	*10,855*	*21,780*
Naphthalene	***0.03***	***0.06***	*78,255*	*157,015*
Tetrachloroethylene	***0.04***	***0.09***	*150,351*	*301,672*

Using the above comparison table, the technology-based mass for the monthly average of O&G is more stringent than the water quality-based mass, and vice versa for the daily maximum of O&G. For the rest of the parameters in this table, the technology-based

masses are much more stringent than the water quality-based masses. Therefore, the technology-based mass limits are used in the permit instead of the water quality-based mass limits. *The concentration limits for O&G are water quality-based in accordance with Reg. 2.510.* As stated above in Section 11.D.5, equivalent technology-based concentrations for *other* pollutants discharging through Outfall 001 are not included in the permit since the receiving stream to effluent dilution factor is greater than 100:1 [EPA Technical Support Document for Water Quality Based Toxics Control, Section 5.7.1, March 1991].

(8) **Mass Permit Limits Included for Outfall 001**

Tier I

Parameter	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)
TSS	235.3	610.9
O&G	78.6	143.9
Chromium (VI)	0.02	0.06
Chromium, Total	0.1	0.3
Lead, Total	0.5	1.6
Nickel, Total	0.08	0.2
Zinc, Total	0.8	2.3
Naphthalene	0.01	0.03
Tetrachloroethylene	0.02	0.04
pH[1]	Minimum 6.0 s.u.	Maximum 9.0 s.u.

[1] There are no mass limits for pH.

Tier II

Parameter	*Monthly Average Limit (lb/day)*	*Daily Maximum Limit (lb/day)*
TSS	*585.3*	*1515.0*
O&G	*195.5*	*356.9*
Chromium (VI)	*0.07*	*0.20*
Chromium, Total	*0.2*	*0.6*
Lead, Total	*1.4*	*4.2*
Nickel, Total	*0.18*	*0.53*
Zinc, Total	*2.0*	*6.0*
Naphthalene	*0.03*	*0.06*
Tetrachloroethylene	*0.04*	*0.09*
pH[1]	*Minimum* *6.0 s.u.*	*Maximum* *9.0 s.u.*

[1] *There are no mass limits for pH.*

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It should be noted that where process wastewater is mixed prior to treatment with wastewaters other than those generated by the regulated process, alternative discharge limits may be derived using the combined wastestream formula, in accordance with 40 CFR 403.6(e). Since this is a new facility, the normal operation of the facility is still unknown. For instance, information submitted with the permit application indicates that one wastewater line will consist of both non-contact cooling water (NCW) and contact cooling water (CW) categorized as dilute and regulated, respectively. Whether the wastewater line will be composed of NCW or CW depends on which basin is being drained. At this time, that distinction is unknown. As another example, the average flow for several wastewater lines will depend on the facility's production, which has been estimated for quantity, but not for frequency of discharge. It is difficult to produce an accurate representation of the wastewater composition going to the main treatment system with this incomplete information. Therefore, it is the recommendation of the permit writer that alternative limits calculated with the combined wastestream formula be considered at the time of permit renewal. It may be appropriate to monitor flow in all wastewater streams going to the main treatment system in order to gather the necessary data for the combined wastestream formula.

12. WHOLE EFFLUENT TOXICITY

Section 101(a)(3) of the Clean Water Act states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life or to interfere with the normal propagation, growth, and survival of aquatic biota."

Whole effluent toxicity (WET) testing is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992.

Whole effluent toxicity testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The whole effluent toxicity testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
48-hour Acute WET	once/quarter

Requirements for measurement frequency are based on the CPP.

DRAFT

Since 7Q10 is greater than 100 cfs (ft^3/sec) and dilution ratio is greater than 100:1, acute WET testing requirements will be included in the permit.

The calculations for dilution used for the acute WET testing are as follows:

Critical Dilution (CD) = $(Q_d / (Q_d + Q_b)) \times 100$
Q_d = Design Flow = 2.853 MGD = 4.41 cfs
7Q10 = 119,000 cfs
Q_b = Background flow = $0.1 \times (0.25)^* \times$ 7Q10 = 2,975 cfs
CD = (4.41 / (4.41 + 2,975)) × 100 = 0.15%
* Mixing zone value is based on the 2000 CPP: Appendix D – Mixing Zone Policy, p. D-11.

Toxicity tests shall be performed in accordance with protocols described in "Methods for Measuring the Acute Toxicity of Effluent to Freshwater and Marine Organisms," EPA/600/4-90/027. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are ***0.06%, 0.08%, 0.11%, 0.15%,*** *and* ***0.20%*** (See the CPP). The low-flow effluent concentration (critical dilution) is defined as **0.15%** effluent. The requirement for acute WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species *Daphnia pulex* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be reported according to EPA-821-R-02-012, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing data submitted to the Department shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 CFR 122.62, as adopted by reference in APCEC Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8-4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

The following information summarizes toxicity tests submitted by the permittee during the term of the current permit at outfall ***001:***

DRAFT

Permit Number:	AR0052582		AFIN:	47-00991	Outfall Number: 001
Date of Review:	13/3/19		Reviewer:	M. Barnett	
Facility Name:	Big River Steel LLC				
Previous Dilution series:	0.02, 0.03, 0.04, 0.06, 0.08	Proposed Dilution Series:		0.06, 0.08, 0.11, 0.15, 0.20	
Previous Critical Dilution:	0.06	Proposed Critical Dilution:		0.15%	
Previous TRE activities:	None				

Frequency recommendation by species	
Pimephales promelas (Fathead minnow):	once per quarter
Daphnia pulex (water flea):	once per quarter

TEST DATA SUMMARY

	Vertebrate (*Pimephales promelas*)		Invertebrate (*Daphnia pulex*)	
TEST DATE	Lethal NOEC		Lethal NOEC	
3/31/2017	0.08		0.08	
6/30/2017	0.08		0.08	
9/30/2017	0.08		0.08	
12/31/2017	0.08		0.08	
3/31/2018	0.06		0.08	
6/30/2018	0.06		0.08	
9/30/2018	0.08		0.08	
12/31/2018	0.08		0.08	
3/31/2019	0.08		0.08	
6/30/2019	0.06		0.08	
9/30/2019	0.08		0.08	

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal		**Invertebrate Lethal**	
Min NOEC Observed	0.06		0.08	
TU at Min Observed	1666.67		1250.00	
Count	11		11	
Failure Count	0		0	
Mean	1363.636		1250.000	
Std. Dev.	194.625		0.000	
CV	0.1		0	
RPMF	1.1		0	
Reasonable Potential	2.750		0.000	
100/Critical dilution	66666.667		66666.667	
Does Reasonable Potential Exist	No		No	

PERMIT ACTION

P. promelas acute - monitoring
D. pulex acute - monitoring

13. STORMWATER REQUIREMENTS

The federal regulations at 40 CFR 122.26(a)(1)(ii) and 40 CFR 122.26(b)(14) require certain industrial sectors to have NPDES permit coverage for stormwater discharges from the facility prior to operation. These requirements include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control the quality of stormwater

discharges from the facility. *This facility was issued stormwater permit coverage under NPDES Tracking number ARR001578*.

14. **SAMPLE TYPE AND FREQUENCY**

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR Part 122.48(b)] and to ensure compliance with permit limitations [40 CFR Part 122.44(i)(l)].

Requirements for sample type and sampling frequency for Outfall 001 were based on the EPA's recommended frequencies for self-monitoring of discharges within the flow of >1.0 to 5.0 MGD. Requirements for sample type and sampling frequency for Outfall 002 were based on the EPA's recommended frequencies for self-monitoring of discharges within the flow of 0 to 0.05 MGD.

Parameter	Final Permit	
	Frequency of Sample	Sample Type
Outfall 001		
Flow	once/day	totalizing meter
TSS	once/week	composite
O&G	once/week	grab
Chromium (VI)	once/week	composite
Chromium, Total	once/week	composite
Lead, Total	once/week	composite
Nickel, Total	once/week	composite
Zinc, Total	once/week	composite
Naphthalene	once/week	composite
Tetrachloroethylene	once/week	composite
pH	once/week	grab
Acute WET Testing	once/quarter	24-hr composite
Outfall 002		
Flow	two/week	calculated
TSS	once/quarter	grab
O&G	once/quarter	grab

Parameter	Final Permit	
	Frequency of Sample	Sample Type
pH	once/month	grab

15. **PERMIT COMPLIANCE SCHEDULE**

A Schedule of Compliance has not been included in this permit.

16. **MONITORING AND REPORTING**

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

17. **SOURCES**

The following sources were used to draft the permit:

A. *Permit Modification Application No. AR0052582 and state construction permit application No. AR0052582C received on October 30, 2019, with additional information received November 5, 2019*.
B. Arkansas Water Quality Management Plan (WQMP).
C. APCEC Regulation No. 2.
D. APCEC Regulation No. 3.
E. APCEC Regulation No. 6, which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Reg. 6.104.
F. 40 CFR Parts 122 and 125.
G. 40 CFR Part 420 - Subparts: D, E, F, G, I, J, K, and L.
H. Discharge permit file AR0052582.
I. Discharge Monitoring Reports (DMRs).
J. "2016 Integrated Water Quality Monitoring and Assessment Report," ADEQ.
K. "2016 List of Impaired Waterbodies (303(d) List)," ADEQ, July 2017.
L. USGS StreamStats web-based program.
M. Continuing Planning Process (CPP).
N. Technical Support Document for Water Quality-based Toxic Control (EPA, March 1991).
O. EPA NPDES Permit Writers' Manual, September 2010.
P. *Compliance Review Memo from Myrl Lawrence to Terry Liu dated November 13, 2019*.
Q. *EPA No Objection to Preliminary Draft Permit Letter, dated February 13, 2020, from Brent E. Larsen of EPA to Bryan Leamons of ADEQ*.

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18. **POINT OF CONTACT**

For additional information, contact:

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