

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0044121

Owner: The Procter & Gamble Paper Product Company  
Address: P.O. Box 400, Cape Girardeau, MO 63701-0400

Continuing Authority: Same as above  
Address: Same as above

Facility Name: The Procter & Gamble Paper Products Company  
Facility Address: 14484 State Highway 177, Jackson, MO 63755

Legal Description: See page two (2) & three (3)  
UTM Coordinates: See page two (2) & three (3)

Receiving Stream: See page two (2) & three (3)  
First Classified Stream and ID: See page two (2) & three (3)  
USGS Basin & Sub-watershed No.: See page two (2) & three (3)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page two (2) & three (3)

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

January 28, 2011  
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

January 27, 2016  
Expiration Date

John Madras, Director, Water Protection Program

**FACILITY DESCRIPTION (continued):**

Outfall #001 - Industry - SIC #2621 & #2676

Non-contact cooling water/non-process storm water run-off/fire protection water.

Design Flow (groundwater wells) is 0.03MGD.

Actual Flow is dependent upon precipitation.

Legal Description: NW ¼, SW ¼, Section 4, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808740, Y = 4153742  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #002 - Domestic Wastewater - SIC #4952

Extended aeration (2-units)/ Ultraviolet Disinfection/sludge disposal is by contract hauler to offsite treatment and disposal.  
Design Population Equivalent is 1,000.

Design Flow is 0.1 MGD

Actual Flow is 0.03 MGD

Design sludge production is 6.4 dry tons/year.

Legal Description: NW ¼, SW ¼, Section 4, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808788, Y = 4153790  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #003 - Industry - SIC #2621 & #2676

Non-contact cooling water/non-process storm water run-off/fire protection water.

Design Flow (groundwater wells) is 0.027 MGD.

Actual Flow is dependent upon precipitation.

Legal Description: NE ¼, SW ¼, Section 4, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 809155, Y = 4154175  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #004 - Industry - Main Facility Outfall - SIC #2621 & #2676

Flow Equalization Tank/ pH adjustment/ diffused air floatation (DAF)/ wastewater effluent from DAF pumped to a four port diffuser in the Mississippi River/ sludge from the DAF goes to the screw press and then to trailers where it is hauled offsite for recycling.

Design Flow is 4.4 MGD

Actual Flow is 2.27 MGD

Legal Description: Land Grant 00819, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 810204, Y = 4154754  
Receiving Stream: Mississippi River  
First Classified Stream and ID: Mississippi River (P) (03701) 303(d)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #005 - Industry - SIC #2621 & #2676

Non-contact cooling water/non-process storm water run-off/fire protection water.

Design Flow (groundwater wells) is 0.027 MGD.

Actual Flow is dependent upon precipitation.

Legal Description: SW ¼, NW ¼, Section 4, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808952, Y = 4154352  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

FACILITY DESCRIPTION (continued):

Outfall #006 - Industry - SIC #2621 & #2676

Non-contact cooling water/non-process storm water run-off/fire protection water.

Design Flow (groundwater wells) is 0.027 MGD.

Actual Flow is dependent upon precipitation.

Legal Description: S ½, NE ¼, Section 4, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808818, Y = 4154625  
Receiving Stream: Opossum Creek  
First Classified Stream and ID: Turkey Creek (P) (1829)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #007 - Industry - SIC #2621 & #2676

Non-contact cooling water/non-process storm water run-off/fire protection water.

Design Flow (groundwater wells) is 0.027 MGD.

Actual Flow is dependent upon precipitation.

Legal Description: S ½, NE ¼, Section 4, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808818, Y = 4154625  
Receiving Stream: Opossum Creek  
First Classified Stream and ID: Turkey Creek (P) (1829)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>	PAGE NUMBER 4 of 12
	PERMIT NUMBER MO-0044121

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001, 003, 005, 006, &amp; 007</u>						
Flow	MGD	*		*	once/month	24 hr. estimate
pH – Units	SU	**		**	once/month	grab
Temperature	°F	90°		90°	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #002</u>						
E. coli (Note 1)	#/100 mL	1030		206	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2011. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

**B. STANDARD CONDITIONS**

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 5 of 12																																																									
					PERMIT NUMBER MO-0044121																																																									
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until two (2) years and 364 days after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:																																																														
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS																																																									
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The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective three (3) years from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:																																																														
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS																																																									
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MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>April 28, 2014</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.																																																														
<b>B. STANDARD CONDITIONS</b>																																																														
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.																																																														

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 6 of 12	
					PERMIT NUMBER MO-0044121	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b>Outfall #004</b>						
Flow	MGD	*		*	once/day	24 hr. Total
Biochemical Oxygen Demand <sub>5</sub>	lb/day	11,340		5,508	twice/week	24 hr. composite
Total Suspended Solids	lb/day	9,720		4,212	twice/week	24 hr. composite
pH – Units	SU	**		**	twice/week	grab
Oil & Grease	mg/L	15		10	twice/week	grab
Sulfate	mg/L	*		*	once/month	grab
Chloroform	mg/L	*		*	once/month	grab
Pentachlorophenol	lb/day	4.5		4.5	once/month	grab
	mg/L	0.24		0.24	once/month	grab
2,4,5-Trichlorophenol	lb/day	1.6		1.6	once/month	grab
	mg/L	0.08		0.08	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>March 28, 2011</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>Outfall #004 – Industrial Wastewater Outfall</b>						
Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions			twice/year	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED <u>TWICE PER YEAR</u> ; THE FIRST REPORT IS DUE <u>July 28, 2011</u> .						
<b>Outfall #002 – Domestic Wastewater Outfall</b>						
Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions			once/permit cycle	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>August 28, 2015</u> .						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued):

\*\*\* See table below for quarterly sampling.

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

Note 1 – Final effluent limits of 1030 cfu per 100 mL as a Daily Maximum and 206 cfu per 100 mL as a Monthly Average are applicable from April 1 to October 31 each year. The Monthly Average for *E. coli* is to be reported as a geometric mean.

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) One hundred micrograms per liter (100 µg/L);
    - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
    - (4) The level established in Part A of the permit by the Director.
  - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
  6. Water Quality Standards
    - (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
    - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

D. SPECIAL CONDITIONS (continued)

- (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
- (5) There shall be no significant human health hazard from incidental contact with the water;
- (6) There shall be no acute toxicity to livestock or wildlife watering;
- (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
- (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT					
OUTFALL	AEC	LC50%*	FREQUENCY	SAMPLE TYPE	MONTH
002	100%	100%	Once/permit Cycle	24 hr. Composite	Sample in June of 4 <sup>th</sup> year of the permit, report August 28 <sup>th</sup> of 4 <sup>th</sup> year of permit.
004	9.1%	30.3%	Twice/year	24 hr. Composite	Sample in May, report in July 28 <sup>th</sup> . Sample in August, report in October 28 <sup>th</sup> .

\* LC50 = AEC / 0.3.

Outfall	Dilution Series						
#002	100%	50%	25%	12.5%	6.25%	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water
#004	36.4%	18.2%	9.1%	4.6%	1.1%	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
  - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
  - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
  - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
  - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
  - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
  - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
  - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.

D. SPECIAL CONDITIONS (continued)

7. WET testing (continued):

- (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
  - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
  - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
  - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
  - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
  - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
- (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
  - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
- (5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
    - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC<sub>50</sub> concentration for the most sensitive of the test organisms; **OR**,
    - (b) For facilities with an AEC greater than 30%, the LC<sub>50</sub> concentration must be greater than 100%; **AND**,

D. SPECIAL CONDITIONS (continued)

7. WET testing (continued):

- (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required.

(c) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
- (3) Test species: *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Unless otherwise specified above, multiple-dilution tests will be run with:
  - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
  - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
  - (c) Reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

## SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

### Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test acceptability criterion:	90% or greater survival in controls

### Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test Acceptability criterion:	90% or greater survival in controls

E. SCHEDULE OF COMPLIANCE

Outfall #002

1. The permittee will come into compliance with the effluent limitation for Total Ammonia as Nitrogen in Outfall #002's Table A – Final Effluent Limits as soon as possible but not to exceed three (3) years.
2. The permittee shall submit annual reports on the anniversary date of the effective date of this operating permit. The annual report shall include determinations made or steps taken to come into compliance with Outfall #002's Table A – Final Effluent Limits, Total Ammonia as Nitrogen.
3. If the permittee determines that no modification to this operating permit or their facility is needed to meet Outfall #002's Table A – Final Effluent Limits, then the permittee may apply for a permit modification to have this portion of the Schedule of Compliance modified.

**Missouri Department of Natural Resources**  
**FACT SHEET**  
**FOR THE PURPOSE OF RENEWAL**  
**OF**  
**MO-0044121**  
**THE PROCTER & GAMBLE PAPER PRODUCTS COMPANY**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major , Minor , Industrial Facility ; Variance ;  
Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

**Part I – Facility Information**

Facility Type: INDUSTRIAL  
Facility SIC Code(s): #2676 Sanitary Paper Products; #2621 Paper Mills; #4952 Domestic Waste

Facility Description:

This facility manufactures disposable paper products: diapers, tissues, and towels. This facility consist of a total of seven (7) discharging outfalls with various treated effluent. Each outfall's description is described below:

Outfall #001:

Consist of non-contact coolant water from three (3) ground water wells used for either one (1) evaporative cooling unit, or one (1) of the two (2) heating/ventilating air condition units. Outfall #001 also consist of storm water run-off from the facility's roof and grounds (**need to determine if applicable**). Additionally, Outfall #001 consists of fire protection water. Outfall #001 has a Design Flow of **0.03 MGD** based on groundwater wells.

Outfall #002:

Consist of domestic wastewater from various restrooms, sinks, water fountains and kitchen facilities. Domestic wastewater is treated via one (1) of two (2) Extended Aeration cells and UV disinfection. Sludge disposal is by contract hauler to offsite treatment and disposal. The Design flow for the domestic wastewater treatment facility is **0.1 MGD**, with a Design Sludge Production of 6.4 dry tons/year.

Outfall #003:

Consist of non-contact coolant water from three (3) ground water wells used for either one (1) evaporative cooling unit, or one (1) of the two (2) heating/ventilating air condition units. Outfall #003 also consist of storm water run-off from the facility's roof and grounds. Additionally, Outfall #003 consists of fire protection water. Outfall #003 has a Design Flow of **0.027 MGD** based on groundwater wells.

Outfall #004:

Consist of process wastewater is first subjected to the Densadeg Clarifier, which is a high-rate solids contact clarifier that combines optimized flocculation, internal and external sludge recirculation, and plate settling. After the Densadeg Clarifier, wastewater is subjected to the ABW Filters, where the process flow is split. A portion of the flow is directed to three (3) Paper-machines, Cooling Towers, Fiber Recovery, and Miscellaneous. The other portion of the process flow after the ABW Filter split is pumped to the Boilers. All process flow is then combined and pumped to a 300,000 gallon Equalization Tank (EQ tank).

Outfall #004 (continued):

Process water from the EQ tank is then treated via Dissolved Air Flotation Unit (DAF), which can process 2800 to 3000 gallons per minute. Process water from the DAF is pumped to a four port diffuser located in the Mississippi River.

The EQ tank also receives wastewater generated from the facility's process solids dewater (industrial). This wastewater can go either to a 750,000 gallon spill tank or to the EQ tank. Additionally, wastewater from the process flow can enter into the EQ tank or spill tank depending upon the EQ tanks availability.

The average flow and (maximum flows) for each process is as follows:

Paper Machines (3 units): 2.3 (3.6) MGD.  
Boiler (3 units): 0.22 (0.4) MGD.  
Cooling Towers: 0.12 (0.2) MGD.  
Fiber Recovery: 0.9 (1.1) MGD.  
Miscellaneous Uses: 0.04 (0.3) MGD.

Miscellaneous Uses means: water used to clean paper product or similar from facility floor and is treated in the process of the EQ tank, as noted above. Please see **APPENDIX A – PROCESS FLOW DIAGRAM FOR OUTFALL #004.**

Outfall #005

Consist of non-contact coolant water from three (3) ground water wells used for either one (1) evaporative cooling unit, or one (1) of the two (2) heating/ventilating air condition units. Outfall #005 also consist of storm water run-off from the facility's roof and grounds. Additionally, Outfall #005 consists of fire protection water. Outfall #005 has a Design Flow of **0.027 MGD** based on groundwater wells.

Outfall #006

Consist of non-contact coolant water from three (3) ground water wells used for either one (1) evaporative cooling unit, or one (1) of the two (2) heating/ventilating air condition units. Outfall #006 also consist of storm water run-off from the facility's roof and grounds. Additionally, Outfall #006 consists of fire protection water. Outfall #006 has a Design Flow of **0.027 MGD** based on groundwater wells.

Outfall #007

Consist of non-contact coolant water from three (3) ground water wells used for either one (1) evaporative cooling unit, or one (1) of the two (2) heating/ventilating air condition units. Outfall #007 also consist of storm water run-off from the facility's roof and grounds. Additionally, Outfall #007 consists of fire protection water. Outfall #007 has a Design Flow of **0.027 MGD** based on groundwater wells.

Application Date: January 11, 2010  
Expiration Date: July 14, 2010  
Last Inspection: March 19, 2009 In Compliance ; Non-Compliance

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.05	BMP*	Non-contact cooling water/ storm water run-off	0.11
002	0.02	<b>Secondary Treatment</b>	Domestic	0.11
003	0.04	BMP*	Non-contact cooling water/ storm water run-off	0.29
004	6.82	Industrial	Industrial Process	0.0
005	0.04	BMP*	Non-contact cooling water/ storm water run-off	0.36
006	0.04	BMP*	Non-contact cooling water/ storm water run-off	0.17
007	0.04	BMP*	Non-contact cooling water/ storm water run-off	0.17

\* - BMP means best management practice

Outfall #001

Legal Description: NW ¼, SW ¼, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808740, Y = 4153742  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #002

Legal Description: NW ¼, SW ¼, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808788, Y = 4153790  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #003

Legal Description: NE ¼, SW ¼, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 809155, Y = 4154175  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #004

Legal Description: Land Grant 00819  
UTM Coordinates: X = 810204, Y = 4154754  
Receiving Stream: Mississippi River  
First Classified Stream and ID: Mississippi River (P) (03701) 303(d)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #005

Legal Description: SW ¼, NW ¼, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808952, Y = 4154352  
Receiving Stream: Unnamed tributary to Indian Creek  
First Classified Stream and ID: Indian Creek (P) (01828)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Outfall #006 & #007

Legal Description: S ½, NE ¼, T32N, R14E, Cape Girardeau County  
UTM Coordinates: X = 808818, Y = 4154625  
Receiving Stream: Opossum Creek  
First Classified Stream and ID: Turkey Creek (P) (1829)  
USGS Basin & Sub-watershed No.: (07150105 – 150001)

Receiving Water Body's Water Quality & Facility Performance History:

The Mississippi River is listed on the 2008 Missouri 303(d) List for Lead and Zinc impairment, and is also still listed on the 2002 Missouri 303(d) List for PCB and Chlordane. One effluent limitation violation noted in data base for Fecal Coliform for December 2007; however, staff drafting this operating permit believe that this is in error because the Fecal Coliform is a seasonal limitation from April to October only and there is no special condition regarding the receiving stream having year round bacteria limits.

Comments:

In 1997 this facility altered the treatment of the process wastewater treatment to include the DAF unit. Because of this treatment modification this facility's Effluent Limit Guidelines are now based on New Source Performance Standards (NSPS), per 40 CFR Part 122.29. However, it should be stated that the effective operating permit's (expires in July 2010) effluent limitations were based on NSPS guidelines from 40 CFR Part 430.125, Subpart L.

Staff drafting this operating permit conducted a site-visit of this facility to document the need for the storm water outfalls and/or applicable parameters associated with storm water run-off. The source of storm water run-off from this facility was verified that it came from either parking lots or roof drains. Thus, storm water parameters (TSS, COD, & O&G) will not be included in this operating permit.

**Part II – Operator Certification Requirements**

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Not Applicable ; This facility is not required to have a certified operator.

**Part III – Receiving Stream Information**

**APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE:**

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed tributary to Indian Creek	U	---	General Criteria	07150105	Ozark/ Apple/ Jochim
Opossum Creek	U	---	General Criteria		
Indian Creek	P	1828	LWW, AQL, WBC(B)***		
Turkey Creek	P	1829	LWW, AQL, WBC(B)***		
Mississippi River	P	3701	IRR, LWW, AQL, SCR, DWS, IND, WBC(B)****		

\* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

\*\* - Ecological Drainage Unit

\*\*\* - UAA has not been conducted.

\*\*\*\* - UAA has been conducted, no regulation change at this time. WBC(B) is retained.

**RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:**

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed tributary to Indian Creek	0.0	0.0	0.0
Opossum Creek	0.0	0.0	0.0
Mississippi River	60883	64570	70857

**MIXING CONSIDERATIONS TABLE:**

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(a)]		ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(b)*]	
7Q10	30Q10	1Q10	7Q10
16143	17714	68.2	68.2

\* - As per 10 CSR 20-7.031(4)(A)4.B.(III)(b), a ZID is 1/10 of the Mixing Zone and no more than 10 times the effluent design flow unless the use of diffusers or specific mixing zone studies can justify more dilution.

**RECEIVING STREAM MONITORING REQUIREMENTS:**

The previous state operating permit contained Receiving Stream monitoring points. The first was approximately 150 feet below Outfall #004 and the second was ¼ mile below Outfall #004. Staff drafting this operating permit reviewed all the parameters of concern for both Receiving Stream monitoring locations, which include BOD<sub>5</sub>, COD, and Dissolved Oxygen. The BOD and COD parameters were at insignificant levels and Dissolved Oxygen results were all significantly above Missouri’s Water Quality Standards of 5.0 mg/L. Additionally, the Receiving Stream monitoring location 150 feet below Outfall #004 had a WET testing requirement. All WET testing results received a Pass. No further receiving water monitoring requirements recommended at this time.

**Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions**

**ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

**ANTI-BACKSLIDING:**

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

**ANTIDegradation:**

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

**AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:**

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the department.

**BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:**

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Applicable ;

Sludge from this facility is hauled by contractor to offsite facilities for treatment and/or disposal.

**COMPLIANCE AND ENFORCEMENT:**

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ;

The permittee/facility is not currently under Water Protection Program enforcement action.

**PRETREATMENT PROGRAM:**

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ;

The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

**REASONABLE POTENTIAL ANALYSIS (RPA):**

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Applicable ;

A RPA was conducted on appropriate parameters. Please see **APPENDIX B – RPA RESULTS**.

**REMOVAL EFFICIENCY:**

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ [www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm](http://www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm).

Not Applicable ;

Influent monitoring is not being required to determine percent removal.

**SANITARY SEWER OVERFLOWS (SSOs), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:**

Sanitary Sewer Systems (SSSs) are municipal wastewater collection systems that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSOs is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks,

and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

Not Applicable ;

This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

**SCHEDULE OF COMPLIANCE (SOC):**

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ;

The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)] and/or [10 CSR 20-6.010(7)].

For Outfall #002, a SOC for three (3) years was established for Total Ammonia as Nitrogen. This time will allow the facility to determine if they can meet the new proposed effluent limitations or if an upgrade/expansion is needed.

For Outfall #004, the permittee has documented that they can meet the new pH and Oil & Grease effluent limitations, no SOC given. Additionally, they are based on appropriate ELGs.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP):**

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

SWPPP (continued):

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Not Applicable ;

As documented in this fact sheet in the initial comment section under Part I, staff drafting this operating permit conducted a site-visit to confirm the need or removal of storm water run-off outfalls and/or parameters. Staff documented that the source for the storm water was either from parking lots or roof drainage. Staff did not observe any source of pollutants that could be exposed to weather. Therefore, storm water run-off parameters of TSS, COD, and Oil & Grease have been removed from this operating permit; however, the outfalls that did discharge the storm water will not be removed as they also discharge non-contact cooling water.

**VARIANCE:**

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ;

This operating permit is not drafted under premises of a petition for variance.

**WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:**

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ;

Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration  
Cs = upstream concentration  
Qs = upstream flow  
Ce = effluent concentration  
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

**WLA MODELING:**

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ;

A WLA study was either not submitted or determined not applicable by department staff.

**WATER QUALITY STANDARDS:**

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

**WHOLE EFFLUENT TOXICITY (WET) TEST FOR OUTFALL #002:**

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

For Outfall #002

Applicable ;

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing are also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH<sub>3</sub>)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
- Other – Please justify.

For Outfall #004

Applicable ;

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing are also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH<sub>3</sub>)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

**303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):**

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

303(d) & TMDL (section):

Applicable ;

The Mississippi River is listed on the 2008 Missouri 303(d) List for Lead and Zinc impairment, and is also still listed on the 2002 Missouri 303(d) List for PCB and Chlordane. The Mississippi River TMDL for Lead and Zinc list the impairment as localized immediately downstream of the Herculaneum smelter and does not extend as far south as Cape Girardeau. This facility is not considered to be a source or contributor to either 303(d) impairment.

**Part V – Effluent Limits Determination**

**Outfall #001, #003, #005, #006 & #007** - Non-contact cooling water and fire suppression. Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supercede the terms and conditions, including effluent limitations, of this operating permit. Unless otherwise specified, the parameters below are applicable to all outfalls listed above.

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	NO	
TEMPERATURE	°C	2	90°F		90°F	YES	**
pH	MG/L	2	6.5 – 9.0		6.5 – 9.0	YES	6.0 – 9.0
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

\* - Monitoring requirement only.

\*\* - Previous state operating permit contained a 90°F effluent limit as a Daily Maximum. Federal regulation requires both short term (i.e., Daily Maximum or Weekly Average) and Long Term (i.e., Monthly Average) in state operating permits.

Basis for Limitations Codes:

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #001, #003, #005, #006, & #007 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **pH.** pH is limited to the range of 6.5 to 9.0 pH Standard Units and is not to be averaged, as per 10 CSR 20-7.031(4)(E). Staff drafting this operating permit has reviewed DMRs submitted for these outfalls over the past five (5) years and have documented that this facility can meet the new proposed pH range of 6.5 – 9.0 with no documented potential excursions. Therefore, the new pH range will be effective upon issuance of the operating permit.
- **Temperature.** 90°F as a Daily Maximum and Monthly Average as per 10 CSR 20-7.031(4)(D)1. Staff drafting this operating permit has reviewed DMRs submitted for these outfalls over the past five (5) years and have documented that this facility can meet the temperature limit of 90°F for both a MDL and AML with no documented potential excursions. Therefore, the temperature limit for both a MDL and AML will be effective upon issuance of this operating permit.
- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit.

**Outfall #002 – Domestic wastewater**

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supercedes the terms and conditions, including effluent limitations, of this operating permit.

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	
BOD <sub>5</sub>	MG/L	1		45	30	NO	
TSS	MG/L	1		45	30	NO	
pH	SU	2	6.5–9.0		6.5–9.0	YES	6.0–9.0
TEMPERATURE	°C	9	*		*	YES	**
AMMONIA AS N (MAY 1 – OCT 31)	MG/L	2/3	3.7		1.4	YES	**
AMMONIA AS N (NOV 1 – APR 30)	MG/L	2/3	7.5		2.8	YES	**
FECAL COLIFORM	***	1/2	1000		400***	NO	
E. COLI	***	1/2	1030		206	YES	**
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

\* - Monitoring requirement only.

\*\* - Parameter not previously established in previous state operating permit.

\*\*\* - Fecal Coliform and E. coli Units are in colonies per 100 mL and the Monthly Average for both is a Geometric Mean.

Basis for Limitations Codes:

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **pH.** pH is limited to the range of 6.5 to 9.0 pH Standard Units and is not to be averaged, as per 10 CSR 20-7.031(4)(E).
- **Temperature.** Monitoring requirement due to the toxicity of Ammonia varies by temperature.

- Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU First receiving stream is not classified; therefore, mixing considerations are not allowed. Additionally, the first receiving stream is approximately 0.11 miles from the 1<sup>st</sup> classified stream. Ammonia decay amounts have been found for facilities similar in size (0.1 MGD) to have insignificant Ammonia decay. Because mixing considerations are not allowed, the applicable criteria are established as the appropriate WLA for both Chronic and Acute.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: May 1 – October 31

Chronic WLA = 1.5 mg/L

Acute WLA = 12.1 mg/L

$LTA_c = 1.5 \text{ mg/L} (0.780) = \mathbf{1.2 \text{ mg/L}}$

[CV = 0.6, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

$MDL = 1.2 \text{ mg/L} (3.11) = 3.7 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 1.2 \text{ mg/L} (1.19) = 1.4 \text{ mg/L}$

[CV = 0.6, 95<sup>th</sup> Percentile, n =30]

Winter: November 1 – April 30

Chronic WLA = 3.1 mg/L

Acute WLA = 12.1 mg/L

$LTA_c = 3.1 \text{ mg/L} (0.780) = \mathbf{2.4 \text{ mg/L}}$

[CV = 0.6, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

$MDL = 2.4 \text{ mg/L} (3.11) = 7.5 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 2.4 \text{ mg/L} (1.19) = 2.8 \text{ mg/L}$

[CV = 0.6, 95<sup>th</sup> Percentile, n =30]

The permittee can submit an Ammonia Decay, which may reduce the Total Ammonia as Nitrogen effluent limitations.

- Escherichia coli (E. coli).** Monthly average of 206 per 100 mL as a geometric mean and a Daily Maximum of 1030 per 100 mL during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). Daily Maximum effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d). Testing conducted by the permitted has documented that E. coli limits are achievable upon issuance of this operating permit.

- WET Test.** WET Testing schedules and intervals are established in accordance with the department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Chronic

Acute

**No less than ONCE/PERMIT CYCLE:**

Municipality or domestic facility with a design flow  $\geq 22,500 \text{ gpd}$ , but less than 1.0 MGD.

Other, please justify.

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to unclassified, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

- Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit.

**Outfall #004 – Main Facility Outfall**

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supercede the terms and conditions, including effluent limitations, of this operating permit.

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	
BOD <sub>5</sub>	LB/DAY	1	11,340		5,508	YES	11312 / 5494
TSS	MG/L	1	9,720		4,212	YES	9696 / 4202
pH	SU	2	6.5 – 9.0		6.5 – 9.0	YES	6.0 – 9.0
OIL & GREASE	MG/L	2	15		10	YES	20 / 15
SULFATE	MG/L	2/3	*		*	NO	
CHLOROFORM	MG/L	2/3	*		*	YES	349 / 174
PENTACHLOROPHENOL	LB/DAY	1	4.5		4.5	YES	**
	MG/L	1	0.24		0.24	YES	**
2,4,5-TRICHLOROPHENOL	LB/DAY	1	1.6		1.6	YES	**
	MG/L	1	0.08		0.08	YES	**
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

\* - Monitoring requirement only.

\*\* - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #004 – DERIVATION AND DISCUSSION OF LIMITS:**

The above Effluent Limitation Table for Outfall #004 is comprised of only the more stringent of limitations between Technology-based Effluent Limits (TBELs) from the federal Effluent Guidelines 40 CFR Part 430.125 vs. Water Quality-based Effluent Limitations (WQBELs) from the Missouri Water Quality Standards. In the case of a pollutant's Water Quality being determined as not having a reasonable potential and there is an existing federal Effluent Guideline Limitation (ELG), the federal ELG will be established. The derivation for both TBELs and WQBELs are below.

**Technology-based Effluent Limitations**

This facility is subject to 40 CFR Part 430, Subpart L – Tissue, Filter, Non-woven, and Paperboard Product from Purchased Pulp. Furthermore, this facility is subject to 40 CFR Part 430.125 New Source Performance Standards, which includes BOD<sub>5</sub>, TSS, pH, Pentachlorophenol, and Trichlorophenol. The limit derivations are as follows:

- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** 40 CFR 430.125 establishes a Daily Maximum limitation of 7.0 lb/1000 lb of product, and a Monthly Average of 3.4 lb/1000 lb of product. Permittee has documented in their renewal application that they produced 1.62 Million lb of paper product.

Daily Maximum BOD<sub>5</sub> = [(pounds of product) \* (ELG)]  
Daily Maximum BOD<sub>5</sub> = [(1,620,000 lb/day of product) \* (7.0 lb/1000 lb of product)]  
Daily Maximum BOD<sub>5</sub> = 11,340 lb/day

Monthly Average BOD<sub>5</sub> = [(pounds of product) \* (ELG)]  
Monthly Average BOD<sub>5</sub> = [(1,620,000 lb/day of product) \* (3.4 lb/1000 lb of product)]  
Monthly Average BOD<sub>5</sub> = 5,508 lb/day

- **Total Suspended Solids.** 40 CFR 430.125 establishes a Daily Maximum limitation of 6.0 lb/1000 lb of product, and a Monthly Average of 2.6 lb/1000 lb of product. Permittee has documented in their renewal application that they produced 1.62 Million lb of paper product per day.

$$\begin{aligned}\text{Daily Maximum TSS} &= [(\text{pounds of product}) * (\text{ELG})] \\ \text{Daily Maximum TSS} &= [(1,620,000 \text{ lb/day of product}) * (6.0 \text{ lb/1000 lb of product})] \\ \text{Daily Maximum TSS} &= 9,720 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{Monthly Average TSS} &= [(\text{pounds of product}) * (\text{ELG})] \\ \text{Monthly Average TSS} &= [(1,620,000 \text{ lb/day of product}) * (2.6 \text{ lb/1000 lb of product})] \\ \text{Monthly Average TSS} &= 4,212 \text{ lb/day}\end{aligned}$$

- **pH.** 40 CFR 430.125 establishes a pH limitation range of 5.0 to 9.0 Standard pH units at all times.
- **Pentachlorophenol.** 40 CFR 430.125 first establishes that Pentachlorophenol has a lb/day Daily Maximum limitation and a mg/L Daily Maximum. The lb/day Daily Maximum ELG is 0.0028 lb/1000 lb of product. The mg/L Daily Maximum is  $[(0.035)(19.1)/y]$ ; where  $y$  = wastewater discharged in kgal per ton at all times. Permittee has documented in their renewal application that they produced 1.62 Million lb of paper product per day. Additionally, submitted Discharge Monitoring Reports document that the average flow from Outfall #004 is 2.27 MGD.

$$\begin{aligned}\text{Daily Maximum Pentachlorophenol (lb/day)} &= [(\text{pounds of product}) * (\text{ELG})] \\ \text{Daily Maximum Pentachlorophenol (lb/day)} &= [(1,620,000 \text{ lb/day of product}) * (0.0028 \text{ lb/1000 lb of product})] \\ \text{Daily Maximum Pentachlorophenol (lb/day)} &= 4.5 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{Daily Maximum Pentachlorophenol (mg/L)} &= [(0.035)(19.1)/y] \\ y &= [(\text{Average flow in Gallons per day})(\text{CF})/(\text{tons of product per day})] \\ y &= [(2,270,000 \text{ gpd})(1\text{kgal}/1000 \text{ gallons})/(810 \text{ tons of product per day})] \\ y &= 2.8 \text{ kgal/ton; therefore}\end{aligned}$$

$$\begin{aligned}\text{Daily Maximum Pentachlorophenol (mg/L)} &= [(0.035)(19.1)/2.8 \text{ kgal/ton}] \\ \text{Daily Maximum Pentachlorophenol (mg/L)} &= 0.24 \text{ mg/L}\end{aligned}$$

- **Trichlorophenol.** 40 CFR 430.125 first establishes that Pentachlorophenol has a lb/day Daily Maximum limitation and a mg/L Daily Maximum. The lb/day Daily Maximum ELG is 0.00096 lb/1000 lb of product. The mg/L Daily Maximum is  $[(0.012)(19.1)/y]$ ; where  $y$  = wastewater discharged in kgal per ton at all times. Permittee has documented in their renewal application that they produced 1.62 Million lb of paper product per day. Additionally, submitted Discharge Monitoring Reports document that the average flow from Outfall #004 is 2.27 MGD.

$$\begin{aligned}\text{Daily Maximum Trichlorophenol (lb/day)} &= [(\text{pounds of product}) * (\text{ELG})] \\ \text{Daily Maximum Trichlorophenol (lb/day)} &= [(1,620,000 \text{ lb/day of product}) * (0.00096 \text{ lb/1000 lb of product})] \\ \text{Daily Maximum Trichlorophenol (lb/day)} &= 1.6 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{Daily Maximum Trichlorophenol (mg/L)} &= [(0.012)(19.1)/y] \\ y &= [(\text{Average flow in Gallons per day})(\text{CF})/(\text{tons of product per day})] \\ y &= [(2,270,000 \text{ gpd})(1\text{kgal}/1000 \text{ gallons})/(810 \text{ tons of product per day})] \\ y &= 2.8 \text{ kgal/ton; therefore}\end{aligned}$$

$$\begin{aligned}\text{Daily Maximum Trichlorophenol (mg/L)} &= [(0.012)(19.1)/2.8 \text{ kgal/ton}] \\ \text{Daily Maximum Trichlorophenol (mg/L)} &= 0.08 \text{ mg/L}\end{aligned}$$

There are different versions of Trichlorophenol, but Missouri's Water Quality Standards only contain two different versions, which include 2,4,5-Trichlorophenol and 2,4,6-Trichlorophenol. For the purpose of comparing the ELG, staff believe that it is the 2,4,5-Trichlorophenol that is being utilized. As per, the 2,4,5-Trichlorophenol Fact Sheet, "The paper and pulp mills use 2,4,5-Trichlorophenol as a fungicide to destroy or prevent fungi from growing. Data obtained from the web address below:

<http://www.epa.gov/waste/hazard/wastemin/minimize/factshts/trichlph.pdf>

**Outfall #004 - Water Quality-based Effluent Limitations & Other parameters not subject to TBELs**

For BOD<sub>5</sub> and TSS, there are no Missouri Water Quality Standards (WQS); therefore, there is no comparison. For pH, Pentachlorophenol, and Trichlorophenol there are WQS. The remaining pollutant parameters derivation not subject to both WQBELs and TBELs will be derived and/or discussed below.

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **pH.** pH is limited to the range of 6.5 to 9.0 pH Standard Units and is not to be averaged, as per 10 CSR 20-7.031(4)(E).
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Chloroform.** Monitoring only requirement. The previous state operating permit contained a Chloroform effluent limitation; however, after conducting a Reasonable Potential Analysis on Chloroform, it was determined to not have reasonable potential to cause or contribute to exceedances of Missouri's Water Quality Standards.
- **Sulfate (SO<sub>4</sub>).** Monitoring only requirement. The previous state operating permit contained a Sulfate effluent limitation; however, after conducting a Reasonable Potential Analysis on Sulfate, it was determined to not have reasonable potential to cause or contribute to exceedances of Missouri's Water Quality Standards.
- **Pentachlorophenol.** The federal ELG list Pentachlorophenol; therefore, either a TBEL or WQBEL is need in this operating permit. Protection of Aquatic Life is based on pH. The average pH of the Mississippi River at Thebes Gauging Station 07022000 is 7.9 pH Standard Units, which is 14 µg/L. Protection of Human Health-Fish Consumption is 8 µg/L. Protection of Drinking Water Supply is 1 µg/L.

$$WLA_{AQL} \quad C_e = ((6.82 + 16143)14 - (16143 * 0.0))/6.82$$

$$C_e = 33,152 \text{ µg/L}$$

$$WLA_{HHF} \quad C_e = ((6.82 + 16143)8 - (16143 * 0.0))/6.82$$

$$C_e = 18,944 \text{ µg/L}$$

$$WLA_{DWS} \quad C_e = ((6.82 + 16143)1.0 - (16143 * 0.0))/6.82$$

$$C_e = 2,368 \text{ µg/L}$$

The more protective WLA is utilized for limit determination. For this pollutant it is DWS.

$$AML = WLA_{(DWS)} \quad [TSD 5.4.4]$$

$$MDL = (AML)(\text{Multiplying Factor}) \quad [TSD 5.4.4, 99^{\text{th}} \text{ Percentile, } n=4]$$

$$AML = 2,368 \text{ µg/L} \quad [TSD 5.4.4]$$

$$MDL = 2,368 (2.01) = 4,760 \text{ µg/L} \quad [TSD 5.4.4, 99^{\text{th}} \text{ Percentile, } n=4]$$

- **2,4,5-Trichlorophenol.** The federal ELG list Trichlorophenol; therefore, either a TBEL or WQBEL is needed in this operating permit. Protection of Human Health-Fish Consumption is 9,800 µg/L and Protection of Drinking Water Supply is 2,600 µg/L.

$$WLA_{HHF} \quad C_e = ((6.82 + 16143)9,800 - (16143 * 0.0))/6.82$$

$$C_e = 2.3 \times 10^7 \text{ µg/L}$$

$$WLA_{DWS} \quad C_e = ((6.82 + 16143)2,600 - (16143 * 0.0))/6.82$$

$$C_e = 6.2 \times 10^6 \text{ µg/L}$$

The more protective of the criteria is used. For this pollutant it is DWS.

$$AML = WLA_{(DWS)} \quad [TSD 5.4.4]$$

$$MDL = (AML)(\text{Multiplying Factor}) \quad [TSD 5.4.4, 99^{\text{th}} \text{ Percentile, } n=4]$$

2,4,5-Trichlorophenol continued:

AML =  $6.2 \times 10^6 \mu\text{g/L}$

MDL =  $6.2 \times 10^6 (2.01) = 1.2 \times 10^7 \mu\text{g/L}$

[TSD 5.4.4]

[TSD 5.4.4, 99<sup>th</sup> Percentile, n=4]

- **WET Test.** WET Testing schedules and intervals are established in accordance with the department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Chronic

Acute

**No less than TWICE/YEAR:**

Facility is subject to production processes alterations throughout the year.

Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.

Facility has been granted seasonal relief of numeric limitations.

Acute AEC% =  $((\text{design flow}_{\text{cfs}} + \text{ZID}_{7\text{Q}10}) / \text{design flow}_{\text{cfs}})^{-1}] \times 100 = \#\#\%$

Acute AEC% =  $((6.82_{\text{cfs}} + 68.2_{7\text{Q}10}) / 6.82_{\text{cfs}})^{-1}] \times 100 = 9.1\%$

68.2cfs was used for the ZID 7Q10 due to the fact that the actual ZID 7Q10 is greater than 10 times the design flow.

**Protective Comparison between TBEL and WQBEL**

Pollutants of Concern for this comparison are BOD<sub>5</sub>, TSS, pH, Pentachlorophenol, and 2,4,5-Trichlorophenol. The more protective are in bold and will be established in the operating permit.

Pollutant Parameter	TBEL		WQBEL	
	Daily Max.	Monthly Avg.*	Daily Max.	Monthly Avg.*
BOD <sub>5</sub>	<b>11,340 lb/day</b>	<b>5,508 lb/day</b>	N/A	N/A
TSS	<b>9,720 lb/day</b>	<b>4,212 lb/day</b>	N/A	N/A
pH (pH Standard Units)	5.0 – 9.0	5.0 – 9.0	<b>6.5 – 9.0</b>	<b>6.5 – 9.0</b>
Pentachlorophenol	<b>4.5 lb/day</b>	N/A	176 lb/day**	88 lb/day**
	<b>0.24 mg/L</b>	N/A	4.8 mg/L	2.4 mg/L
2,4,5-Trichlorophenol	<b>1.6 lb/day</b>	N/A	440,352 lb/day**	227,515 lb/day**
	<b>0.08 mg/L</b>	N/A	12,000 mg/L	6,200 mg/L

\* - The monthly averages from the WQBEL are greater than the TBELs for Pentachlorophenol and Trichlorophenol; therefore, it is recommended that the Monthly Average be equal to the Daily Maximum.

\*\* - lb/day =  $(\text{Flow}_{\text{MGD}})(\text{Concentration}_{\text{mg/L}})(8.34_{\text{(lb/MG)(mg/L)}})$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit.

## **Part VI – Administrative Requirements**

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

### **PUBLIC NOTICE:**

The department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit is tentatively schedule to begin on December 10, 2010.

**DATE OF FACT SHEET:** DECEMBER 7, 2010

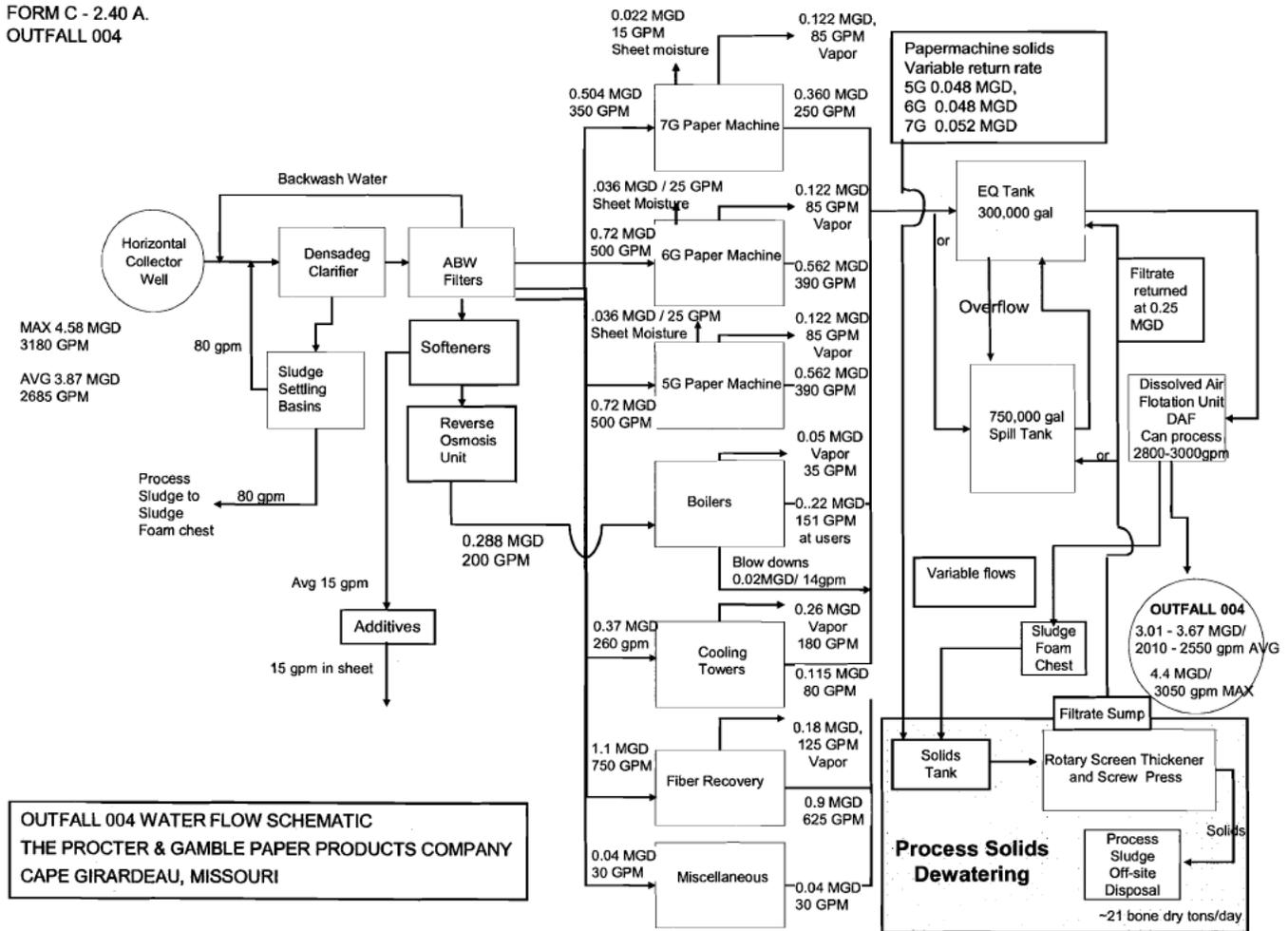
### **COMPLETED BY:**

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**Part VII – Appendices**

**APPENDIX A – PROCESS FLOW DIAGRAM FOR OUTFALL #004**

FORM C - 2.40 A.  
 OUTFALL 004



**APPENDIX B – RPA RESULTS:**

Parameter	HHF*	RWC*	DWS*	RWC*	Reasonable Potential	# of Samples**	CV***	Max/Multiplier
Chloroform	470	0.21	5.7	0.21	<b>NO</b>	54	0.485	328 / 1.526
Sulfate (SO <sub>4</sub> ) in mg/L	N/A	N/A	250	0.176	<b>NO</b>	54	0.369	300 / 1.390

N/A – Not Applicable

HHF – Protection of Human Health Fish Consumption.

DWS – Protection of Drinking Water Supply.

RWC – Receiving Water Concentration (RWC) is the concentration of a toxicant of the parameter toxicity in the receiving water after mixing. In Missouri, when Mixing Considerations are not allowed per applicable regulations, the RWC (acute or chronic) is the effluent from the facility.

\* - Units are (µg/L) unless otherwise noted.

\*\* - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

\*\*\* - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).

A more detailed version including calculations of this RPA is available upon request.