

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

_____)
)
In re: MILLIKEN COMPANY) NPDES Appeal No.
)
NPDES Permit No. SC 0000 353)
_____)

PETITION FOR REVIEW

INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), Milliken & Company ("Petitioner") petitions for review of the conditions of NPDES Permit No. SC 0000353 ("the Permit"), which was issued to Milliken & Company ("Permittee") on November 30, 2005, by the U.S. Environmental Protection Agency, Region 4. A copy of the Permit and Amendment to the Fact Sheet at Final Permit Issuance are attached as an Exhibit A. The permit at issue in this proceeding authorizes Petitioner to discharge process wastewater, utility water and stormwater from its Abbeville, South Carolina, facility into Blue Hill Creek. Petitioner contends that certain conditions are based on clearly erroneous findings of fact and conclusions of law. Specifically, Petitioner challenges the following permit conditions:

The inclusion of (1) Part I.A.1 Acute Whole Effluent Toxicity Effluent Limitation and (2) Part IV Acute Whole Effluent Toxicity Testing Program as applicable to discharges from Outfall 001.

FACTUAL STATUTORY BACKGROUND

Petitioner satisfies the threshold requirements for filing a petition for review under Part 124, to wit:

1. Petitioner has standing to petition for review of the Permit decision because it participated in the public comment period on the Permit. See 40 C.F.R. § 124.19(a). Petitioner commented in writing on the Draft Permit and copies of the comments are attached as Exhibits with this Petition. There was no public hearing held regarding the Permit.

2. The issues raised by Petitioner were raised during the public comment period and therefore were preserved for review. The issues were raised over the course of two comment letters. Petitioner's August 4, 2005 letter (Exhibit B) provided comments to EPA on a July 1, 2005 letter and draft Permit prior to the public notice. Petitioner's October 12, 2005 letter (Exhibit C) provided comments to EPA on the September 15, 2005 Public Notice of EPA's tentative decision on the Permit. Exhibits B and C include the respective draft permit documents that are the subject of the comment letters.

ARGUMENT

The inclusion of Part I.A.1 Acute Whole Effluent Toxicity Effluent Limitation and Part IV Acute Whole Effluent Toxicity Testing Program as applicable to discharges from Outfall 001 is not supported by facts or any legal authority.

I. EPA Did Not Lay a Supportable Foundation for the Permit. The facility that is now Milliken & Company's Abbeville Plant was first constructed in 1896. It was

purchased by Milliken in the 1950's. The plant's effluent instream waste concentration (IWC) ranges from 85.0% to 89.4% of the flow of Blue Hill Creek. See Exhibit C, Fact Sheet p. 21. Toxicity requirements were first included in the Abbeville plant's NPDES permit in the 1996 permit revision issued by South Carolina DHEC. Only chronic reproduction monitoring requirements were included in this revision, and a failed test triggered a requirement for TIE/TRE studies. In addition, if the facility successfully passed twelve consecutive monthly tests, a chronic reproduction toxicity limit would go into effect. There were no acute toxicity monitoring requirements or limitations in the 1996 revision. South Carolina's "South Carolina DHEC Toxic Control Strategy for Wastewater Discharges", Exhibit D, did not require acute toxicity testing for discharges with an IWC greater than 80%. Page 15 of Exhibit D, states that "As the IWC approaches 80%, there will be four times as much wastewater as stream flow and instantaneous mixing will be assumed. This condition will result in a requirement for chronic toxicity testing only." A modified permit issued in 1998 by SC DHEC included the same chronic toxicity requirements as the 1996 issuance with no acute monitoring requirements or limitations. This was the last permit issuance prior to the Permit issued by EPA.

The Permit contains a limitation on acute whole effluent toxicity based on percent mortality in 48-hours at 100% effluent. Since the Abbeville Plant has no history of acute monitoring requirements or limitations in its previous NPDES permit, compliance history is not clear, cause and effects are not known, and consequently, compliance alternatives have not been defined.

In comment #2 in Exhibit C, Petitioner against the above background asserted that since “no acute toxicity information exists” it is not known “whether the plant can meet the proposed acute WET limits.” EPA’s justification for the imposition of an Acute WET completely lacks any factual or legal foundation as seen by viewing selected portions of the Region’s rationale in the Fact Sheet in Exhibit C stated on pages 20-21. EPA stated without any support that the “Imposition of a chronic WET monthly average without a corresponding daily maximum limit to protect against acutely toxic effects **may** lead to an excursion of South Carolina’s narrative water quality criterion.” (Emphasis added.) At this point EPA does not know whether what might happen. EPA also stated that “Although no facility-specific acute WET data are available, EPA’s March 1991 ‘Technical Support Document for Water-Quality Based Toxics Control’ does provide guidance on assessing RP for the need for permit limits without effluent monitoring data for a given facility . . .” Still armed with no data the Fact Sheet then states that “it is the BPJ of the permit writer” that acute toxicity might occur.

The Region’s response to Petitioner’s comment #2 in Exhibit C found in the Amendment to the Fact Sheet, Exhibit A, after relying on the Fact Sheet, stated in part that the “appropriate acute WET limits were required based on: guidance in the March 1991 ‘Technical Support Document for Water-Quality Based Toxics Control’ (TSD).” EPA also stated that “Milliken’s comments do not refute the stated fact sheet bases for EPA’s determination that RP exists for acute WET.” As seen above in the initial Fact Sheet EPA has no data, relies on a 1991 guidance document and then suggests that Petitioner has no facts to refute EPA’s basis for its decision.

Reliance on the TSD is not a valid basis for a permit decision. In referring to the TSD in another case, the EAB in July 2004 has recently stated that it “has not had prior cause to address that guidance in depth.” Washington Aqueduct Water Supply System, 11 E.A.D. ____, NPDES 03-06, at 13. This case provides that opportunity. Moreover, the Region’s reliance on the TSD constitutes impermissible reliance on guidance as a basis for a permit obligation that has the “force of law” without notice and comment held by the D.C. Circuit in Appalachian Power v. EPA, 208 F.3d 1015 (D.C. Cir. 2000); General Electric Co. v. EPA, 290 F.3d 377 (D.C. Cir. 2002). Petitioner’s situation may also be analogized to CropLife Am. v. EPA, 329 F.3d 876, 881 (D.C. Cir. 2003). In CropLife, the court held that an EPA Directive published within a press release constituted a “firm rule with legal consequences that are binding on the petitioners and the agency.” 329 F.3d at 882. In CropLife, pesticide manufacturers and trade associations petitioned the court for review of an EPA Directive that suddenly changed positions on the use of third-party human studies in regulatory decision making under the Federal Insecticide Fungicide and Rodenticide Act (“FIFRA”). Id. at 880-881. Holding that the “clear and unequivocal language” of the directive “constitutes a binding regulation that is directly aimed at and enforceable against petitioners,” the court vacated the directive based on EPA’s failure to follow notice and comment procedures. Id. at 881, 884.

II. EPA’s Permit Contains Impermissible Enforcement Obligations Under the WET Rule.

This appeal appears to be the first NPDES challenge since the WET test method was upheld by the D.C. Circuit in Edison Electric Institute v. EPA, 391 F. 3d 1267 (D.C.

Cir. 2004). Region 4 throughout the Response to Comments in the Amendment to the Fact Sheet (Exhibit A) relies on this opinion as a generic affirmation of the WET test. On page 4 of the Amendment to the Fact Sheet EPA states in referring to the Edison Electric case that the promulgation of the WET test methods for NPDES “were upheld . . . in a December 10, 2004 decision. But that is not what the Court decided.

As the Court stated that “EPA warned against using a single test result to institute an action for a civil penalty.” *Id.* at 1272. The Court reasoned that it was looking at the validity of the WET test, not its use in subsequent enforcement of permits:

“Nothing we have written thus far, and nothing we write in the balance of this opinion forecloses consideration of the validity of a particular test result in an enforcement action. *See* 33 U.S.C. § 1369(b)(2). That issue is not before us. The case involves only the validity of the WET test methods.” 391 F.3d at 1272

EPA’s attempts in this Permit to rest on a court decision about the validity of test method should not be interpreted as support for making a single permit excursion an enforceable event.

* * *

CONCLUSION

Petitioner requests that the WET requirements in the Permit related to acute toxicity be removed as they are not supported by facts or any legal authority. Alternatively, Petitioner requests that EPA include an appropriate period (at least one year) of monitoring and reporting in the permit to allow EPA and Petitioner to determine if the effluent has reasonable potential for exceedance of an acute toxicity water quality criterion. Subsequently, we request that the permit include a schedule of compliance, beginning after the monitoring and reporting period, which will allow Petitioner to take

the appropriate actions, if necessary, to comply with any proposed limitations before they go into effect.

ALSTON & BIRD, LLP

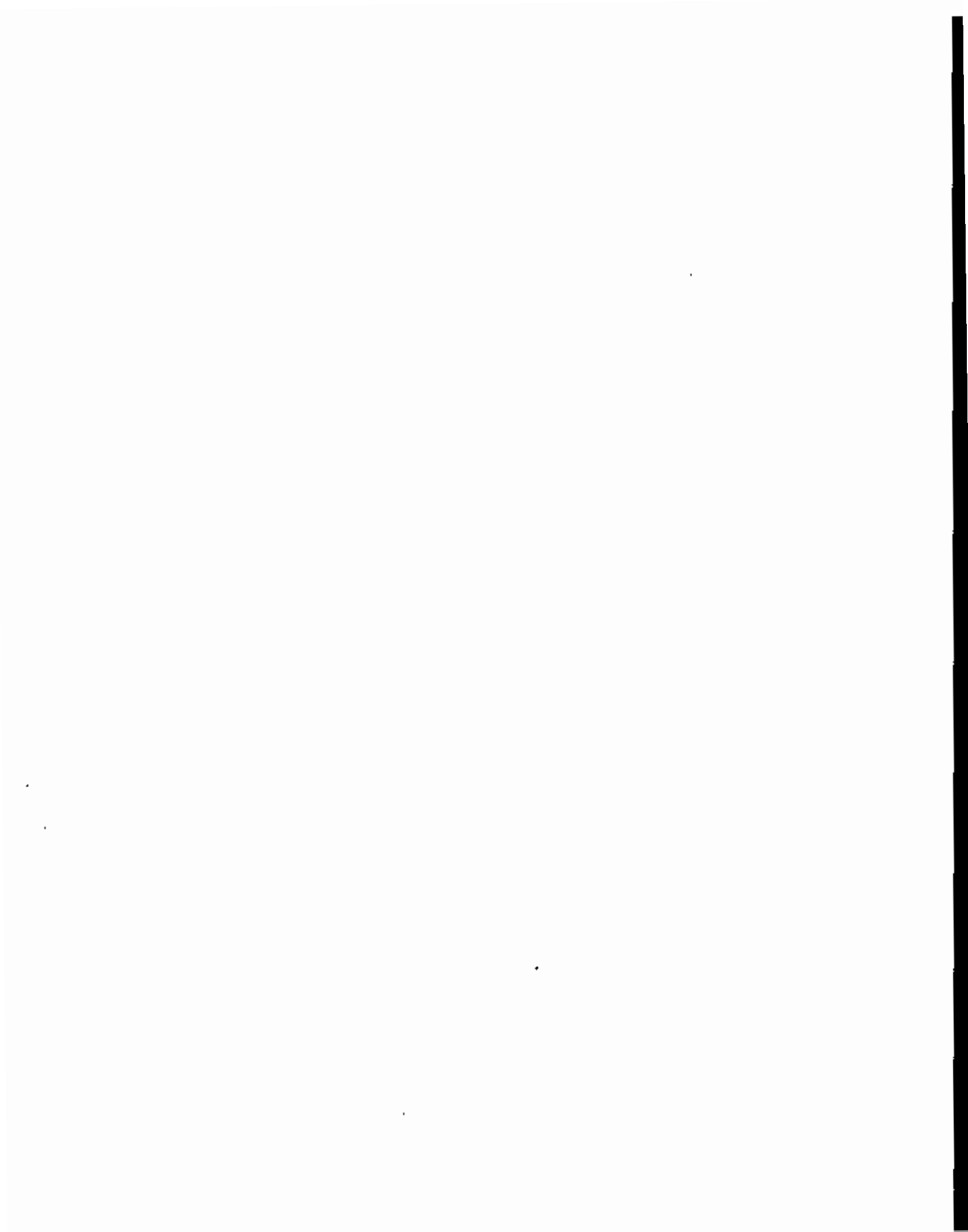


Lee A. DeHihns, III
Georgia Bar No. 216259

ATTORNEYS FOR PETITIONER

One Atlantic Center
1201 West Peachtree Street
Atlanta, Georgia 30309-3424
(404) 881-7151

Date: January 5, 2006





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 4
 ATLANTA FEDERAL CENTER
 61 FORSYTH STREET
 ATLANTA, GEORGIA 30303-8960

Approved State Jan 5.

NOV 30 2005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dr. Jeffrey E. Silliman, Corporate Environmental Manager
 Milliken and Company
 P.O. Box 1926, M-482
 Spartanburg, SC 29304

RE: Final Issuance of NPDES Permit No. SC0000353
 Milliken Abbeville Facility

Dear Dr. Silliman:

Enclosed is the National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. The permit shall become effective as indicated on the cover page, unless, within thirty (30) days following the date you receive the permit, you petition the Environmental Appeals Board (EAB) to review any conditions of the permit in accordance with the provisions of 40 Code of Federal Regulations (C.F.R.) Section 124.19.

The Environmental Protection Agency (EPA) published a final rule which revises certain regulations pertaining to the NPDES program, including the procedures for appealing the EPA determinations on NPDES permits. See Amendments to Streamline the National Pollutant Discharge Elimination System Program Regulations; Round II, 65 Federal Register (FR) 30886 (May 15, 2000). Included in the rule are revisions to the permit appeals process that replace evidentiary hearing procedures with direct appeal to the EAB. The rule eliminates the evidentiary hearing process described at 40 C.F.R. Section 124 Subpart E (Evidentiary Hearings for EPA-Issued NPDES Permits and EPA-Terminated RCRA Permits), as part of its appeals process for NPDES permits. See 40 C.F.R. Section 124.19 of the revised regulations, 65 FR 30911 (May 15, 2000).

All pleadings filed by mail must be addressed to the Environmental Appeals Board, MC 1103B, U.S. EPA, Ariel Rios Building, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460. Documents that are hand-carried must be delivered to the Board at its offices at 607 14th Street, N.W., Suite 500, Washington, DC, 20005. Documents may be filed with the Clerk of the Environmental Appeals Board only between the hours of 8:30 a.m. and 4:30 p.m. Eastern Time Monday through Friday (excluding Federal holidays). The website for the EAB is "<http://www.epa.gov/eab/>". On the webpage's "frequently asked questions" (FAQ) section, questions 1 thru 9 deal with filing issues, which you may want to refer to if you have any questions regarding how to file a permit appeal.

The preprinted Discharge Monitoring Report (DMR) Forms for the enclosed permit are being processed and will be mailed to you before the due date of the first DMR. Your facility should use these forms to report all discharge data at the frequency required in your permit. If you have not received your DMR prior to the end of the first monitoring period, please contact Mr. Mike Donehoo at (404) 562-9745.

If you have any questions regarding the monitoring requirements, schedules, or permit limitations, please direct them to Mr. Marshall Hyatt, Permit Writer, at (404) 562-9304, or for any information on procedures pertaining to legal matters relative to this permit issuance, contact Mr. Philip Mancusi-Ungaro, Assistant Regional Counsel, at (404) 562-9519.

Sincerely,


James D. Giattina, Director
Water Management Division

Enclosures (3)

1. Evidentiary Hearing Procedures
2. Final NPDES Permit
3. Amendment to Fact Sheet

cc: SCDHEC (with all enclosures, except Evid. Hearing Procedures)

U.S. Fish & Wildlife Service, Charleston Field Office
(with all enclosures, except Evid. Hearing Procedures)

**ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

**PERMITS, GRANTS, AND TECHNICAL ASSISTANCE BRANCH
WATER MANAGEMENT DIVISION**

APPEAL OF NPDES PERMITS

FROM

**TITLE 40, CODE OF FEDERAL REGULATIONS (40 CFR)
PART 124--PROCEDURES FOR DECISIONMAKING**

**Subpart A-General Program Requirements
Volume 20, Revised as of July 1, 2004
Pages 283-284**

Sec. 124.19 Appeal of RCRA, UIC, NPDES, and PSD Permits.

(a) Within 30 days after a RCRA, UIC, NPDES, or PSD final permit decision (or a decision under 270.29 of this chapter to deny a permit for the active life of a RCRA hazardous waste management facility or unit) has been issued under Sec. 124.15 of this part, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board to review any condition of the permit decision. Persons affected by an NPDES general permit may not file a petition under this section or otherwise challenge the conditions of the general permit in further Agency proceedings. They may, instead, either challenge the general permit in court, or apply for an individual NPDES permit under Sec. 122.21 as authorized in Sec. 122.28 and then petition the Board for review as provided by this section. As provided in Sec. 122.28(b)(3), any interested person may also petition the Director to require an individual NPDES permit for any discharger eligible for authorization to discharge under an NPDES general permit. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by these regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

(b) The Environmental Appeals Board may also decide on its own initiative to review any condition of any RCRA, UIC, NPDES, or PSD permit decision issued under this part for which review is available under paragraph (a) of this section. The Environmental Appeals Board must act under this paragraph ~~within 30 days of the service date of notice of the Regional Administrator's action.~~

(c) Within a reasonable time following the filing of the petition for review, the Environmental Appeals Board shall issue an order granting or denying the petition for review. To the extent review is denied, the conditions of the final permit decision become final agency action. Public notice of any grant of review by the Environmental Appeals Board under paragraph (a) or (b) of this section shall be given as provided in Sec. 124.10. Public notice shall set forth a briefing schedule for the appeal and shall state that any interested person may file an amicus brief. Notice of denial of review shall be sent only to the person(s) requesting review.

(d) The Regional Administrator, at any time prior to the rendering of a decision under paragraph (c) of this section to grant or deny review of a permit decision, may, upon notification to the Board and any interested parties, withdraw the permit and prepare a new draft permit under Sec. 124.6 addressing the portions so withdrawn. The new draft permit shall proceed through the same process of public comment and opportunity for a public hearing as would apply to any other draft permit subject to this part. Any portions of the permit which are not withdrawn and which are not stayed under Sec. 124.16(a) continue to apply.

(e) A petition to the Environmental Appeals Board under paragraph (a) of this section is, under 5 U.S.C. 704, a prerequisite to the seeking of judicial review of the final agency action.

(f) (1) For purposes of judicial review under the appropriate Act, final agency action occurs when a final RCRA, UIC, NPDES, or PSD permit decision is issued by EPA and agency review procedures under this section are exhausted. A final permit decision shall be issued by the Regional Administrator:

(i) When the Environmental Appeals Board issues notice to the parties that review has been denied;

(ii) When the Environmental Appeals Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or

(iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Environmental Appeals Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

(2) Notice of any final agency action regarding a PSD permit shall promptly be published in the Federal Register.

(g) Motions to reconsider a final order shall be filed within ten (10) days after service of the final order. Every such motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Motions for reconsideration under this provision shall be directed to, and decided by, the Environmental Appeals Board. Motions for reconsideration directed to the administrator, rather than to the Environmental Appeals Board, will not be considered, except in cases that the Environmental Appeals Board has referred to the Administrator pursuant to Sec. 124.2 and in which the Administrator has issued the final order. A motion for reconsideration shall not stay the effective date of the final order unless specifically so ordered by the Environmental Appeals Board.

[48 FR 14264, Apr. 1, 1983, as amended at 54 FR 9607, Mar. 7, 1989; 57 FR 5335, Feb. 13, 1992; 65 FR 30911, May 15, 2000]

Permit No. SC0000353
Major Industrial

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), the

Milliken and Company
Post Office Box 1926, M482
Spartanburg, South Carolina 29304

is authorized to discharge from a facility located at

Abbeville Facility
601 Brooks Street
Abbeville, Abbeville County, SC 29620

to receiving waters named

Outfall 001: Blue Hill Creek

In accordance with effluent limitations, monitoring requirements and other conditions set forth herein. The permit consists of this cover sheet, Part I 13 pages, Part II 17 pages, Part III 7 pages, Part IV 3 pages, and an attachment for Certification requirements 2 pages.

This permit shall become effective on January 1, 2006.

This permit and the authorization to discharge shall expire at midnight, July 31, 2008.

NOV 30 2005

Date Issued


James D. Giattina, Director
Water Management Division

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM LIMITS - TIER I PRODUCTION

1. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page 1-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (64)	Report (128)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (130)	Report (260)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	478.4	956.9	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	2533	5067	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	5.2	10.3	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	2.6	5.2	Effluent	1/week	Grab
Total Chromium, lbs/day	2.6	5.2	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	---	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM LIMITS - TIER I PRODUCTION - CONTINUED

1. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	---	See Item I.A.13	---	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	See Item I.A.13	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	2 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	See Item I.A.15	See Item I.A.15	Effluent	See Item I.A.15	Grab
Nomionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	See Item I.A.16	See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Upstream of Discharge	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	196	392	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	397	794	Effluent	1/week	Calculated

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 1 PRODUCTION

2. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(S)	MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM		MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (64)	Report (128)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (130)	Report (260)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	478.4	956.9	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	2533	5067	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	5.2	10.3	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	2.6	5.2	Effluent	1/week	Grab
Total Chromium, lbs/day	2.6	5.2	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	—	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 1 PRODUCTION - CONTINUED

2. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. (See Part I.A.10, page I-10)

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13
Temperature, °C. (Downstream - Upstream)	---	See Item I.A.13	---	See Item I.A.13
Temperature, °C.	See Item I.A.13	See Item I.A.13	Effluent	1/week
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	2 days/week
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.15	Report See Item I.A.15	Effluent	See Item I.A.15
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.16	Report See Item I.A.16	Effluent	See Item I.A.16
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Upstream of Discharge	See Item I.A.17
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Effluent	1/week
Ultimate Oxygen Demand, lbs/day (March-October)	196	392	Effluent	1/week
Ultimate Oxygen Demand, lbs/day (November-February)	397	794	Effluent	1/week

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 2 PRODUCTION

3. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part LA.10, page 1-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(s)	MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM		MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (83)	Report (166)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (164)	Report (328)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	570.1	1140.3	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	3038	6076	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	6.2	12.4	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	3.1	6.2	Effluent	1/week	Grab
Total Chromium, lbs/day	3.1	6.2	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	---	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 2 PRODUCTION - CONTINUED

3. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(S)	MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM		MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	--	See Item I.A.13	--	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	See Item I.A.13	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	--	See Item I.A.14	--	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	2 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.15	Report See Item I.A.15	Effluent	See Item I.A.15	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.16	Report See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Upstream of Discharge	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	255	510	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	504	1008	Effluent	1/week	Calculated

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 3 PRODUCTION

4. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
	MONTHLY AVERAGE	DAILY MAXIMUM			
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (90)	Report (1.80)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (178)	Report (356)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	650.2	1300.5	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	3479	6958	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	7.1	14.2	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	3.5	7.1	Effluent	1/week	Grab
Total Chromium, lbs/day	3.5	7.1	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	---	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 3 PRODUCTION - CONTINUED

4. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	---	See Item I.A.13	---	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	See Item I.A.13	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	2 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.15	Report See Item I.A.15	Effluent	See Item I.A.15	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.16	Report See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Upstream of Discharge	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.17	See Item I.A.17	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	276	552	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	548	1096	Effluent	1/week	Calculated

PART I

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM LIMITS

During the period beginning on the permit effective date and lasting until twenty-one months from the permit effective date, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater.

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY
Chronic Whole Effluent Toxicity, IC ₅₀	Report	---	Effluent	See Part IV
Total Recoverable Copper, mg/l	Report	---	Effluent	24 hour composite

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS

During the period beginning twenty-one months from the permit effective date and lasting until permit expiration, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Chronic Whole Effluent Toxicity, IC ₅₀ - Tier 1	> 85%	---	Effluent	See Part IV	See Part IV
Chronic Whole Effluent Toxicity, IC ₅₀ - Tier 2	> 88%	---	Effluent	See Part IV	See Part IV
Chronic Whole Effluent Toxicity, IC ₅₀ - Tier 3	> 89%	---	Effluent	See Part IV	See Part IV
Total Recoverable Copper, mg/l - Tier 1	0.010	0.012	Effluent	1/week	24 hour composite
Total Recoverable Copper, mg/l - Tier 2	0.010	0.012	Effluent	1/week	24 hour composite
Total Recoverable Copper, mg/l - Tier 3	0.010	0.012	Effluent	1/week	24 hour composite

7. All correspondence (including any report, notice, request for determination, etc.) that is required to be submitted to the Environmental Protection Agency (EPA) shall also be submitted to the South Carolina Department of Health and Environmental Control (DHEC) at the address specified in Part III, Section A. of this permit.
8. Samples taken in compliance with the monitoring requirements specified in this permit shall be taken at the nearest accessible point after final treatment but prior to the actual discharge or mixing with the receiving waters (unless otherwise specified).
9. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving water.
10. Tier 1 is represented by a production level of 51,700 lbs/day; Tier 2 is represented by a production level of 62,000 lbs/day, and Tier 3 is represented by a production level of 71,000 lbs/day. Tier 1 production-based limits shall apply upon the effective date of this permit. Based on 40 Code of Federal Regulations (C.F.R.) Section 122.45(b)(2)(ii)(B), if the permittee wishes for Tier 2 or Tier 3 production-based limits to subsequently apply after November 30, 2006, the permitting authority shall be notified in writing a minimum of seven business days prior to a month in which the permittee expects to operate at that Tier. If any notification of increased production covers a period of more than one month, it shall specify the reasons for the anticipated production level increase. New notification of discharge at any subsequent Tier is required to cover a period of production not covered by prior notice or, if during two consecutive months otherwise covered by a notice, the production level at the facility does not in fact meet the higher level designated in the notice. Any notification shall include: a) the anticipated Tier to be applicable, and b) the period during which the permittee expects to operate at the anticipated Tier. For any notification, the permittee shall comply with the lower of the Tier corresponding to actual production during each month or the Tier specified in the notification. The permittee shall submit the level of production that actually occurred during each month and the corresponding Tier and the limitations applicable to that Tier as an attachment to each Discharge Monitoring Report (DMR) (EPA Form No. 3320-1). The level of production reported on the attachment may be claimed as Confidential Business Information.
11. Where a permittee continuously measures the pH of wastewater pursuant to a requirement or option in a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402(o) of the Clean Water Act (CWA or the Act), the permittee shall maintain the pH of such wastewater within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:
 - a. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
 - b. No individual excursion from the range of pH values shall exceed 60 minutes.

For purposes of this section, an excursion is an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in the applicable effluent limitations guidelines. (Secs. 301, 304, 306, and 501 of the Act (the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et. seq., as amended by the CWA of 1977, Pub. L. 95-217)) The permittee shall report the date, time, and length (minutes) of any excursion as an attachment to the DMR Form.

12. Discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to any waste stream which may ultimately be released to lakes, rivers, streams, or other waters of the United States is prohibited unless specifically authorized elsewhere in this permit. The permittee shall notify the Director in writing at least 30 days prior to planned use and discharge of any chemical not previously reported to the Director, other than chlorine or other products previously evaluated by EPA-Headquarters Office of Science and Technology, Engineering and Analysis Branch, that is to be used and that may be toxic to aquatic life.

Such notification shall include:

- a. Name and general composition of the chemical;
- b. Frequencies of use;
- c. Quantities to be used;
- d. Proposed discharge concentrations;
- e. Any acute and chronic toxicity data for any available aquatic species (Laboratory reports shall be prepared according to Section 12 of EPA document no. EPA/821-R-02-012 entitled, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms* (2002), or the most current edition.);
- f. Product data sheet; and
- g. Product label.

Discharge of materials subject to this part is prohibited prior to approval by EPA.

13. Effluent, upstream, and downstream temperatures shall be sampled as close together in time as possible. The upstream sample point shall be the closest point upstream of the discharge that is not influenced or affected by the discharge. The downstream sample point shall be the closest point downstream of the discharge after complete mixing with the receiving stream. A description of the upstream and downstream sampling location shall be provided to the permitting authority for review within thirty days of permit issuance. All individual temperature values shall be reported as an attachment to the DMR Form. For each sampling, the upstream value shall be subtracted from the downstream value and each difference shall also be reported as an attachment to the DMR Form. Upstream and downstream temperature monitoring shall be conducted once/week for one year after the permit effective date.

14. Effluent, upstream, and downstream color shall be sampled as close together in time as possible at the same sampling locations used in Item I.A.13 above. Monthly average and daily maximum results shall be reported as both apparent and true color on the DMR Form. All individual apparent and true color values shall also be reported as an attachment to the DMR Form. For each sampling, the upstream apparent and true color values shall be subtracted from the corresponding downstream values and the difference for each shall also be reported as an attachment to the DMR Form. Upstream and downstream color sampling shall only be conducted once/week during the first full April-October period that occurs after the permit effective date.

15. Anionic Surfactants as MBAS shall be calculated as:

$$\text{mg MBAS/L} = \frac{\text{ug apparent LAS}}{\text{ml of original sample}}, \text{ where LAS} = \text{Linear alkylbenzene sulfonate}$$

Report on the DMR Form as "MBAS, calculated as LAS, molecular wt. _____. Monitoring shall be conducted by Method 5540 C, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. For the first six months after the permit effective date, monitoring shall be conducted once/week. Thereafter, monitoring shall be conducted once/month.

16. Nonionic Surfactants as CTAS shall be calculated as:

$$\text{mg CTAS/l} = \text{mg apparent nonionic/L sample}$$

Report on the DMR Form as "CTAS, calculated as nonionic surfactant C₁₂₋₁₈E₁₁. Monitoring shall be conducted by Method 5540 D, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. For the first six months after the permit effective date, monitoring shall be conducted once/week. Thereafter, monitoring shall be conducted once/month.

17. Effluent and upstream total hardness shall be sampled as close together in time as possible at the same sampling locations used in Item I.A.13 above. Effluent sampling shall also occur as close together in time as possible with effluent total recoverable copper sampling. Monthly average and daily maximum results for effluent and upstream hardness shall be reported. All individual values shall also be reported as an attachment to the DMR Form. Upstream and downstream total hardness sampling shall be conducted once/week for one year after the permit effective date.

18. For Ultimate Oxygen Demand (UOD), monthly average values (lbs/day) shall be calculated and reported on the DMR Form using the following formula, where BOD₅ and Total Ammonia are expressed as lbs/day:

$$\text{UOD} = [3.0 \times \text{BOD}_5 \text{ monthly average}] + [4.57 \times \text{Total Ammonia monthly average}]$$

19. Any bypass of the treatment facility, which is not included in the effluent monitored above, is to be monitored for flow and all other parameters, except chronic whole effluent toxicity. For parameters other than flow, at least one grab sample per day shall be monitored. Daily flow shall be monitored or estimated, as appropriate, to obtain reportable data. All monitoring results shall be reported on a DMR Form.
20. Parameters shall be monitored using sufficiently sensitive Part 136 analytical methods. If the results for a given sample analysis are such that any parameter (other than fecal coliform) is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the DMR Form. For fecal coliform, a value of 1.0 shall be used in calculating the geometric mean. If the resulting fecal coliform mean value is 1.0, the permittee shall report "NODI=B" on the DMR Form. For each quantitative sample value that is not detectable, the test method used and the minimum level for that method for that parameter shall be attached to and submitted with the DMR Form. The permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Operational Level Attained.....Effective Date of Permit
(For all parameters except those specified below)

Chronic Whole Effluent Toxicity and Total Recoverable Copper:

First Report of Progress.....July 1, 2006
Second Report of Progress.....January 2, 2007
Third Report of Progress.....July 1, 2007
Operational Level Attained.....October 1, 2007

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

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 Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

[40 CFR §§ 122.41(a) and 122.41(a)(1)]

2. Penalties for Violations of Permit Conditions

The Clean Water Act provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$32,500 per day for each violation. The Clean Water Act provides that any person who negligently violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

[40 CFR § 122.41(a)(2) and 69 FR 7121]

Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$32,500. Penalties for Class II violations are not to exceed \$11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$157,500.
[40 CFR § 122.41(a)(3) and 69 FR 7121]

The specific amounts for violations reflect those in effect at the time of permit issuance and are subject to change.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" Section B, Paragraph 3, and "Upset" Section B, Paragraph 4, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

[40 CFR § 122.41(m) and (n)]

4. Duty to Mitigate

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

[40 CFR § 122.41(d)]

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

[40 CFR § 122.41(f)]

6. Toxic Pollutants

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

[40 CFR § 122.44(b)(1)]

7. 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 under Section 311 of the Act.

8. 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 Act.

9. Effect of a Permit

Except for any toxic effluent standards and prohibitions imposed under Section 307 of the CWA and "standards for sewage sludge use or disposal" under Section 405(d) of the CWA, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 307, 318, 403, and 405 (a)-(b) of CWA. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in 40 CFR §§ 122.62 and 122.64.

Compliance with a permit condition which implements a particular "standard for sewage sludge use or disposal" shall be an affirmative defense in any enforcement action brought for a violation of that "standard for sewage sludge use or disposal" pursuant to Sections 405(e) and 309 of the CWA.

[40 CFR § 122.5(a)]

10. Property Rights

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

[40 CFR § 122.5(b) & 40 CFR § 122.41(g)]

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

[40 CFR § 122.5(c)]

11. Onshore or Offshore Construction

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any waters of the United States.

12. Severability

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

13. 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.

[40 CFR § 122.41(b)]

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

[40 CFR § 122.41(e)]

2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

[40 CFR § 122.41(c)]

3. Bypass of Treatment Facilities

a. Definitions

- (1) **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations.

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs c. and d. of this subsection.

c. 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 Section D, Subsection 8 (24-hour notice).

d. Prohibition of bypass

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

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) The permittee submitted notices as required under Paragraph c. of this subsection.

(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 Paragraph d.(1) of this subsection.

[40 CFR § 122.41(m)(1)-(4)]

4. Upsets

a. Definition

“Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. 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 Paragraph c. of this subsection 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.

c. Conditions necessary for a demonstration of upset

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

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

- (2) The permitted facility was at the time being properly operated; and
- (3) The permittee submitted notice of the upset as required in Section D, Subsection 8 (24 hour notice);
- (4) The permittee complied with any remedial measures required under Section A., Subsection 4.

d. **Burden of proof**

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

[40 CFR § 122.41(n)(1)-(4)]

5. **Removed Substances**

This permit does not authorize discharge of solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters of the United States unless specifically limited in Part I.

SECTION C. MONITORING AND RECORDS

1. **Representative Sampling**

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

[40 CFR § 122.41(j)(1)]

All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director.

2. **Flow Measurements**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that 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 $\pm 10\%$ from the true discharge rates throughout the range of expected discharge volumes. Once-through condenser cooling water flow which is monitored by pump logs, or pump hour meters as specified in Part I of this permit and based on the manufacturer's pump curves shall not be subject to this requirement. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references. These references are available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. (800) 553-6847 or (703) 487-4650.

"A Guide to Methods and Standards for the Measurement of Water Flow", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 100 pp. (Order by NTIS No. COM-7510683.)

"Water Measurement Manual", U.S. Department of Interior, Bureau of Reclamation, Revised Edition, 1984, 343 pp. (Order by NTIS No. PB-85221109.)

"Flow Measurement in Open Channels and Closed Conduits", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Order by NTIS No. PB-273535.)

"NPDES Compliance Flow Measurement Manual", U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-77, September 1981, 149 pp. (Order by NTIS No. PB-82131178.)

3. Monitoring Procedures

Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

[40 CFR § 122.41(j)(4)]

4. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

[40 CFR § 122.41(j)(5)]

5. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 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.

[40 CFR § 122.41(j)(2)]

6. Record Contents

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

(40 CFR § 122.41(j)(3)(i)-(vi))

7. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- 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; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

[40 CFR § 122.41(i)(1)-(4)]

SECTION D. REPORTING REQUIREMENTS

1. Change in Discharge

Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR § 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D, Subsection 11.

- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

[40 CFR § 122.41(i)(1)(i)-(iii)]

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.

[40 CFR § 122.41(j)(2)]

Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Director.

3. Transfer of Ownership of Control

- a. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

[40 CFR § 122.41(i)(3)]

- b. In some cases modification or revocation and reissuance is mandatory.

[40 CFR § 122.61]

- c. Automatic transfers. As an alternative to transfers of permits by modification, any NPDES permit may be automatically transferred to a new permittee if:

- (1) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in Subparagraph b.(2) of this subsection;
- (2) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
- (3) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under 40 CFR § 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Subparagraph b.(2) of this subsection.

[40 CFR § 122.61(b)]

4. Monitoring Reports

Monitoring results shall be reported at the intervals specified in Part III of the permit.

[40 CFR § 122.41(l)(4)]

Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

[40 CFR § 122.41(l)(4)(i)]

5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

[40 CFR § 122.41(l)(4)(ii)]

6. Averaging of Measurements

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

[40 CFR § 122.41(l)(4)(iii)]

7. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

[40 CFR § 122.41(l)(5)]

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

8. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be included as information which must be reported within 24 hours under this paragraph.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit. [See 40 CFR § 122.44(g).]
- b. Any upset which exceeds any effluent limitation in the permit.
- c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. [See 40 CFR § 122.44(g)]

The Director may waive the written report on a case-by-case basis for reports under this subsection if the oral report has been received within 24 hours.

[40 CFR § 122.41(I)(6)]

9. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Section D at the time monitoring reports are submitted. The reports shall contain the information listed in Section D, Subsection 8.

[40 CFR § 122.41(I)(7)]

10. 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 to the Director.

[40 CFR § 122.41(I)(8)]

11. Changes in Discharge of Toxic Substances

The following conditions apply to all NPDES permits within the categories specified below:

- a. *Existing manufacturing, commercial, mining, and silvicultural dischargers.* All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - (1) 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 following "notification levels":
 - (a) One hundred micrograms per liter (100 µg/l);

(b) Two hundred micrograms per liter (200 $\mu\text{g/l}$) for acrolein and acrylonitrile; five hundred micrograms per liter (500 $\mu\text{g/l}$) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony; or

(c) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7).

[40 CFR § 122.42(a)(1)(i-iii)]

(2) 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 following "notification levels":

(a) Five hundred micrograms per liter (500 $\mu\text{g/l}$);

(b) One milligram per liter (1 mg/l) for antimony; or

(c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7).

[40 CFR § 122.42(a)(2)(i-iii)]

b. *Publicly owned treatment works.* All POTWs must provide adequate notice to the Director of the following:

(1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Section 301 or 306 of CWA if it were directly discharging those pollutants; and

(2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(3) For purposes of this paragraph, adequate notice shall include information on

(a) the quality and quantity of effluent introduced into the POTW, and

(b) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

[40 CFR § 122.42(b)]

12. 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.

[40 CFR § 122.41(b)]

The application should be submitted at least 180 days before the expiration date of this permit. The Regional Administrator may grant permission to submit an application later than the 180 days in advance, but no later than the permit expiration date.

[40 CFR § 122.21(d)]

When EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit if the permittee has submitted a timely application under this subsection which is a complete application for a new permit; and the Regional Administrator, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit.

[40 CFR § 122.6(a)]

Permits continued under this section remain fully effective and enforceable.

[40 CFR § 122.6(b)]

13. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified.

[40 CFR § 122.41(k)(1)]

a. *Applications.* 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, or
- (b) the manager of one or more manufacturing, production, or operating 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 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.

NOTE: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in this subparagraph. The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under this subparagraph rather than to specific individuals.

- (2) *For a partnership or sole proprietorship.* By a general partner or the proprietor, respectively;
or
- (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, or
 - (b) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
- b. All reports required by permits, and other information requested by the Director shall be signed by a person described in Paragraph a. of this section, 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 in Paragraph a. of this section;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,
 - (3) The written authorization is submitted to the Director.
- c. *Changes to authorization.* If an authorization under Paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Paragraph b. of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
- d. *Certification.* Any person signing a document under Paragraph a. or b. of 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."*

[40 CFR § 122.22]

14. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Permit Issuing Authority. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

[40 CFR §§ 124.18 & 122]

15. Penalties for Falsification of Reports

The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

[40 CFR § 122.41(k)(2)]

SECTION E. DEFINITIONS

1. Permit Issuing Authority

The Regional Administrator of EPA Region 4 or his/her designee is the "Permit Issuing Authority," unless at some time in the future the State or Indian Tribe receives authority to administer the NPDES program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving the authorization becomes the issuing authority.

The use of the term "Director" in this permit shall apply to the Regional Administrator of EPA, Region 4.
[40 CFR § 122.2]

2. Act

"Act" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, 33 U.S.C. 1251 et seq.
[40 CFR § 124.2]

3. Discharge Monitoring Report (DMR)

"Discharge Monitoring Report" means the EPA national form (Form 3320-1) including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. EPA will prepare and mail "pre-printed" DMR forms to permittees for completion. These "pre-printed" DMR forms will indicate the appropriate reporting requirements and limitations as found in Part I of the permit.
[40 CFR § 122.2]

4. Measurements

- a. **"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.

For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day.

For pollutants with limitations expressed in other units of measurement (i.e., concentration), the "daily discharge" is calculated as the average measurement of the pollutant over the day.

- b. The **"average annual discharge limitation"** means the highest allowable average of "daily discharges" over a period of twelve consecutive calendar months, calculated as the "arithmetic mean" of the monthly averages for the current calendar month and the eleven prior calendar months. The annual average is calculated each month.

This limitation is identified as "Annual Average" in Part I of the permit.

- c. The **"average monthly discharge limitation"** other than for bacterial indicators, 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 bacterial indicators, the "average monthly discharge limitation" is calculated using a "geometric mean."

This limitation is identified as "Monthly Average" or "Daily Average" in Part I of the permit.

- d. The **"average weekly discharge limitation"** 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.

This limitation is identified as "Weekly Average" in Part I of the permit.

- e. The **"maximum daily discharge limitation"** means the highest allowable "daily discharge."

This limitation is identified as "Daily Maximum" in Part I of the permit.

[40 CFR § 122.2]

5. Types of Samples

- a. Composite Sample: A "**composite sample**" is a combination of not less than eight influent or effluent portions (aliquots), of at least 100 ml, collected over the full time period specified in Part I of the permit. The composite sample must be flow proportioned by either a time interval between each aliquot, or by volume as it relates to effluent flow at the time of sampling, or by total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.
- b. Grab Sample: A "**grab sample**" is a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.

6. Calculation of Means

- a. Arithmetic Mean: The "**arithmetic mean**" of any set of values is the sum of the individual values divided by the number of individual values.
- b. Geometric Mean: The "**geometric mean**" of any set of values is the N^{th} root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

7. Hazardous Substance

A "**hazardous substance**" means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.

[40 CFR § 122.2]

8. Toxic Pollutants

A "**toxic pollutant**" is any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the Clean Water Act.

[40 CFR § 122.2]

PART III

Other Requirements

A. Reporting of Monitoring Results

Monitoring results obtained for each month shall be summarized for that month and reported on a DMR Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed month for submittal to EPA. (For example, data for January shall be submitted by February 28.) Signed copies of the DMRs and all other reports, including those required by Section D of Part II, Reporting Requirements, shall be submitted to the Permit Issuing Authority and DHEC at the following addresses:

Environmental Protection Agency
Region 4
Eastern Enforcement Section
Water Programs Enforcement Branch
Water Management Division
Atlanta Federal Center
61 Forsyth St., SW
Atlanta, GA 30303-8960

South Carolina Department of Health &
Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201

If no discharge occurs during the reporting period, sampling requirements of this permit do not apply. The statement "No Discharge" shall be written on the DMR Form. If, during the term of this permit, the facility ceases discharge to surface waters, the Permit Issuing Authority shall be notified immediately upon cessation of discharge. This notification shall be in writing.

B. Reopener Clause

This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation, or sludge disposal requirement issued or approved under Sections 301(b)(2)(C) & (D), 307(a)(2), and 405(d)(2)(D) of the CWA, as amended, if the effluent standard, limitation, or sludge disposal requirement so issued or approved:

- a. Contains different conditions or is otherwise more stringent than any condition in the permit; or
- b. Controls any pollutant or disposal method not addressed in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable. The permit may also be reopened to include appropriate limits or modify any provision if monitoring data indicate the need for such or the reasonable potential to cause, or contribute to, exceedances of any applicable South Carolina water quality criterion. The permit may also be reopened to modify any limit or provision based on any variances that are granted by South Carolina and approved by EPA

C. Best Management Practices/Pollution Prevention Conditions

In accordance with Section 304(e) and 402(a)(2) of the CWA as amended, 33 U.S.C. §§ 1251 et seq., and consistent with the policy of the Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109, the permittee must develop and implement a Best Management Practices (BMP) plan incorporating pollution prevention measures. This part does not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. A BMP plan developed as a requirement of a previous NPDES permit will satisfy the requirements of this part if it addresses practices to reduce the likelihood of spills or other releases of oil or oil contaminated water, water treatment chemicals, cleaning chemicals, and biocides that may enter waters of the United States. References which may be used in developing the plan are the BMP provisions found at 40 C.F.R. Section 122.44(k) and accompanying guidance for developing and implementing BMPs.

I. Definitions

- a. The term "**pollutants**" refers to conventional, non-conventional and toxic pollutants, as appropriate for the NPDES storm water program and toxic pollutants.
- b. **Conventional pollutants** are: biochemical oxygen demand (BOD), suspended solids, pH, fecal coliform bacteria, and oil and grease.
- c. **Non-conventional pollutants** are those which are not defined as conventional or toxic, such as phosphorus, nitrogen, or ammonia. (Ref: 40 C.F.R. Section 122, Appendix D, Table IV)
- d. For purposes of this part, **Toxic pollutants** include, but are not limited to: i) any toxic substance listed in Section 307(a)(1) of the CWA and any hazardous substance listed in Section 311 of the CWA, and ii) any substance (that is not also a conventional or non-conventional pollutant) for which EPA has published an acute or chronic toxicity criterion, or that is a pesticide regulated by the FIFRA.
- e. "**Pollution prevention**" and "**waste minimization**" refer to the first two categories of EPA's preferred hazardous waste management strategy: first, source reduction and then, recycling.
- f. "**Recycle/Reuse**" is defined as the minimization of waste generation by recovering and reprocessing usable products that might otherwise become waste; or the reuse or reprocessing of usable waste products in place of the original stock, or for other purposes such as material recovery, material regeneration, or energy production.

- g. **"Source reduction"** means any practice which: i) reduces the amount of any pollutant entering a waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and ii) reduces the hazards to public health and the environment associated with the release of such pollutant. The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. It does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a pollutant through a process or activity which itself is not integral to, or previously considered necessary for, the production of a product or the providing of a service.
- h. **"BMP3"** means a Best Management Practices/Pollution Prevention Plan incorporating the requirements of 40 C.F.R. Section 122.44(k), plus pollution prevention techniques, except where other existing programs are deemed equivalent by the permittee. The permittee shall certify the equivalency of the other referenced programs.
- i. **"Waste Minimization Assessment"** means a systematic planned procedure with the objective of identifying ways to reduce or eliminate waste.
- j. The term **"material"** refers to chemicals or chemical products used in any plant operation (i.e., caustic soda, hydrazine, degreasing agents, paint solvents, etc.). It does not include lumber, boxes, packing materials, etc.

2. Best Management Practices/Pollution Prevention Plan

The permittee shall develop and implement a BMP3 plan for the facility which is the source of wastewater discharges covered by this permit. The plan shall be directed toward reducing those pollutants of concern which discharge, or could discharge, to surface waters and shall be prepared in accordance with good engineering and good housekeeping practices. For the purposes of this permit, pollutants of concern shall be limited to toxic pollutants, as defined above, known to the discharger. The plan shall address all activities which could or do contribute these pollutants to the surface water discharge, including process, treatment, and ancillary activities. Any available BMP plan for storm water discharges shall be attached to and become a component of the BMP3 plan.

3. Signatory Authority and Management Responsibilities

A copy of the plan shall be retained at the facility and shall be made available to the permit issuing authority upon request. The BMP3 plan shall contain a written statement from corporate or plant management indicating management's commitment to the goals of the BMP3 program. Such statements shall be publicized or made known to all facility employees. Training shall be provided for the individuals responsible for implementing the BMP3 plan.

4. BMP3 Plan Requirements

The following requirements may be incorporated by reference from existing facility procedures:

- a. name and description of facility, a map illustrating the location of the facility and adjacent receiving waters, and other maps, plot plans or drawings, as necessary;
- b. overall objectives (both short-term and long-term) and scope of the plan, towards reduction of pollutants, anticipated dates of achievement of reduction, and a description of means for achieving each reduction goal;
- c. a description of practices involving preventive maintenance, housekeeping, recordkeeping, inspections, and plant security;
- d. a description of a waste minimization assessment (WMA) plan for this facility, to determine actions that could be taken to reduce waste loadings and chemical losses to all wastewater streams, without compromising production efficiency or jeopardizing operations. The plan shall address both short-term and long-term opportunities for minimizing waste generation at this facility, particularly for high volume and/or high toxicity components of wastewater streams. Initially, the WMA plan should focus primarily on actions that could be implemented quickly, thereby realizing tangible benefits to surface water quality. Long term goals and actions pertaining to waste reduction shall include investigation of the feasibility of eliminating toxic chemical use, instituting process changes, raw material replacements, etc. At minimum, the WMA plan should include the following items:
 - (i) Plant Water Balance - The WMA plan shall include an overall plant water balance, as well as internal water balances, as necessary. This information shall be used to determine any opportunities for water conservation or reuse/recycling and to determine if and where leakages might occur.
 - (ii) Materials and Risk Assessment - A materials and risk assessment shall be developed and shall include the following:
 - (1) identification of the types and quantities of materials used at the facility;
 - (2) identification of the location and types of materials management activities which occur at the facility;

(3) an evaluation of the following aspects of materials compatibility: containment and storage practices for chemicals, container compatibility, chemical mixing procedures; potential mixing or compatibility problems; and specific prohibitions regarding mixing of chemicals;

(4) technical information on human health and ecological effects of toxic or hazardous chemicals presently used or manufactured (including by-products produced) or planned for future use or production; and

(5) analyses of chemical use and waste generation, including input parameters for all pollutants, overall plant material balances and as necessary, internal process balances for all pollutants. (When actual measurements of the quantity of a chemical entering a wastewater stream are not readily available, reasonable estimates should be made based on best engineering judgment.) The analyses should address reasons for using particular chemicals, and/or measures or estimates of the actual and potential chemical discharges via wastewater, wastewater sludge, air, solid waste, or hazardous waste media.

(iii) Pollutant Reduction Methods - The WMA plan shall include, at a minimum, the following means of reducing pollutant discharges in wastewater streams or of otherwise minimizing wastes:

(1) process related source reduction measures, including any or all of the following, as appropriate: improved process controls; reduction in use of toxic or hazardous materials; chemical modifications and/or material purification; chemical substitution employing non-toxic or less toxic alternatives; and equipment upgrades or modifications or changes in equipment use;

(2) housekeeping/operational changes, including waste stream segregation, inventory control, spill and leak prevention, equipment maintenance, and employee training in areas of pollution prevention, good housekeeping, and spill prevention & response;

(3) in-process recycling, on-site recycling, and/or off-site recycling of materials;

(4) following all source reduction and recycling practices, wastewater treatment process changes, including the use of new or improved treatment methods, such that treatment degradation products are less toxic to aquatic or human life; and

(5) other means, as agreed upon by the permit issuing authority and the permittee.

- (iv) Practices which reduce pollutant loading in wastewater discharges with a consequent increase in solid hazardous waste generation, decrease in air quality, or adverse affect to groundwater shall not be considered waste reduction for the purposes of this assessment planning.

5. Best Management Practices and Pollution Prevention Committee:

A Best Management Practices and Pollution Prevention Committee (Committee) should be established to direct or assist in the implementation of the BMP3 plan. The Committee should be comprised of individuals within the plant organization who are responsible for developing, implementing, monitoring of success, and revision of the BMP3 plan. The activities and responsibilities of the Committee should address all aspects of the facility's BMP3 plan. The scope of responsibilities of the Committee should be described in the plan.

6. Employee Training

Employee training programs shall inform appropriate personnel of the components and goals of the BMP3 plan and shall describe employee responsibilities for implementing the plan. Training shall address topics such as good housekeeping, materials management, recordkeeping and reporting, spill prevention and response, as well as specific waste reduction practices to be employed. The plan shall identify periodic dates for such training.

7. Plan Development & Implementation

The BMP3 plan shall be developed or updated within 3 months and implemented 6 months after the effective date of this permit, unless any later dates are specified by the Director. In cases of facilities that were not previously required to have a BMP plan, the plan must be developed within 6 months after the effective date of the permit and implemented within 18 months after the effective date of the permit.

8. Plan Review & Modification

If following review by the Director, or authorized representative, the BMP3 plan is determined insufficient, he/she may notify the permittee that the BMP3 plan does not meet one or more of the minimum requirements of this Part. Upon such notification from the Director, or authorized representative, the permittee shall amend the plan and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have 30 days after such notification to make the changes necessary.

The permittee shall modify the BMP3 plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to waters of the United States or if the plan proves to be ineffective in achieving the general objectives of reducing pollutants in wastewater or storm water discharges. Modifications to the plan may be reviewed by EPA in the same manner as described above.

D. Macroinvertebrate Assessment

1. The permittee shall conduct one macroinvertebrate assessment on Blue Hill Creek and on Long Cane Creek downstream from the discharge location during July, August, or September of each calendar year.
2. The permittee shall submit a study plan for EPA review based on the following document:

EPA publication entitled, "Revision to Rapid Bioassessment Protocols for Use in Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish," by M.T. Barbour, J. Gerritsen, B.D. Snyder, and J.B. Stribling (EPA 841-B-99-002).
3. The study plan shall be submitted to EPA for review within 60 days of the effective date of the permit. Any EPA comments must be considered prior to commencement of actual sampling efforts. An explanation of any deviation from EPA comments must be submitted with the sampling results.
4. Results of a given instream assessment must be submitted to the EPA within 90 days of completion of the sampling.
5. If a water quality standards variance for chronic WET and/or total recoverable copper is granted by DHEC and approved by EPA, the permittee may request a modification to reduce conducting macroinvertebrate assessments from once/year.

PART IV
Acute and Chronic Whole Effluent Toxicity Testing Program

As required by Part I of this permit, the permittee shall initiate the series of tests described below beginning in January 2006 to evaluate acute and chronic whole effluent toxicity of the discharge from outfall 001. All test species, procedures, and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013 (October 2002), or the most current edition. The control and dilution water will be moderately hard water as described in EPA-821-R-02-013, Section 7, or the most current edition. A standard reference toxicant quality assurance chronic toxicity test shall be conducted concurrently with each species used in the toxicity tests and the results submitted with the discharge monitoring report (DMR). Alternatively, if monthly QA/QC reference toxicant tests are conducted, these results must be submitted with the DMR. Any deviation from the bioassay procedures outlined or cited herein shall be submitted in writing to the EPA for review and approval prior to use.

1. a. The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction test and a fathead minnow, Pimephales promelas, Larval Survival and Growth test. All tests shall be conducted using a control (0% effluent) and the following dilution concentrations: for Tier 1 - 100%, 85%, 63%, 42%, and 21%; for Tier 2 - 100%, 88%, 66%, 44%, and 22%; and for Tier 3 - 100%, 89%, 66%, 44%, and 22%. The measured chronic endpoint will be the inhibition concentration causing 25% reduction in survival, reproduction, and/or growth (IC_{25}) of the test organisms. The IC_{25} shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of Ceriodaphnia dubia and Pimephales promelas larvae, as appropriate, used to initiate the test. The measured acute endpoint will be the percent mortality in the 100% concentration at 48 hours.
- b. For each set of tests conducted, a 24 hr. composite sample of final effluent shall be collected and used per the sampling schedule discussed in EPA-821-R-02-013, Section 8.3, or the most current edition.
- c. For either species, if control mortality exceeds 10% by 48 hours or 20% mortality thereafter, the test(s) for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% by 48 hours or 20% thereafter for either species. If, in any separate test, 100% mortality occurs prior to the end of the test, and control mortality is 10% or less if that time is prior to 48 hours or 20% or less thereafter, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable acute and/or chronic toxicity.

Each test must meet the test acceptability criteria for each species as defined in EPA-821-R-02-013, Section 13.12 and Section 11.12, respectively, or the most current edition. Additionally, all test results must be evaluated and reported for concentration-response relationship based on "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 C.F.R. Part 136)", EPA/821/B-00/004 (2000), or the most current edition. If the required concentration-response review fails to yield a valid relationship per EPA/821/B-00/004 (or the most current edition), that test shall be repeated. Any test initiated but terminated prior to completion must be reported with a complete explanation for the termination.

2. a. Monitoring shall be conducted quarterly until eighteen months from the permit effective date. After that date, monitoring shall be conducted once every two months and such tests shall be referred to as "routine" tests. If the results from any six consecutive "routine" tests for a test species show no violations of any limit expressed in Item 3.a below, then the monitoring frequency can be reduced to once every six months thereafter for the duration of the permit for that species. Otherwise, the sampling frequency shall continue once every two months for that species.
 - b. Results from all tests shall be reported according to EPA-821-R-02-013, Section 10, or the most current edition. For all quarterly testing, the actual IC_{25} result obtained shall be reported directly on the DMR. For all subsequent "routine" and additional tests, all results shall be recorded and submitted on the DMR in the following manner: For Tier 1, if the monthly average IC_{25} of a test species is less than or equal to 85% effluent, " $\leq 85\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 85% effluent, ">85%" shall be entered. For Tier 2, if the monthly average IC_{25} of a test species is less than or equal to 88% effluent, " $\leq 88\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 88% effluent, ">88%" shall be entered. For Tier 3, if the monthly average IC_{25} of a test species is less than or equal to 89% effluent, " $\leq 89\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 89% effluent, ">89%" shall be entered. For the 100% effluent concentration in all tests at all Tiers, the percent mortality at 48 hours in each test shall also be separately entered on the DMR for each species. All individual test results for a given month shall be submitted as an attachment to the DMR.
3. a. For all "routine" and additional tests: For Tier 1, a monthly average IC_{25} of less than or equal to 85% effluent will be a violation of the monthly average chronic WET limit of this permit. For Tier 2, a monthly average IC_{25} of less than or equal to 88% effluent will be a violation of the monthly average chronic WET limit of this permit. For Tier 3, a monthly average IC_{25} of less than or equal to 89% effluent will be a violation of the monthly average chronic WET limit of this permit. For any test at any Tier, mortalities of 50% or higher in 100% effluent at 48 hours will be a violation of the daily maximum acute WET limit of this permit.

- b. If an IC_{25} of less than or equal to 85% effluent for Tier 1/an IC_{25} of less than or equal to 88% effluent for Tier 2/an IC_{25} of less than or equal to 89% effluent for Tier 3 is found in a "routine" test, the permittee shall conduct two valid additional tests on each species indicating the violation and report each individual IC_{25} obtained. For any test at any Tier, if mortality of 50% or higher in 100% effluent is found at 48 hours, the permittee shall conduct two valid additional 48-hour acute tests on each species indicating the violation and report each individual LC_{50} obtained.
- c. For Tier 1, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 85%, 63%, 42%, and 21%. For Tier 2, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 88%, 66%, 44%, and 22%. For Tier 3, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 89%, 66%, 44%, and 22%. The dilution series may be modified in the second valid test to more accurately identify the toxicity, such that, if possible, at least two dilutions above (not to exceed 100% effluent) and two dilutions below the receiving waste concentration and a control (0% effluent) are run.
- d. For each additional test, the sample collection requirements and the test acceptability criteria and concentration-response relationships specified in sections 1.b and c. above, respectively, must be met for it to be considered valid. The first additional test shall begin within one week of the end of the "routine" test, and shall be conducted weekly thereafter until two additional valid tests are completed.

INDUSTRIAL FACILITY FACT SHEET

APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
TO WATERS OF THE UNITED STATES

Application No.: SC0000353
Permit Writer: Marshall Hyatt

Application Date: February 3, 2005

1. Synopsis of Application

A. Name and Address of Applicant

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Milliken and Company
Post Office Box 1926, M-482
Spartanburg, South Carolina 29304

For:

Abbeville Facility
601 Brooks Street
Abbeville, Abbeville County, South Carolina 29620

B. Type of Facility

Dyeing and finishing of woven fabrics made from synthetic fabrics and package dyeing of synthetic fibers. Standard Industrial Classification Codes 2262 and 2269.

C. Production Capacity of Facility (2002-2004 average)

Total production - average of 51,700 lbs/day

D. Applicant's Receiving Water

Blue Hill Creek
Latitude: 34° 10' 30" N Longitude: 82° 22' 30" W

See Attachment A for a sketch showing the location of the discharge.

The receiving stream is on South Carolina's Clean Water Act (CWA) § 303(d) list for fecal coliforms and turbidity. Total maximum daily loads have not yet been developed. Based on coordination with EPA's Drinking Water Section, no drinking water intakes are located immediately downstream of this discharge.

E. Description of Wastewater Treatment Facilities

All wastewater is treated via screening, activated sludge, clarification, and post aeration. Sludge is treated via aerobic digestion and belt sludge press and then disposed to a brick manufacturer. Sanitary wastewater is treated by the City of Abbeville treatment facility.

F. Description of Discharge (as reported in application)

Outfall Serial No. 001 - Process Wastewater, Utility Water, and Stormwater

Long-Term Average Flow, MGD - 0.551

Maximum Daily Flow, MGD - 1.823

Pollutants which are present in significant quantities or which are subject to effluent limitations are as follows:

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Effluent Characteristic	Reported Data	
	Maximum Daily	Maximum 30-Day Avg
Biochemical Oxygen Demand, 5-day, mg/l	26	16
Total Suspended Solids, mg/l	123	84.3
Chemical Oxygen Demand, mg/l	459	376.2
Sulfide, mg/l	< 0.1	< 0.1
Phenols, mg/l	< 0.01	< 0.01
Color, standard units	439	94.7
Total Copper, mg/l	0.039	0.1
Total Zinc, mg/l	0.29	0.181
Dissolved Oxygen, mg/l	Not Reported	Not Reported
Temperature, °C.	16 (min)	29.6 (max)
pH, Standard Units	6.95 (min)	8.3 (max)
Ammonia (as N), mg/l	11.6	11.6
Total Chromium, mg/l	< 0.05	< 0.05
Total Mercury, mg/l	Not Reported	<0.0002

PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 3):

	<u>Monthly Avg.</u> Report	<u>Daily Maximum</u> Report
Flow, MGD		
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (90)	Report (180)
(Nov-Feb)	Report (178)	Report (356)
Total Suspended Solids (TSS), lbs/day	650.2	1300.5
Chemical Oxygen Demand, lbs/day	3479	6958
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)
Total Sulfide, lbs/day	7.1	14.2
Total Phenols, lbs/day	3.5	7.1
Total Chromium, lbs/day	3.5	7.1
Dissolved Oxygen (DO)	min. of 6.0 mg/l from Mar-Oct; 5.0 mg/l from Nov-Feb	
pH, standard units (SU)	6.0-8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Total Hardness, mg/l as CaCO ₃ (upstream)	Report	Report
Total Hardness, mg/l as CaCO ₃ (effluent)	Report	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	276	552
(Nov-Feb)	548	1096
Total Recoverable Copper, mg/l (interim)	Report	Report
(final)	0.010	0.012
Chronic Whole Effluent Toxicity (WET), IC ₅₀	89%	---
Acute Whole Effluent Toxicity	---	<50% mortality in 100% effluent at 48 hrs

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3. Basis for Final Effluent Limits and Permit Conditions

The permit conditions and limitations were taken from the following sources:

- The previous NPDES permit (issued March 29, 1996, effective May 1, 1996, modified October 1, 1998, and expired April 30, 2001)
- The Clean Water Act (CWA)
- Title 40, Code of Federal Regulations (C.F.R) Parts 122 and 410
- South Carolina Water Classifications and Standards, (R.61-68), June 25, 2004
- Draft permit and fact sheet rationale prepared by the South Carolina Department of Health and Environmental Control, (DHEC), dated July 13, 2004
- CORMIX modeling information provided with the permittee's 2005 permit application
- Discharge Monitoring Report (DMR) chronic WET data for August 1996- March 2005
- DMR flow data from January 2000-January 2005
- February 8, 2005 submittal of production data as confidential business information by the applicant
- April 6, 2005 letter from the DHEC General Counsel regarding mixing zones
- March 3, 1997-January 17, 2005 letters/reports submitted by/on behalf of Milliken to DHEC for its toxicity reduction/identification efforts in response to the chronic toxicity observed
- May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation
- June 24, 2005 DHEC reasonable potential (RP) spreadsheet analyses
- August 5, 2005 and August 19, 2005 letters from Milliken

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All monitoring frequencies are based on the previous NPDES permit and/or the Best Professional Judgment (BPJ) of the permit writer. Based on evaluation of the flow data from January 2003 to January 2005 which represent current operating conditions, as well as CORMIX modeling information, and a March 17, 2005 site visit to the facility, it is the BPJ of the permit writer that credit for chronic dilution of 85% for Tier 1 (current) production of dyed fabrics and yarns can be given at the discharge point based on the outfall location in the middle of the receiving stream and the expected narrowness of the receiving stream and the effluent-dominated nature of the discharge at lowflow conditions. The 85% dilution corresponds to a Tier 1 average flow of 0.551 MGD. Based on an evaluation of the flow data from January 2000 to January 2003, it is also the BPJ of the permit writer that credit for chronic dilution of 88% for Tier 2 production and 89% for Tier 3 production can be given. The 88% dilution corresponds to a Tier 2 average flow of 0.744 MGD, while the 89% dilution equates to a Tier 3 average flow of 0.82 MGD. Authority for EPA to give credit for mixing zones is provided by an April 6, 2005 letter from the DHEC General Counsel.

For effluent guidelines-based parameters, Tier 1 (current production) is represented by a total production level of 51,700 lbs/day; Tier 2 is represented by a total production level of 62,000 lbs/day, and Tier 3 is represented by a total production level of 71,000 lbs/day. Tier 2 levels are based on a 20% increase in Tier 1 levels. Tier 3 levels are based on the maximum production allowed under the current NPDES permit, rather than a 20% increase in Tier 2 levels. If higher production levels are requested, an antidegradation analysis will need to be submitted. The provisions of permit Item I.A.8 regarding the applicability and notification requirements for a given Tier are based on 40 C.F.R. Section 122.45(b)(2)(ii).

2. Proposed Effluent Limitations

Serial 001 - Process Wastewater, Utility Water, and Stormwater

PARAMETERS**DISCHARGE LIMITATIONS**

Proposed Final Limits (Tier 1):

	<u>Monthly Avg.</u>	<u>Daily Maximum</u>
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (64)	Report (128)
(Nov-Feb)	Report (130)	Report (260)
Total Suspended Solids (TSS), lbs/day	478.4	956.9
Chemical Oxygen Demand, lbs/day	2533	5067
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)
Total Sulfide, lbs/day	5.2	10.3
Total Phenols, lbs/day	2.6	5.2
Total Chromium, lbs/day	2.6	5.2
Dissolved Oxygen (DO)	min. of 6.0 mg/l from Mar-Oct; 5.0 mg/l from Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Total Hardness, mg/l as CaCO ₃ (upstream)	Report	Report
Total Hardness, mg/l as CaCO ₃ (effluent)	Report	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	196	392
(Nov-Feb)	397	794
Total Recoverable Copper, mg/l (interim)	Report	Report
(final)	0.010	0.012
Chronic Whole Effluent Toxicity (WET), IC ₂₅ (interim)	Report	---
(final)	> 85%	---
Acute Whole Effluent Toxicity	---	<50% mortality in 100% effluent at 48 hrs

PARAMETERS**DISCHARGE LIMITATIONS**

Proposed Final Limits (Tier 2):

	<u>Monthly Avg.</u>	<u>Daily Maximum</u>
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (83)	Report (166)
(Nov-Feb)	Report (164)	Report (328)
Total Suspended Solids (TSS), lbs/day	570.1	1140.3
Chemical Oxygen Demand, lbs/day	3038	6076
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)
Total Sulfide, lbs/day	6.2	12.4
Total Phenols, lbs/day	3.1	6.2
Total Chromium, lbs/day	3.1	6.2
Dissolved Oxygen (DO)	min. of 6.0 mg/l from Mar-Oct; 5.0 mg/l from Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Total Hardness, mg/l as CaCO ₃ (upstream)	Report	Report
Total Hardness, mg/l as CaCO ₃ (effluent)	Report	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	255	510
(Nov-Feb)	504	1008
Total Recoverable Copper, mg/l (interim)	Report	Report
(final)	0.010	0.012
Chronic Whole Effluent Toxicity (WET), IC ₅₀ 88%	---	
Acute Whole Effluent Toxicity	---	
		<50% mortality in 100% effluent at 48 hrs

Proposed Permit Conditions and Justification:

Parameter: Flow, MGD
Proposed Condition: Monitor only

Justification: The requirement to monitor flow is consistent with CWA §§ 308(a) and 402(a)(2).

Parameter: Biochemical Oxygen Demand (5-Day) (BOD₅), mg/l (lbs/day)
Proposed Condition: Monthly Average - Tier 1 - Report (64 lbs/day Mar-Oct; 130 lbs/day Nov-Feb)
Tier 2 - Report (83 lbs/day Mar-Oct; 164 lbs/day Nov-Feb)
Tier 3 - Report (90 lbs/day Mar-Oct; 178 lbs/day Nov-Feb)

Daily Maximum - Tier 1 - Report (128 lbs/day Mar-Oct; 260 lbs/day Nov-Feb)
Tier 2 - Report (166 lbs/day Mar-Oct; 328 lbs/day Nov-Feb)
Tier 3 - Report (180 lbs/day Mar-Oct; 356 lbs/day Nov-Feb)

Justification: Based on Best Professional Judgment (BPJ) of the permit writer,

Utility wastewater = 0.11 MGD

Monthly Average: $(0.11 \text{ MGD}) (10 \text{ mg/l}) (8.34) = 9.2 \text{ lbs/day}$

Daily Maximum: $(0.11 \text{ MGD}) (20 \text{ mg/l}) (8.34) = 18.3 \text{ lbs/day}$

Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42):

Tier 1 $(3.3 \text{ lbs}/1000 \text{ lbs production}) (51,700 \text{ lbs/day production}) = 170.6 \text{ lbs/day}$
Monthly Average:

Tier 1 $(6.6 \text{ lbs}/1000 \text{ lbs production}) (51,700 \text{ lbs/day production}) = 341.2 \text{ lbs/day}$
Daily Maximum

Total: Monthly Average - $(9.2 \text{ lbs/day}) + (170.6 \text{ lbs/day}) = 179.8 \text{ lbs/day}$

Daily Maximum - $(18.3 \text{ lbs/day}) + (341.2 \text{ lbs/day}) = 359.5 \text{ lbs/day}$

Previous Permit: Monthly Average - 95 lbs/day (March - October)
153 lbs/day (November - February)

Daily Maximum - 50 mg/l, 190 lbs/day (March - October)
50 mg/l, 306 lbs/day (November - February)

For each Tier, the BOD₅ limits needed to meet instream DO criteria contained in the May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation are more stringent than those cited above based on the previous permit's water quality-based mass limits or the technology-based mass limits. Because they are more stringent, the monthly average and daily maximum BOD₅ limits in the May 18, 2005 DHEC evaluation will be used directly as the permit limits. After evaluating monitoring data from the January 2002-May 2005 period, it is the BPJ of the permit writer that the facility can meet the draft limits and that no compliance schedule is needed. Based on an August 19, 2005 letter from the facility, a review of daily maximum concentration data for the period January 2002-May 2005 showed no reasonable potential to exceed the limit of 50 mg/l from the previous permit. Therefore, that concentration limit will not be retained.

Parameter: Total Suspended Solids (TSS), (lbs/day)
Proposed Condition: Monthly Average - Tier 1 total - 478.4 lbs/day
Tier 2 total - 570.1 lbs/day
Tier 3 total - 650.2 lbs/day

Daily Maximum - Tier 1 total - 956.9 lbs/day
Tier 2 total - 1140.3 lbs/day
Tier 3 total - 1300.5 lbs/day

Justification: Based on BPJ of the permit writer,
utility wastewater average flow = 0.11 MGD

Monthly Average: (0.11 MGD) (20 mg/l) (8.34) = 18.3 lbs/day

Daily Maximum: (0.11 MGD) (40 mg/l) (8.34) = 36.7 lbs/day

Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42):

Monthly Average: (8.9 lbs/1000 lbs production) (51,700 lbs/day production) = 460.1 lbs/day

Daily Maximum: (17.8 lbs/1000 lbs production) (51,700 lbs/day production) = 920.2 lbs/day

Tier 1 Total: Monthly Average - 18.3 lb/s/day + 460.1 lbs/day = 478.4 lbs/day
Daily Maximum - 36.7 lbs/day + 920.2 lbs/day = 956.9 lbs/day

Tier 2: Monthly Average: (8.9 lbs/1000 lbs production) (62,000 lbs/day production) = 551.8 lbs/day

Daily Maximum: (17.8 lbs/1000 lbs production) (62,000 lbs/day production) = 1103.6 lbs/day

Tier 2 Total: Monthly Average - 18.3 lb/s/day + 551.8 lbs/day = 570.1 lbs/day
Daily Maximum - 36.7 lbs/day + 1103.6 lbs/day = 1140.3 lbs/day

Tier 3: Monthly Average: $(8.9 \text{ lbs}/1000 \text{ lbs production}) (71,000 \text{ lbs/day production}) = 631.9 \text{ lbs/day}$
Daily Maximum: $(17.8 \text{ lbs}/1000 \text{ lbs production}) (71,000 \text{ lbs/day production}) = 1263.8 \text{ lbs/day}$
Tier 3 Total: Monthly Average - $18.3 \text{ lb/s/day} + 631.9 \text{ lbs/day} = 650.2 \text{ lbs/day}$
Daily Maximum - $36.7 \text{ lbs/day} + 1263.8 \text{ lbs/day} = 1300.5 \text{ lbs/day}$

Parameter: Chemical Oxygen Demand, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 2533 lbs/day
Tier 2 - 3038 lbs/day
Tier 3 - 3479 lbs/day

Daily Maximum - Tier 1 - 5067 lbs/day
Tier 2 - 6076 lbs/day
Tier 3 - 6958 lbs/day

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Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a), (b), and (c)):

The February 3, 2005 permit application indicates that roughly 10% of total production is synthetic woven fabrics, simple processing and thus, 40 C.F.R. 410.43(b) applies. The application also indicates that roughly 90% of total production is synthetic woven fabrics, complex processing and thus, 40 C.F.R. 410.43(c) applies. Based on the BPJ of the permit writer, these proportions will be used to calculate the draft permit limits.

Tier 1: Monthly Average: $[(30 + 10 \text{ lbs}/1000 \text{ lbs production}) (.1) + (30 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.9)] (51,700 \text{ lbs production}) = 2533 \text{ lbs/day}$
Daily Maximum: $[(60 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.1) + (60 + 40 \text{ lbs}/1000 \text{ lbs production}) (0.9)] (51,700 \text{ lbs production}) = 5067 \text{ lbs/day}$
Tier 2: Monthly Average: $[(30 + 10 \text{ lbs}/1000 \text{ lbs production}) (.1) + (30 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.9)] (62,000 \text{ lbs production}) = 3038 \text{ lbs/day}$
Daily Maximum: $[(60 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.1) + (60 + 40 \text{ lbs}/1000 \text{ lbs production}) (0.9)] (62,000 \text{ lbs production}) = 6076 \text{ lbs/day}$
Tier 3: Monthly Average: $[(30 + 10 \text{ lbs}/1000 \text{ lbs production}) (.1) + (30 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.9)] (71,000 \text{ lbs production}) = 3479 \text{ lbs/day}$
Daily Maximum: $[(60 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.1) + (60 + 40 \text{ lbs}/1000 \text{ lbs production}) (0.9)] (71,000 \text{ lbs production}) = 6958 \text{ lbs/day}$

Parameter: Ammonia-Nitrogen, mg/l (lbs/day)
Proposed Condition: Monthly Average - for Tiers 1, 2, and 3: Report (Report)
Daily Maximum - for Tiers 1, 2, and 3: Report (Report)

Justification:

Based on information provided in August 5 and August 19, 2005 letters from the applicant, use of urea at the facility ended in approximately February 2002. An evaluation of effluent data from March 2002-May 2005 thus appears representative of current conditions. Use of a maximum effluent value of 1.144 mg/l from this period indicates that there is no reasonable potential to exceed applicable South Carolina water quality criteria. As ammonia effluent information is needed to assess compliance with the UOD limits, monitoring only for this parameter will continue as in the current NPDES permit.

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Parameter: Total Sulfide, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Daily Maximum - Tier 1 - 10.3 lbs/day
Tier 2 - 12.4 lbs/day
Tier 3 - 14.2 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.10 lbs/1000 lbs production) (51,700 lbs/day production) = 5.2 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (51,700 lbs/day production) = 10.3 lbs/day

Tier 2: Monthly Average: (0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (62,000 lbs/day production) = 12.4 lbs/day

Tier 3: Monthly Average: (0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (71,000 lbs/day production) = 14.2 lbs/day

Parameter: Total Phenols, lbs/day

Proposed Condition: Monthly Average - Tier 1 - 2.6 lbs/day
Tier 2 - 3.1 lbs/day
Tier 3 - 3.5 lbs/day

Daily Maximum - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.05 lbs/1000 lbs production) (51,700 lbs/day
production) = 2.6 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (51,700 lbs/day
production) = 5.2 lbs/day

Tier 2: Monthly Average: (0.05 lbs/1000 lbs production) (62,000 lbs/day
production) = 3.1 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (62,000 lbs/day
production) = 6.2 lbs/day

Tier 3: Monthly Average: (0.05 lbs/1000 lbs production) (71,000 lbs/day
production) = 3.5 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (71,000 lbs/day
production) = 7.1 lbs/day

Parameter: Total Chromium, lbs/day

Proposed Condition: Monthly Average - Tier 1 - 2.6 lbs/day
Tier 2 - 3.1 lbs/day
Tier 3 - 3.5 lbs/day

Daily Maximum - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.05 lbs/1000 lbs production) (51,700 lbs/day
production) = 2.6 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (51,700 lbs/day
production) = 5.2 lbs/day

Tier 2:	Monthly Average:	(0.05 lbs/1000 lbs production) (62,000 lbs/day production) = 3.1 lbs/day
	Daily Maximum:	(0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day
Tier 3:	Monthly Average:	(0.05 lbs/1000 lbs production) (71,000 lbs/day production) = 3.5 lbs/day
	Daily Maximum:	(0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Parameter: Dissolved Oxygen (DO), mg/l
Proposed Condition: shall not be less than 6.0 during Mar-Oct; 5.0 during Nov- Feb

Justification: The effluent limitation is based on a DHEC May 18, 2005 ammonia evaluation and the anti-backsliding provisions of ~~DRAFT~~ Section 122.44(l).

Parameter: pH, Standard Units
Proposed Condition: 6.0-8.5

Justification: Textile Mills Point Source Category, Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42): 6.0 - 9.0

Current Permit: 6.0 - 8.5

Based on the BPJ of the permit writer, since the current permit's water-quality based limits are more stringent than the technology-based limits prescribed above, are being attained, and meet the state water quality criteria found in SC Water Classification and Standards R. 61-68.G.10.f, they will be retained in the draft permit due to the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: Temperature, °C.
Proposed Condition: Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample
Downstream of Discharge - Report each individual sample
(Downstream - Upstream) - Calculate for each sampling

Justification:

Because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), upstream, downstream, and effluent sampling are being required under the authority of CWA §§ 308(a) and 402(a)(2) to assess whether the facility may have the RP to cause, or contribute to, exceedances of South Carolina's freshwater stream criteria found at SC Rule 61-68.E.12.a. Once/week sampling for one year will provide sufficient data to make this determination. If

Parameter: Color, ADMI
Proposed Condition: For both true and apparent color:
Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample
Downstream of Discharge - Report each individual sample
(Downstream - Upstream) - Calculate for each sampling

Justification:

The February 3, 2005 permit application reports a long-term average value of 94.7 standard units and a daily maximum value of 439 standard units, based on 319 measurements. Due to these elevated values and because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), the facility may be discharging color levels that have the RP to interfere with classified water uses or existing water uses and thus violate South Carolina's narrative criterion at Rule 61-68.E.5.c. The authority for such upstream, downstream, and effluent true and apparent color monitoring to assess RP is provided by CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. In balancing the cost of the number of samples taken with assessing the variability of the effluent, it is the BPJ of the permit writer that once/week sampling for the first full April-October period after the permit effective date is sufficient to assess RP during critical lowflow conditions. If data indicate there is RP, the permit will be modified to include appropriate limits. The authority to ultimately require numeric limits to maintain and protect a narrative color water quality criterion is provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (vi), and (vii)(A), and 122.44(d)(5). Authority for such is also provided in a December 1, 1986 decision of the Asheville North Carolina Division of US District Court (Civ. No. A-C-86-26) and a June 24, 1988 decision of the Fourth Circuit US Court of Appeals (No. 87-3529).

Parameter: Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l
Proposed Condition: Monthly Average - Report
Daily Maximum - Report

Justification:

The March 29, 1996 current NPDES permit requires monthly chronic WET monitoring of 89.4% effluent using Ceriodaphnia dubia reproduction and survival as the endpoints. A given test is considered a failure if there is a statistically significant difference at the 95% confidence level in Ceriodaphnia reproduction or survival between a control and 89.4% effluent, which was the instream waste concentration at lowflow conditions. A review of the DMR data for the period April 1996-March 2005 shows 107/108 chronic WET test failures. If any test fails, a "1" must be reported on the DMR and a toxicity reduction evaluation (TRE) plan must be submitted to the permitting authority within 60 days of notification of test results.

For each chronic WET failure cited above, various monthly TRE plans submitted by the facility for the period March 3, 1997-January 17, 2005 are available to EPA. An October 3, 1997 submittal concludes "The toxicity identification phase of the [November 1996] study has been completed and the results from the study indicate that high surfactant loading into the Abbeville Plant wastewater treatment facility was the major contributor to effluent toxicity during the study period." This submittal also states "Surfactants are introduced at multiple areas at the Abbeville Plant." Multiple subsequent TRE monthly plans by the facility, including the January 17, 2005 submittal, contain the statement "A Toxicity Identification Evaluation ("TIE"), completed in May, 1997, indicated that a major contributor to toxicity was the presence of surface-active agents (surfactants) in the wastewater discharge." Periodic TRE plans from February 28, 2001 to January 17, 2005 contain the statement that "*Wherever possible* [emphasis added], significant reductions or complete elimination of the surfactants has occurred. Replacement of these surfactants has not produced any noticeable toxicity result." However, only a few of these TRE plans quantified the levels of surfactants discharged, so the extent of reduction or the variability of the levels currently discharged is unknown.

Because the effluent continues to be toxic, it is the BPJ of the permit writer that surfactants may continue to contribute to ongoing chronic toxicity observed at the plant and that monitoring is needed to verify existing discharge levels and document any future changes or improvements in the amounts discharged. The authority for such monitoring is CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and (4) and 122.48. Monitoring for anionic surfactants shall be conducted by Method 5540 C, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. It is the BPJ of the permit writer that for six months after the permit effective date, monitoring shall be conducted once/week and thereafter, once/month.

Parameter: Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l
Proposed Condition: Monthly Average - Report; Daily Maximum - Report

Justification: See justification for anionic surfactants as MBAS above. Monitoring for nonionic surfactants shall be conducted by Method 5540 D, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. In an August 5, 2005 letter, Milliken stated that no cationic surfactants are used at the Abbeville facility, so no monitoring for that category will be required.

Parameter: Total Mercury, ng/l
Proposed Condition: Daily Maximum - Report

Justification:

The 0.0002 mg/l detection level reported in the February 3, 2005 permit application appears to be based on EPA Method 245.1 and is not as sensitive as that obtained with EPA Method 1631E (0.000005 mg/l). Because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), quarterly sampling using EPA Method 1631E is being required to assess whether the discharge has the RP to cause, or contribute to, excursions of South Carolina's mercury aquatic life criteria. The monitoring is required under the authority of CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. If data indicate there is RP,

Parameter: Total Hardness, mg/l as CaCO₃
Proposed Condition: Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample

Justification:

Because the toxicity of total recoverable copper is influenced by the level of total hardness that is present and because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), upstream and effluent sampling are being required under the authority of CWA §§ 308(a) and 402(a)(2) to assess whether the facility may have the RP to cause, or contribute to, exceedances of South Carolina's freshwater stream criteria found at SC Rule 61-68.E.12.a. Based on the BPI of the permit writer, sampling shall be conducted once/week for one year after the permit effective date, concurrent with temperature and copper sampling. The data will be evaluated to determine, if appropriate, a long-term average downstream total hardness level at low flow conditions. In turn, that information may be used to modify the total recoverable copper limits.

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Parameter: Ultimate Oxygen Demand, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 196 lbs/day (Mar-Oct); 397 lbs/day (Nov-Feb)
Tier 2 - 255 lbs/day (Mar-Oct); 504 lbs/day (Nov-Feb)
Tier 3 - 276 lbs/day (Mar-Oct); 548 lbs/day (Nov-Feb)

Daily Maximum - Tier 1 - 392 lbs/day (Mar-Oct); 794 lbs/day (Nov-Feb)
Tier 2 - 510 lbs/day (Mar-Oct); 1008 lbs/day (Nov-Feb)
Tier 3 - 552 lbs/day (Mar-Oct); 1096 lbs/day (Nov-Feb)

Justification:

Because the amounts of BOD₅ and ammonia that are discharged can vary and impact dissolved oxygen water quality criteria, it is the BPI of the permit writer that limits for the parameter ultimate oxygen demand were appropriate. The monthly average limits above are obtained from the May 18, 2005 DHEC ammonia and UOD evaluation and assume that the long-term average total ammonia level for the period March 2002 - May 2005 is being discharged. Because the draft daily maximum BOD₅ and ammonia permit limits are based on multiplying the corresponding monthly average limits by a factor of two, it is the BPI of the permit writer that the UOD daily maximum limits should also be based on multiplying the corresponding monthly average limits by a factor of two.

Floating Solids, Visible Foam, and Visible Sheen

The permit conditions prohibiting floating solids and visible foam in other than trace amounts and prohibiting a visible sheen are consistent with the previous NPDES permit and the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: Total Recoverable Copper, mg/l
Proposed Condition: interim: Report monthly average and daily maximum
final: Tier 1 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum
Tier 2 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum
Tier 3 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum

Justification:

The February 3, 2005 permit application reports total copper levels of 0.339 mg/l as a daily maximum, 0.1 mg/l as a maximum 30-day value, and a long-term average of 0.02 mg/l, based on 319 samples. See the June 24, 2005 DHEC reasonable potential analyses in Attachment B. Based on those analyses, RP to cause, or contribute to, exceedances of South Carolina's acute and chronic copper criteria at Rule 61.68 exists for Tiers 1, 2, and 3. The authority for a copper water quality-based limit is provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as ~~DRAFT~~ Sections 122.44(d)(1)(i), (iii), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.d, E.14.a.2, and E.14.c.1. The monthly average limits for each Tier above are intended to meet applicable SC chronic copper criteria instream at lowflow conditions, while the daily maximum limits above are intended to meet applicable SC acute copper criteria at the end of the pipe.

In assessing RP for the facility's discharge to cause, or contribute to, excursions of SC's acute and chronic copper criteria, EPA accounted for: 1.A) existing controls on point sources via: 1) the screening, activated sludge wastewater treatment, clarification, and post aeration provided to the facility's effluent; and 2) the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions and the nearest point source downstream of the discharge is the City of Abbeville wastewater, two miles downstream; 1.B) existing controls on nonpoint sources of pollution by assuming that background copper concentrations are zero at lowflow conditions; 2) variability of the effluent through the 319 samples cited in the permittee's February 3, 2005 permit application; and 3) dilution of the effluent in the receiving stream by giving credit for lowflow conditions and assuming background lowflows are not toxic.

The permittee is pursuing a variance for this parameter from DHEC. If adopted, it must also be approved by EPA to be used for CWA purposes. Because the final result of those processes will not be known for some time, the permit is being drafted to reflect current SC water quality requirements. See Fact Sheet Item 5 for compliance schedule rationale. The permit includes a reopener in the event a modification is needed to implement any variance that is ultimately adopted and approved.

Because use of multiple test species with different sensitivities can more effectively characterize exposure to different pollutants and effluent variability, EPA believes the combined use of two test species to assess impacts on reproduction and growth will better maintain and protect South Carolina's surface waters at all times from substances harmful to aquatic life, as specified in SC Rule 61-68.E.5.d. EPA is thus requiring use of Ceriodaphnia dubia and Pimephales promelas (fathead minnow) as chronic WET test species for 40 C.F.R. Section 136 test methods to assess the reproductive and growth endpoints in this permit. Use of these two WET test species is consistent with past Regional practice. Authority to require two test species to assess chronic WET reproductive and growth endpoints is provided by CWA §§ 301(b)(1)(C), 308(a), and 402(a)(2), as well as 40 C.F.R. Sections 122.44(j)(1), (j)(4), and 122.48(a) and (b). Use of two WET test species is also consistent with the definitions of "aquatic toxicity test", "biological monitoring", "chronic", "propagation", and "whole effluent toxicity" at SC Rules 61-68.B.9, B.19, B.21, B.48, and B.62, respectively, and with SC Rules 61-68.E.14.c.10 and 61-68.E.17. See Fact Sheet Item 5 for compliance schedule rationale.

The chronic WET methods required in this permit were promulgated by EPA on October 16, 1995 as Part 136 methods. EPA's 1995 promulgation of these methods was upheld in a December 10, 2004 decision by the D.C. Circuit U.S. Court of Appeals (No. 96-1062). Authority to use 40 C.F.R. Part 136 chronic WET methods with reproductive and growth endpoints to assess compliance with NPDES chronic WET permit limits is provided by CWA §§ 308(a) and 402(a)(2), as well as 40 C.F.R. Section 122.41(j)(4) and SC Rules 61-68.E.14.c.10 and 17.

The permittee is pursuing a variance for this parameter from DHEC. If adopted, it must also be approved by EPA to be used for CWA purposes. Because the final result of those processes will not be known for some time, the permit is being drafted to reflect current SC water quality requirements. See Fact Sheet Item 5 for compliance schedule rationale. The permit includes a reopener in the event a modification is needed to implement any variance that is ultimately adopted and approved.

Parameter: Acute WET:
Proposed Condition: < 50% mortality in 100% effluent in 48 hours

Justification:

Imposition of a chronic WET monthly average limit without a corresponding daily maximum limit to protect against acutely toxic effects may lead to an excursion of South Carolina's narrative water quality criterion cited below (Rule 61-68.E.5.d):

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except classified uses within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life."

Parameter: Chronic Whole Effluent Toxicity (WET), IC₂₅
Proposed Condition: interim: Report monthly average and daily maximum
final: Tier 1 - > 85%
Tier 2 - > 88%
Tier 3 - > 89%

Justification:

The March 29, 1996 current NPDES permit for this facility required final monthly chronic WET monitoring of 89.4% effluent using Ceriodaphnia dubia reproduction and survival as the endpoints. A given test is considered a failure if there is a statistically significant difference at the 95% confidence level in Ceriodaphnia reproduction or survival between a control and 89.4% effluent, which was the instream waste concentration at lowflow conditions. If any test fails, a "1" must be reported on the DMR and a toxicity reduction evaluation plan must be submitted to the permitting authority within 60 days of notification of test results.

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A review of the DMR data for the period April 1996-March 2005 shows 107/108 chronic WET test failures. Based on these data, EPA has determined that this facility has RP to cause, or contribute to, excursions of South Carolina's narrative water quality criterion cited below (Rule 61-68.E.5.d):

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except classified uses within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life."

Thus, a chronic WET permit limit is authorized and required by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (v), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.c, E.5.d, and E.14.c.10.

In assessing RP for the facility's discharge to cause, or contribute to, excursions of SC's narrative criteria cited above, EPA accounted for: 1.A) existing controls on point sources via: 1) the screening, activated sludge wastewater treatment, clarification, and post aeration provided to the facility's effluent; and 2) the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions and the nearest point source downstream of the discharge is the City of Abbeville wastewater plant, two miles downstream; 1.B) existing controls on nonpoint sources of pollution by assuming their effect is negligible at background lowflow conditions; 2) variability of the effluent through the 106 Ceriodaphnia chronic pass/fail tests cited above; 3) dilution of the effluent in the receiving stream by giving credit for lowflow conditions and assuming background lowflows are not toxic; and 4) species sensitivity through the 108 Ceriodaphnia pass/fail chronic tests cited above and two fathead minnow chronic tests based on samples collected on December 14, 2004 and January 11, 2005 as reported in the February 3, 2005 permit application.

Also, compliance with a chronic WET monthly average limit alone may not guarantee that acutely toxic conditions would not occur on a given day. Thus, an acute WET permit limit at the end of the pipe is authorized and required by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(vii)(A) and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.c, E.5.d, and E.14.c.10.

Although no facility-specific acute WET data are available, EPA's March 1991 "Technical Support Document for Water Quality-based Toxics Control" does provide guidance on assessing RP for the need for permit limits without effluent monitoring data for a given facility and the need to take into account, where appropriate, the factors and requirements of 40 C.F.R. Section 122.44(d)(1)(ii).

Regarding dilution, because the facility's instream waste concentration is 85%, 88%, and 89% at lowflow conditions for Tiers 1, 2, and 3, respectively, and thus accounts for the majority of the receiving stream, there is a higher potential for toxic effect due to the low amount of available dilution. Also, the position of the outfall in the middle of the approximately 15-foot wide, shallow receiving stream limits the ability to provide safe passage to aquatic organisms at lowflow conditions. These factors support the need for a daily maximum acute WET permit limit applied at the end of the pipe.

Regarding existing controls on point sources of pollution, the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions; the nearest point source downstream of the discharge is the City of Abbeville wastewater plant, two miles downstream. Because the facility is a textile facility, it is considered to be a primary industrial category by EPA and of principal toxicity concern. Also, the daily maximum values for aluminum (1.25 mg/l) and copper (0.339 mg/l) reported in the permittee's February 3, 2005 permit application exceed EPA's and/or South Carolina's corresponding acute aquatic life criteria (aluminum - 0.75 mg/l; copper - 0.012 mg/l). In addition, the 107/108 chronic WET test failures cited above are indicative of a toxic discharge. These factors also support the need for a daily maximum acute WET permit limit applied at the end of the pipe.

Regarding existing controls on nonpoint sources of pollution, their effect is assumed to be negligible at background lowflow conditions.

Based on the above factors and determinations, it is the BPJ of the permit writer that the discharge also has the RP to cause, or contribute to, excursions of South Carolina's Rule 61-68.E.5.d due to acute toxicity. Thus, an acute WET limit at the end of the pipe is also authorized and required by 40 C.F.R. Sections 122.44(d)(1)(i), (ii), and (v).

Because use of multiple test species with different sensitivities can more effectively characterize exposure to different pollutants and effluent variability, EPA believes the combined use of two test species to assess impacts on survival will better maintain and protect South Carolina's surface waters at all times from substances harmful to aquatic life, as specified in SC Rule 61-68.E.5.d above. EPA is thus using the results from Ceriodaphnia dubia and Pimephales promelas (fathead minnow) in the

chronic WET tests to assess the survival endpoint at 48 hours in this permit. Use of these two WET test species is consistent with past Regional practice. Authority to require two test species to assess the acute WET survival endpoint is provided by CWA §§ 301(b)(1)(C), 308(a), and 402(a)(2), as well as 40 C.F.R. Sections 122.44(j)(1), (j)(4), and 122.48(a) and (b). Use of two WET test species is also consistent with the definitions of "acute", "aquatic toxicity test", "biological monitoring", "propagation", and "whole effluent toxicity" at SC Rules 61-68.B.3, B. 9, B.19, B.48, and B.62, respectively, and with SC Rules 61-68.E.14.c.10 and E.17. The use of two WET species is also consistent with the definition for "Freshwaters" found at SC Rule 61-68.G.10. Authority to use results from 40 C.F.R. Part 136 chronic WET methods to assess compliance with the survival endpoint for an NPDES permit acute WET limit is provided by CWA §§ 308(a) and 402(a)(2), as well as 40 C.F.R. Section 122.41(j)(4), and SC Rules 61-68.E.14.c.10 and 17.

Best Management Practices/Pollution Prevention Conditions:

The requirements in Part III.C are based on §§ 304(e) and 402(a)(2) of the CWA and are consistent with the policy of the Pollution Prevention Act of 1990. The ~~Discharge~~ ^{Discharge} conditions are intended to also use best management practices (BMP) to control plant site runoff, spillage, or leaks and drainage from raw material storage areas that may contribute significant amounts of toxic pollutants to navigable waters. These conditions do not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. A BMP plan developed as a requirement of the previous NPDES permit for this facility will satisfy the requirements of this part if it addresses practices to reduce the likelihood of spills or other releases of oil or oil contaminated water, water treatment chemicals, cleaning chemicals, and biocides that may enter waters of the United States. These conditions do not apply to storm water BMP provisions already required under a multi-sector general permit.

Macroinvertebrate Assessment:

Results from these assessments will aid in determining whether this discharge is complying with: 1) South Carolina's narrative criterion at Rule 61-68.E.5.c:

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from sewage, industrial, or other waste which produce taste or odor or change the existing color or physical, chemical, or biological conditions in the receiving waters or aquifers to such a degree as to create a nuisance, or interfere with classified water uses (except classified uses within mixing zones as described in this regulation) or existing water uses.";

2) SC Rules 61-68.C.3 and 7, regarding protection of all uses and existing and classified uses of downstream waters; and 3) SC Rule 61-68.F.1.c., "the objective of maintaining and improving all surface waters to a level that provides for the survival and propagation of a balanced indigenous aquatic community." The required assessment is consistent with the definitions of "biological assessment" and "biological monitoring" at SC Rules 61-68.B.17 and 19, respectively - results from the assessment will indicate compliance with water quality standards and document water quality trends. Authority for such monitoring is also provided by CWA §§ 308(a) and 402(a)(2), 40 C.F.R. Sections 122.43 and 122.48(a), as well as SC Rules 61-68.E.1, 4.a, 17.b, and F.1.d. It is the BPJ of the permit writer that

conducting one assessment/year during critical lowflow conditions is sufficient to assess compliance with the SC Rules cited above. The permit may be modified to change the sampling frequency if a variance for chronic WET and/or copper is adopted by SC and approved by EPA.

Antimony and Zinc:

The March 29, 1996 current NPDES permit includes concentration limits for antimony and mass limits for zinc. The fact sheet for that permit indicates that these limits are water quality-based. A review of the June 24, 2005 DHEC RP spreadsheet analyses indicates no RP for either antimony or zinc to cause, or contribute to, exceedances of SC's aquatic life criteria. Therefore, based on the BPJ of the permit writer, these limits will not be retained in the draft permit.

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4. Requested Variances or Alternatives to Required Standards

None.

5. Effective Date of Proposed Effluent Limits and Compliance Schedule

- For all parameters except those specified below, the permittee shall achieve compliance with the effluent limitations immediately upon the permit effective date.

For total recoverable copper and chronic WET, the previous permit required monitoring only. Based on the rationale provided above, there is RP for both parameters to exceed State water quality criteria and limits are required. Because this is the first time such limits are being applied to this facility and because compliance cannot be achieved immediately, the facility is eligible for a compliance schedule. It is the BPJ of the permit writer that a compliance schedule of 21 months can be given to implement these limits. This is consistent with 40 C.F.R. Section 122.47(a)(1), where compliance is required as soon as possible.

6. State Certification Requirements

State certification of the proposed permit will be deemed waived if not provided within 60 days of EPA's request, per 40 C.F.R. Section 124.53(c)(3).

7. Discussion of Previous NPDES Permit Conditions

The NPDES permit (issued March 29, 1996, effective May 1, 1996, modified October 1, 1998, and expired April 30, 2001) contained the following final permit conditions:

Tier 1 - 51,000 lbs/day of woven finished fabric production at flowrate of 0.668 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	455	910
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	2550	5100
Total Chromium, lbs/day	2.55	5.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.746	1.491
Sulfide, lbs/day	5.6	10.2
Phenols, lbs/day	2.55	5.10
Zinc, lbs/day	1.97	2.15
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

Tier 2 - 61,000 lbs/day of woven finished fabric production at flowrate of 0.744 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	544	1090
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	3050	6100
Total Chromium, lbs/day	3.05	6.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.736	1.472
Sulfide, lbs/day	6.1	12.2
Phenols, lbs/day	3.05	6.10
Zinc, (lbs/day)	2.17	2.37
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

Tier 3 - 71,000 lbs/day of woven finished fabric production at flowrate of 0.820 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	633	1266
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	3550	7100
Total Chromium, lbs/day	3.55	7.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.728	1.456
Sulfide, lbs/day	7.1	14.2
Phenols, lbs/day	3.55	7.10
Zinc, lbs/day	2.37	2.59
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

8. EPA Contact

Additional Information concerning the permit may be obtained at the address and during the hours noted in Section 9 from :

Ms. Ann Brown
Public Notice Coordinator
404-562-9288

9. The Administrative Record, including application, draft permit, fact sheet, public notice (after release), comments received, and additional information is available by writing the EPA, Region 4, or for review and copying at 61 Forsyth St., SW, Atlanta, GA 30303-8960, between the hours of 8:15 A.M. and 4:30 P.M., Monday Through Friday. Copies will be provided at a minimal charge per page.

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10. Proposed Schedule for Permit Issuance

Draft Permit to Applicant	June 28, 2005
Request CWA § 401 Certification	September 15, 2005
Public Notice Date	September 15, 2005
Proposed Issuance Date	December 1, 2005
Proposed Effective Date	January 1, 2006

11. Procedures for the Formulation of Final Determinations

a. Comment Period

The Environmental Protection Agency proposes to issue an NPDES permit to this applicant subject to the aforementioned effluent limitations and special conditions. These determinations are tentative and open to comment from the public.

Interested persons are invited to submit written comments on the draft permit to the following address:

Water Management Division
Environmental Protection Agency
Sam Nunn Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960
ATTN: Ann Brown, Public Notice Coordinator

All persons, including applicants, who believe any condition of a draft permit is inappropriate or that the Director's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). Any supporting materials which are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consist of State or Federal statutes and regulations, EPA documents of general applicability, or other generally available reference materials. Commenters shall make supporting materials not already included in the administrative record available to EPA as directed by the Regional Administrator. (A comment period longer than 30 days may be necessary to give commenters a reasonable opportunity to comply with the requirements of this section. Additional time shall be granted as per 40 C.F.R. Section 124.10 to the extent that a commenter who requests additional time demonstrates the need for such time.)

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All comments received within thirty (30) days following the date of public notice, or if the public comment period is extended, by the end of the public comment period, will be considered in the formulation of final determinations with regard to proposed permit issuance.

b. Public Hearing

The EPA Regional Administrator will hold a public hearing if there is a significant degree of public interest in a proposed permit or group of permits, or may hold a public hearing, at his discretion, if useful information and data may be obtained thereby. Public Notice of such a hearing will be circulated at least thirty days prior to the hearing.

c. Issuance of the Permit

After consideration of all written comments and of the requirements and policies in the CWA and appropriate regulations, and, if a public hearing is held, after consideration of all comments, statements and data presented at the hearing, the EPA Regional Administrator will make determinations regarding the permit issuance. Under 40 C.F.R. Section 124.14, the Regional Administrator may reopen the public comment period if this could expedite the decision making process. If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning the permit, the Regional Administrator may prepare a new draft permit, a revised fact sheet or statement of basis, and reopen the public comment period limited to those substantial new questions that caused the reopening.

After the close of the public comment period on a draft permit, the Regional Administrator shall issue a final permit decision, including a response to comments. The Regional Administrator will so notify the applicant, all persons submitting written comments, all persons that have requested notice of the final permit decision, and, if a public hearing was held, all persons participating in the hearing.

d. Appeal of NPDES Permits

Within 30 days after an NPDES final permit decision has been issued, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board (EAB) to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by the NPDES regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

Further information regarding the appeal of NPDES permits may be found under 40 C.F.R. Section 124.19.

e. Stays of Contested Permit Conditions

- (1) If an appeal for review of an NPDES permit decision is timely filed, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. Uncontested permit conditions shall be stayed only until the date specified in paragraph (2) of this section below. If the permit involves a new source, new discharger, or a recommencing discharger, the applicant shall be without a permit for the proposed new source or discharger pending final agency action.
- (2) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. The Regional Administrator shall identify the stayed provisions of permits for existing facilities. All other provisions of the permit for the existing facility, become fully effective and enforceable 30 days after the date of the notification.

- (3) The Regional Administrator shall, as soon as possible after receiving notification from the EAB of the filing of a petition for review, notify the EAB, the applicant, and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit as of the date specified in paragraph (2) of this section. For NPDES permits, the notice shall comply with the requirements of 40 C.F.R. Section 124.60(b).

Any facility holding an existing NPDES permit must, to the extent conditions of any new permit are stayed under this section, comply with the conditions of the existing permit which correspond to the stayed conditions, unless compliance with the existing conditions would be technologically incompatible with compliance with other conditions of the new permit which have not been stayed.

Further information regarding the effectiveness of the ~~NPDES~~ permits may be found under 40 C.F.R. Sections 124.16 and 124.60.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

DATE: NOV 30 2005

AMENDMENT TO THE FACT SHEET AT THE TIME OF FINAL PERMIT REISSUANCE

APPLICATION NO: SC0000353

NAME OF APPLICANT: Milliken and Company - Abbeville Facility

1. Changes to Permit from Draft Permit to Final Permit Stage:

- The draft permit required quarterly monitoring of total recoverable mercury due to the lack of data based on sufficiently sensitive test methods provided in the permit application. Subsequent data submitted by the facility in September 2, 2005 and October 12, 2005 communications based on Method 1631E showed mercury was present at levels that did not have the reasonable potential (RP) to cause or contribute to exceedances of South Carolina water quality criteria. Based on these data, monitoring requirements for total recoverable mercury are being deleted. The permit has been revised to reflect this change.
- The draft permit required a monitoring frequency of 3/week for effluent apparent and true color. Based on October 12, 2005 comments from the permittee, the monitoring frequency is being changed to 2/week to reduce the facility's reporting burden. The information obtained from 2/week effluent monitoring should be sufficient so that a determination can be made regarding whether the discharge has RP to cause, or contribute to, excursions of South Carolina narrative water quality criteria.
- A specific reopener has been added as Part III.D.5 that allows the facility to request a reduction in conducting macroinvertebrate assessment from one/year if a variance from chronic whole effluent toxicity (WET) and/or total recoverable copper is granted by the South Carolina Department of Health and Environmental Control (DHEC) and approved by EPA as a revision to state water quality standards.

2. Public Comments

The permittee provided timely comments in an October 12, 2005 letter. A summary of each comment and EPA's response is provided below.

Comment #1: Milliken objects to use of the May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation as a basis for the biochemical oxygen demand (BOD) and UOD draft permit limits. Milliken has reviewed the model, and although there are no obvious technical errors to our knowledge, the input values in the model are a compounded series of conservative assumptions that are overprotective. The conservative assumptions include using 7Q10 low-flow conditions as stream flows, minimum effluent dissolved oxygen (DO) limits as effluent DO initial conditions, and monthly average maximum limits for several parameter's initial conditions. Milliken requests that the requirements derived from the May 18, 2005 DHEC ammonia and UOD evaluation be removed or modify them based on a more realistic, verified, and calibrated model.

Response: The use of conservative assumptions in the UOD evaluation for this effluent-dominated system is supported by South Carolina Rule 61-68.E.5 (June 25, 2004):

"All ground waters and surface waters of the State *shall at all times* [emphasis added], regardless of flow, be free from

- c. Sewage, industrial, or other waste which produce taste or odor or change the existing color or physical, chemical, or biological conditions in the receiving waters...to such a degree as to create a nuisance, or interfere with classified water uses...or existing water uses."

Blue Hill Creek is currently classified as freshwaters, suitable for primary and secondary contact recreation, fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora, among other uses.

The use of conservative assumptions and model inputs in the UOD evaluation for this effluent-dominated system is also consistent with the October 30, 1991 EPA/South Carolina wasteload allocation (WLA)/ total maximum daily load (TMDL) agreement and with both EPA and State historical and accepted modeling practice. Where site-specific data are lacking, the use of conservative assumptions is necessary to develop permit limits that derive from and comply with State water quality standards (40 C.F.R. 122.44(d)(1)(vii)(A)). Milliken has not provided any alternate calibrated/verified modeling or site-specific field study analyses to support different model inputs or permit limits.

Regarding the conservative assumption of 7Q10 flow in the model, its use to maintain and protect aquatic life numeric criteria such as dissolved oxygen (DO) and un-ionized ammonia is mandated by South Carolina Rule 61.68.C.4.a.1 (June 25, 2004). Use of 7Q10 flow is consistent with the October 1991 EPA/South Carolina WLA/TMLD agreement cited above (page 4).

Regarding the conservative assumption of minimum effluent DO levels in the UOD evaluation, EPA confirmed with South Carolina that changing the model effluent DO level from 6.0 to 7.0 mg/l results in very little change in the instream DO sag, indicating the model is insensitive to changes in effluent DO in that range. Use of minimum permit effluent DO limits) is consistent with the October 1991 EPA/South Carolina WLA/TMLD agreement cited above (page 9).

Regarding the conservative assumption of use of monthly average maximum values as various model inputs, this is consistent with the October 1991 EPA/South Carolina WLA/TMDL agreement cited above (pages 9 and 10) and with both EPA and state historical and accepted modeling practice.

EPA notes that similar conservative assumptions using 7Q10, minimum effluent DO levels, and monthly average maximum inputs were used in the uncalibrated/unverified model that was used to develop the limits of the previous 1996 permit for this facility. Milliken did not object to the permit limits based on that model. That model was updated in 1997 to account for site-specific temperature data and increases in effluent flow. The updated 1997 model for this effluent-dominated system was found to be sensitive to changes in effluent flow – as effluent flow increases, the allowed amount of oxygen-demanding ammonia and five-day biochemical oxygen demand (BOD₅) pollutants also increased. This is an expected result. Due to less production at the facility since that time, the most recent 2005 modeled effluent flows are significantly reduced from the values used in the 1997 analysis. As expected, the result is less assimilative capacity, which results in more stringent limits for oxygen demanding substances such as BOD₅. Milliken has not objected to the effluent flows used in the 2005 model.

Comment #2: Because no acute toxicity testing information exists and since it is not known whether the plant can meet the proposed acute WET limits, it is requested that at least one year of monitoring be allowed to determine if the effluent has the reasonable potential (RP) for exceedance of an acute toxicity water quality criterion. Subsequent to the monitoring period, it is requested that a schedule of compliance be included to allow the facility to take appropriate actions, if necessary, to comply with any proposed limits before they go into effect.

Response: As cited in the fact sheet, EPA determined that RP exists for acute WET and that appropriate acute WET limits were required based on: 1) guidance in the March 1991 "Technical Support Document for Water-Quality Based Toxics Control" (TSD) where effluent monitoring data do not exist; and 2) the factors and requirements of 40 Code of Federal Regulations (C.F.R.) §122.44(d)(1)(ii). Milliken's comments do not refute the stated fact sheet bases for EPA's determination that RP exists for acute WET. A July 1, 2005 preliminary draft permit that first contained acute WET limits was transmitted to Milliken for review. Since that time, Milliken has not provided any acute WET test results that would support a determination of no RP. Also, the granting of a compliance schedule is discretionary. Milliken has not demonstrated an inability or the need to comply with the draft acute WET limit. Based on the above, EPA cannot grant Milliken's requests for a period of monitoring followed by a compliance schedule.

Comment #3: Milliken objects to use of the WET tests proposed in draft permit Parts I and IV as a compliance tool based on the results of a single test. The short topics below are intended to identify and explain briefly a specific problem or issue that makes the currently proposed WET-based limits undesirable. Milliken reserves the right to make available to EPA related comments and additional data and information in form of regulatory guidance documents, scientific literature, legal precedent, etc. to supplement and support the topics below.

Response: Although Milliken's comments refer to "WET tests" in the general sense, based on the number of specific references to the chronic WET test in the topics listed by Milliken, EPA interprets the above comment to apply to chronic WET tests.

EPA's chronic WET tests used in Milliken's draft permit were first promulgated as 40 C.F.R. Part 136 methods in October 1995. Based on litigation and a subsequent settlement, EPA ratified these methods in November 2002. Based on an appeal of that determination, the promulgation and use of these methods as 40 C.F.R. Part 136 methods for National Pollutant Discharge Elimination System (NPDES) compliance were upheld by the District of Columbia U.S. Court of Appeals (DC Circuit) in a December 10, 2004 decision.

The Clean Water Act (CWA) is a strict liability statute that provides that any person who violates the statute, or any federal or state permit condition or limitation implementing the Act, is subject to a penalty assessed "per day for each violation." See CWA Section 309. Requiring compliance with a single chronic WET test result is consistent with the August 14, 1995 EPA memorandum "National Policy Regarding Whole Effluent Toxicity Enforcement." EPA has enforcement discretion regarding how to react to a single violation of a chronic WET permit limit. EPA notes that Milliken's draft chronic WET permit limit is expressed as a monthly average, consistent with how South Carolina expresses both chemical-specific and WET limits in its NPDES permits.

Also, South Carolina's narrative criterion for WET is found at State Rule 61-68.E.5.d:

All ground waters and surface waters of the State shall *at all times* [emphasis added], regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life. (June 25, 2004)

Notwithstanding the fact that Milliken did not submit the related comments, additional data, and information cited above with its October 12, 2005 comments, EPA will respond to the assertions below to the fullest extent possible. EPA is interpreting the assertions below to apply to chronic WET tests only.

Comment #3A: The test used by the Agency has not been scientifically validated for use as an indicator of chronic toxicity by EPA or DHEC.

Response: EPA disagrees with this assertion. As stated in EPA's March 1991 TSD (pg. 7-11), October 16, 1995 response to comments on the initial promulgation of the chronic WET methods (60 Federal Register No. 199, pg. 53538), and November 19, 2002 response to comments on the affirmation of the chronic WET methods (67 Federal Register No. 223, pg. 69965), multiple freshwater and marine site studies have been conducted to determine the validity of WET tests to predict receiving water impacts. The results show a clear relationship between laboratory WET data and adverse instream effects on aquatic life. This issue was also raised in the December 2004 DC Circuit decision cited in the response to Comment #3 above; EPA's rationale regarding the representativeness of the WET test methods was supported by the Court. (pg. 12)

Also, the proceedings of the September 1995 Pellston Workshop, a gathering of academic, industry and government experts on WET, stated:

"WET testing is an effective tool for predicting impact in effluent-dominated, lotic receiving systems. Additional laboratory-to-field validation efforts for these types of ecosystems are not essential for continued use of WET testing as a component of the NPDES permits program." (Whole Effluent Toxicity Testing: An Evaluation of Methods and Prediction of Receiving System Impacts, pg. 338)

Milliken's discharge to Blue Hill Creek is an example of an effluent-dominated, lotic receiving water.

Section E.14.c.10 of the June 25, 2004 South Carolina Water Classifications and Standards Regulation 61-68 (R.61-68) also mandates that WET tests be conducted with Ceriodappia dubia and that 40 C.F.R. Part 136 freshwater chronic test methods must be followed.

In addition, the scientific validity of the relationship between effluent WET tests and instream effect is the basis behind the 40 C.F.R. Part 122.44(d)(1)(v) regulation, which requires WET limits where toxicity results indicate excursions above an applicable State narrative criterion.

Comment #3B: The test does not account for known sources of interference that can and do lead to spurious results, such as pH drift/shock, hardness, ion imbalances, and the growth of algae in the container used to expose the test species to the effluent.

Response: EPA disagrees with this assertion. EPA addressed pH drift/shock, hardness, and other sources of interference in an April 10, 1996 memorandum "Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods." EPA addressed multiple sources of interference, including blocking by known parentage, pH drift, and algal growth in containers, in the November 2002 ratified chronic WET 40 C.F.R. Part 136 methods. EPA's 1995 promulgation and 2002 ratification of the chronic tests were upheld by the DC Circuit in its December 10, 2004 decision.

Also, the proceedings of the September 1995 Pellston Workshop stated:

"The WET exposure methods are technically sound for generating biological effect data and require neither immediate nor substantive technical modifications." (Whole Effluent Toxicity Testing: An Evaluation of Methods and Prediction of Receiving System Impacts, pg. 74)

Regarding ion imbalances, EPA has worked with South Carolina to develop chronic WET test procedures for discharges to low-hardness water. Such procedures have been utilized to determine WET RP for several NPDES permits to date. It is possible that such procedures can be modified to meet other site-specific circumstances without causing extensive delays or investments of resources. However, Milliken has not requested use of these procedures to date.

Comment #3C: The test has an unavoidable, inherent "Type 1" error rate due to having defined confidence limits (i.e., one that is nearly certain to have a "false" positive after a given number of tests).

Response: EPA's response to similar comments for the November 2002 ratification of the chronic WET methods stated:

"EPA disagrees with comments that stated that false positive rates for WET test methods are unacceptably high. EPA's WET Interlaboratory Variability Study conclusively showed that measured false positive rates were below the theoretical rate of 5% estimated for the methods. Measured false positive rates were 3.7%

for the Ceriodaphnia dubia Survival and Reproduction Test method, 4.35% for the Fathead Minnow Larval Survival and Growth Test Method.... While this rate is low (below 5%), false positives do occur. EPA accounts for this possibility in the compliance and enforcement guidance. EPA policy states "EPA does not recommend that the initial response to a single exceedance of a WET limit, causing no known harm, be a formal enforcement action with a civil penalty. EPA policy suggests additional testing is an appropriate initial response to a single WET limit exceedance." (67 Federal Register No. 223, pg. 69968)

EPA has also developed "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136) in 2000. (EPA/821/B-00/004) This provides guidance for assessing the concentration-response relationship in WET test results. Use of this guidance has been very effective in reducing the number of false positives. For example, in EPA's Interlaboratory Variability Study, the false positive rate was reduced from 14% to below 5% for some methods.

On this issue, the DC Circuit concluded in its December 10, 2004 decision that "The real question is whether this variation is excessive, and EPA has demonstrated that it is not. EPA also offered an additional safeguard by designing the tests to give permittees the benefit of the doubt, limiting false positive rates to at most 5%, while allowing false negative rates up to 20%." (pg. 9)

Also, if Milliken's draft WET limits were based on hypothesis testing (i.e., limit expressed as a no observed effect concentration), the Type I error rate allowed to reject the null hypothesis would be specifically set. However, Milliken's draft WET permit limits are expressed as point estimates (i.e., a 25% difference between control and treatment response for the effluent to be considered toxic). Point estimation techniques use regression analyses, where false positive protection is inherently provided by the level of response required for generation of the selected endpoint.

Comment #3D: The test cannot account for unpredictable variations that are known to exist among test results from different testing laboratories.

Response: In the response to comments for the 1995 promulgation (60 Federal Register No. 199, pg. 53535) and 2002 ratification (67 Federal Register No. 223, pg. 69967) of the chronic WET methods, EPA concluded that these tests are no more variable than other chemical methods approved for NPDES compliance use in 40 C.F.R. Part 136. In part, this was based on an EPA Interlaboratory Variability Study involving 56 testing labs and over 700 samples, the results of which were published in 2001.

The DC Circuit held in its December 10, 2004 decision that EPA's "Interlaboratory Study thus complied with the appropriate procedures and established the ratified tests' availability and applicability." (pg. 11)

Comment #3E: A method detection level (MDL) or its functional equivalent for the proposed WET test to quantitatively account for inherent variability has not been developed.

Response: EPA has employed the MDL concept specifically for chemical methods, where a single measurement of a given pollutant by an analytical instrument is conducted. In a WET test, the result is a product of a series of replicated measurements on test organisms exposed to a range of effluent concentrations. WET is defined by its effects on the test organisms and the WET test directly measures these effects. WET is inherently defined by the measurement system and is thus a method-defined analyte. MDL concepts or their functional equivalent do not apply to WET test methods and have not been applied by EPA.

The issue of MDLs to account for method variability was also raised to the DC Circuit. The Court accepted EPA's rationale and held that "EPA, in short, has offered a reasoned and thorough explanation of its decision on this subject. The law requires no more." (pg. 10-11)

Comment #3F: EPA has not established a predictive relationship between chronic WET effluent toxicity lab results and actual in-stream effects. EPA must establish an appropriate frequency, duration, magnitude translator that relates lab endpoints to the true stream condition.

Response: EPA disagrees with this assertion. Regarding the need to establish a predictive relationship, see response to Comment 3A above. EPA does not believe that establishment of a translator is a prerequisite to establishing a permit limit. 40 C.F.R. § 122.45(d)(1) requires that daily maximum and monthly average limits be applied to all dischargers other than publicly owned treatment works. The chronic WET limits in Milliken's draft permit are expressed as monthly averages.

Also, South Carolina's narrative water quality criterion for WET, cited in the response to comment #3 above, does not require a translator. In addition, Section E.14.c.10 of the June 25, 2004 South Carolina Water Classifications and Standards Regulation 61-68 (R.61-68) requires that WET tests be conducted with Ceriodaphnia dubia and that 40 C.F.R. Part 136 freshwater chronic test methods must be followed.

Comment #3G: The test, as implemented by EPA, fails to meet EPA's robustness criteria (e.g., precision, accuracy, reproducibility, representativeness, detection limits, interferences, etc.) as described in EPA's 304H Report to Congress on the Adequacy of Methods.

Response: EPA disagrees with this assertion. EPA provided detailed responses to similar comments during the 1995 promulgation (60 Federal Register No. 199, pg. 53537) and the 2002 ratification (67 Federal Register No. 223, pg. 69964-5). In the Report cited, EPA compared biological to chemical analyses to assess the adequacy of a given biological method. EPA considered the significant attributes to be biological detection limits, precision, and applicability and explained how the WET methods successfully met these attributes and produced results equivalent to those using 40 C.F.R. Part 136-approved chemical methods.

This issue was also raised to the DC Circuit. In its December 10, 2004 decision, the Court concluded that the Report "is not strictly binding upon EPA and any deviation from the Report is not *per se* arbitrary and capricious." (pg. 4). The Court also held that "While EPA concedes that its WET tests do not incorporate every one of these factors, the real question is whether EPA adequately accounted for any departures. We find that it did." (pg. 4-5)

Comment #3H: Ceriodaphnia dubia is not indigenous to South Carolina streams, which calls into question the relevance of this test and the basis upon which test results can be expected to predict actual receiving stream health.

Response: In promulgating and ratifying the chronic WET methods, EPA used standard test species that are sensitive to a broad range of pollutants and that mimic the sensitivity of indigenous species. As discussed in the TSD (pg. 17) and in the response to comments for the 1995 promulgation (60 Federal Register No. 199, pg. 53536), the use of indigenous species is discouraged for a variety of reasons, including the lack of control in the quality of the test organisms, the availability of and cost for such organisms, etc. The use of the chronic WET methods was upheld by the DC Circuit in its December 10, 2004 decision.

Section E.14.c.10 of South Carolina R.61-68 also requires that WET tests be conducted with Ceriodaphnia dubia and that 40 C.F.R. Part 136 freshwater chronic test methods must be followed. This regulation also allows the use of alternate species and test procedures, if certain 40 C.F.R. Part 136 criteria are met. Milliken's current permit, which was issued in 1996, has required chronic monthly testing using Ceriodaphnia dubia. Milliken did not object to that requirement. During this time, Milliken has not proposed the use of alternate test species or procedures.

Regarding the predictability of stream health, see response to comment #3A above.

Comment #3I: EPA has never attempted to create an "impaired" versus "attained" stream standard, thereby making it impossible to determine when, or under what conditions, an effluent discharge can be considered "impairing" a stream for regulatory purposes.

Response: EPA's regulations regarding RP are at 40 C.F.R. § 122.44(d)(1) and are not predicated on a finding of "impaired" versus "attained". The fact sheet provides a detailed rationale for EPA's determination that RP exists to exceed South Carolina's narrative water quality criterion and that chronic WET limits are needed to comply with and maintain that criterion. This includes the finding that 107/108 chronic WET tests have demonstrated toxicity. Milliken has not provided a rebuttal to this determination.

Comment #3J: The South Carolina lab certification program is flawed. When laboratory performance is monitored through use of Quality Assurance "check" samples, the statistical standards for acceptable lab performance are significantly less stringent than the permit compliance standards to which permittees are held when submitting actual effluent samples to those same labs for compliance testing. The permittee is unaware of any documented corrective action measures or objective de-certification guidelines for poor lab performance.

Response: EPA does not require that any State conduct a lab certification program and has no authority to make changes in any such State program. Major and selected minor permittees under the National Pollutant Discharge Elimination System (NPDES) program participate in EPA's Office of Enforcement Compliance and Assistance Discharge Monitoring Report-Quality Assurance (DMR-QA) study program. The DMR-QA study periodically evaluates the analytical and reporting ability of the laboratories that routinely perform inorganic chemistry and WET self-monitoring analyses required by NPDES permits. The DMR-QA study sample acceptance limits are statistically based across a number of laboratories and those limits and results are independent of the requirements in NPDES permits. 40 C.F.R. § 122.41(j)(4) requires that all NPDES monitoring results be conducted according to methods approved under 40 C.F.R Part 136. As cited in the response to Comment #3 above, the chronic WET test methods have been adopted for use as Part 136 methods and affirmed by the DC Circuit's December 10, 2004 decision. Through its oversight function for authorized NPDES programs, EPA has, and will continue to, conduct audits for laboratory WET performance in South Carolina.

Comment #3K: The inherent inaccuracy and lack of precision associated with WET testing and particularly with chronic reproductive toxicity testing is in clear conflict with the Discharge Monitoring Report (DMR) certification requirement that all reported data are "...true, accurate, and complete."

Response: EPA disagrees with this assertion and believes the response below applies to both acute and chronic WET tests. The DMR certification issue has been previously addressed in a March 3, 2000 EPA memorandum "Certification of 'Accuracy' of Information Submissions of Test Results Measuring Whole Effluent Toxicity":

"When a person certifies that the submission of WET testing information is "accurate" to the best of their knowledge and belief, the person certifies that the results obtained using the WET testing procedures are faithfully and truthfully transcribed on the information submission, and that the results were, in fact, results that were obtained using the specified testing procedures."

In its December 10, 2004 decision, the DC Circuit held that "EPA admits that accuracy, in its technical rather than colloquial sense, is inapplicable to WET testing, but it does not follow that the tests are therefore 'inaccurate'." (pg. 5)

Also, Milliken's current permit, issued in 1996, has required chronic monthly WET testing using Ceriodaphnia dubia. Milliken did not object to that requirement and has submitted monthly DMRs to DHEC for these test results.

Comment #3L: By its nature, the chronic test inherently lacks both the accuracy and the precision to serve as a permit limit, particularly one based on the results of a single test that ignores statistical error bands.

Response: EPA disagrees with this assertion. Regarding the accuracy of the chronic WET test to serve as a permit limit, see responses to Comments #3G and #3K above. Regarding the precision of the chronic WET test to serve as a permit limit, see response to Comments #3D and #3G above. Also, the DC Circuit held that "EPA...finds that the data support the conclusion that these WET test methods exhibit a degree of precision compatible with numerous chemical-specific tests already in use. We credit EPA's conclusions on this point." (pg. 7) EPA notes that Milliken's chronic WET permit limit is a monthly average and is expressed as a point estimate derived by linear interpolation. No statistical error bands are involved in the derivation of such a point estimate result.

Comment #3M: The test cannot reliably be used to confirm the absence of toxicity - which is precisely the purpose to which EPA has put this test in this permit. When required to identify water containing no toxicants (e.g., a laboratory method blank), the test is incapable of producing results that are both consistent and correct.

Response: EPA disagrees with this assertion. EPA responded to a similar comment in its 2002 ratification of the chronic WET methods regarding the reference toxicant sample type distributed for the Ceriodaphnia chronic test in the EPA Interlaboratory Variability Study. (67 Federal Register No. 199, pg. 69966-7) The comment refers to the fact that the spiking level selected for the reference toxicant was not sufficient to produce the

expected level of response/effect. This does not indicate a problem with the underlying test method. EPA concluded that "the WET Interlaboratory Variability Study accurately estimated the precision of WET test methods, and that this precision is adequate for regulatory use of the WET methods." (pg. 69967)

The reliability of EPA's chronic WET methods was upheld by the December 10, 2004 DC Circuit decision. See DC Circuit citations in the responses to Comments #3D and #3L above.

Comment #3N: The test was neither developed nor recommended for use as an enforcement tool in connection with a policy in which a single failure is considered a violation of permit limits.

Response: EPA disagrees with this assertion. See response to Comment #3 above. EPA again notes that Milliken's draft chronic WET permit limit is expressed as a monthly average.

Comment #3O: There are no current federal or state requirements that mandate the use of numeric criteria for toxicity.

Response: EPA agrees that States are not required to adopt numeric water quality criteria for toxicity. However, there are several federal regulations that provide authority for imposing numeric WET permit limits to implement narrative water quality criteria for toxicity. These include:

- 40 C.F.R. § 122.43(a) [regulation pertaining to establishing permit conditions];
- 40 C.F.R. §§ 122.44(d)(1) & (d)(1)(i), (ii), (v), (vi), (vii)(A), and (d)(5) [reasonable potential regulations]; and
- 40 C.F.R. §§ 123.25(a), (a)(14), and (a)(15) [requirements for state programs].

These regulations are based on several CWA provisions, including: §§ 301(b)(1)(C), 402(a)(1) and (2), 402(b)(1)(A), and (c)(1). In addition, the following are examples of case law that support the authority of NPDES permitting agencies to impose numeric limits to implement narrative water quality criteria:

American Paper Institute v. EPA, 996 F.2d 346, 350, 36 ERC 2025 (D.C. Cir. 1993) (EPA has authority to interpret narrative standards to develop numeric limits).

Champion Int'l Corp. v. EPA, 850 F.2d 182, 186-89, 28 ERC 1013 (4th Cir. 1988) (NPDES permits must include any requirements to meet water quality standards, including numeric color limits, to meet a narrative water quality criterion).

In re Champion Int'l Corp., NPDES Docket No. NC0000272 (ALJ Yost Feb. 12, 1992) (where the state's only water quality standard for a particular pollutant is articulated in a narrative fashion, the permit writer is obligated to translate such standard into numerical limit on a case-by-case basis)

Comment #3P: There is no scientific support for assuming that a single chronic WET test failure implies stream impairment and no scientific support for assuming that multiple chronic WET test failures necessarily imply stream impairment.

Response: EPA disagrees with this assertion. See responses to Comments #3 and #3A above.

Comment #3Q: There is no association between a single failure (or a multiple failure) of the WET test and the narrative standard under South Carolina Regulation 61-68.

Response: EPA disagrees with this assertion. See responses to Comments #3 and #3A above.

Comment #3R: The test presumes that water quality is the limiting factor in determining receiving stream health, and does not account for habitat limitations. High water quality in an otherwise limited biological habitat will neither produce nor support a flourishing ecosystem.

Response: Blue Hill Creek is currently classified as freshwaters, suitable for primary and secondary contact recreation, fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora, among other uses. The fishable/swimmable classification applies whether the stream is habitat- or water-quality limited and until a use attainability analysis is conducted and/or that classification is revised. Based on this classification, South Carolina's narrative criterion at R. 61-68.E.5.c (cited in the response to Comment #3 above) applies, whether the stream is habitat- or water-quality limited. EPA's regulations at 40 C.F.R. § 122.44(d)(1)(v) thus is applicable, requiring that any permit must contain WET effluent limits where it has been determined that the discharge has RP to cause, or contributes to, an excursion of an applicable State's narrative water quality criterion. EPA has made such a determination for this discharge. In its comments, Milliken has not challenged or objected to EPA's RP determination for this discharge.

Comment #4: Milliken objects to the inclusion of macroinvertebrate assessment requirements in Part III.D of the draft permit. A copy of an April 1997 assessment was previously submitted; a copy of a November 2000 assessment is enclosed. The results of both indicate that the Abbeville discharge has little, if any, discernible impact on the macroinvertebrate community of Blue Hill Creek. There is thus no expected benefit to perform additional studies as required by Part III.D. Milliken requests that the permit be modified to eliminate the required assessments. If the assessments must be kept, Milliken strongly requests that the permit allow the assessments to end after a reasonable number of additional satisfactory results.

Response: EPA disagrees with Milliken's assertion that the two assessments cited above indicate little discernible impact on Blue Hill Creek and therefore, there is no benefit to performing additional studies. Regarding the April 1997 effort conducted by a consultant for Milliken, an assessment conducted in the spring is most likely to find higher levels of diversity and organisms present, as well as likely higher background stream flows. A finding of no impact during this period does not automatically lead to the conclusion that there is also no impact during lowflow critical conditions in late summer or the fall.

EPA also disagrees with the consultant's conclusion that little, if any, discernible impact is due to the Milliken discharge. For example, the number of taxa from the insect orders Ephemeroptera, Plecoptera, and Trichoptera (EPT) were sampled at one upstream and two stations downstream of the Milliken discharge and a resulting EPT Index was calculated. The April 1997 study states "These three insect orders are considered to be intolerant of adverse changes in water quality, especially temperature and dissolved oxygen, and therefore, a reduction in these taxa is indicative of reduced water quality." (pg. 6) [emphasis added]. The EPT Index for the upstream station was 6; the EPT Index for both downstream stations was 3, a 50% reduction indicative of impact due to the discharge. Also, due to the length of time since this study was conducted, EPA is not convinced these data represent current discharge conditions.

Regarding the November 2000 effort cited above conducted by DHEC, that study concluded "However, based on the decrease in EPT [similar to the 1997 effort cited above] and the decrease in Taxa Richness as well as the general overall decrease in sensitive taxa, it appeared that the macroinvertebrate community at station 4 [downstream of the Milliken discharge] was showing slight additional adverse impact when compared to Station 3 [upstream of the Milliken discharge]." (pg. 2) Also, due to the length of time since this study was conducted, EPA is not convinced these data represent current discharge conditions.

EPA believes both efforts cited above demonstrate some discernible impact which may due to Milliken's discharge and reinforce the need for assessment of current discharge impact on biological conditions in Blue Hill Creek under the authorities cited in the permit fact sheet. As stated in the fact sheet, such studies will assess compliance with various South Carolina water quality standards and rules and document water quality

trends. The draft permit requires that such assessments be conducted once/year during July, August, or September.

It is EPA's understanding that Milliken is considering requesting a variance from both chronic WET and copper limits in the draft permit. Based on Milliken's comment, EPA will add a specific reopener to Part III.D so that a reduction in macroinvertebrate assessments from once/year can be requested if a variance for chronic WET and/or total recoverable copper is granted by DHEC and approved by EPA.

Comment #5: Milliken strongly objects to the measurement frequency of three samples per week for effluent color. This will impose a significant burden on our water quality lab due to the nature of the analysis. Milliken does not believe there is sufficient daily variation in effluent color to justify sampling three times/week. Milliken requests that the effluent color sampling frequency be reduced to once/week. Milliken has many years of effluent color data and would share the data if it would help reduce the proposed sampling frequency.

Response: Milliken's February 3, 2005 permit application reports a daily maximum color value of 439 standard units and a long-term average of 94.7 standard units, based on 319 values. These data suggest some level of effluent variability. Based on these data and the batch nature of the Abbeville facility's process, EPA believes that sampling more than once/week is needed to adequately assess the variability of the current discharge. In response to the comment, EPA will change the effluent monitoring frequency to twice/week. This will reduce Milliken's laboratory burden, yet provide sufficient data upon which a determination can be made whether the discharge has RP to cause, or contribute to, excursions of South Carolina narrative water quality criteria.

Comment #6: Milliken documents its objections to the potential use of color data collected under this permit in developing future numeric color limits.

Response: EPA notes Milliken's objection. As stated in the fact sheet, due to the high levels of color reported in the permit application and the effluent-dominated nature of Blue Hill Creek due to Milliken's discharge, EPA has the authority and obligation under the CWA to require color monitoring data to assess whether there is RP for the facility to cause, or contribute to, excursions of South Carolina's narrative criterion. The permit includes a reopener clause if the data collected show such RP. If the permit is modified to include color limits, Milliken will have the opportunity to provide comment on and appeal those provisions.

Comment #7: Milliken objects to the inclusion of mercury limits in the draft permit. Based on the data provided to EPA that the permittee believes demonstrate no RP, Milliken requests that the mercury limits be removed.

Response: The draft permit contained only monitoring requirements for total recoverable mercury. Based on an evaluation of the data submitted by the permittee, EPA has determined that mercury is not present at levels that have RP to cause or contribute to exceedances of South Carolina water quality criteria. The permit has thus been revised to delete monitoring requirements for total recoverable mercury.

Comment #8: Milliken appreciates EPA's mechanism for treating submitted production information as confidential business information (CBI) in Part I-10. However, Milliken strongly prefers not to submit CBI to parties outside the company unless it is absolutely necessary for compliance. Milliken requests that the permit be revised to require the facility to keep production information on-site for an appropriate period and to make them available for EPA's inspection upon request.

Response: Because production values form the basis for the applicable effluent guideline for this facility, as well as the tiered limits in the draft permit, EPA cannot grant Milliken's request to keep production information on-site. In order to fully assess ongoing compliance with the permit, production information must be submitted to EPA as part of the DMR. This determination is authorized by and consistent with 40 C.F.R. § 122.41(h) and Part II.A.13 of the permit, which state "The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to....determine compliance with this permit." When submitted to EPA for compliance purposes, production information can be provided as a separate attachment to the DMR and claimed as CBI. EPA will use its existing procedures to separately store and evaluate any information claimed as CBI.

3. State CWA §401 Certification

State certification of the draft permit was requested on September 15, 2005. In a November 8, 2005 letter, the State requested an extension to provide certification. A State Certification dated November 17, 2005 was received by EPA and has been incorporated into the permit via attachment.

**401 Certification for NPDES Permit SC0000353
Milliken/Abbeville Plant**

- **DEFINITIONS:** In addition to the definitions in Part II Section E, the "Department" or "DHEC" shall refer to the South Carolina Department of Health and Environmental Control.
- **INSPECTION AND ENTRY -** In addition to Part II Section C.7, allow inspections and entry by DHEC staff. Also, replace Part II Section C.7.d as follows to include the SC Pollution Control Act:
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and Pollution Control Act, any substances or parameters at any location.
- **PROPER OPERATION AND MAINTENANCE -** In addition to Part II Section B.1
 - a. The permittee shall provide for the performance of daily treatment plant inspections by a certified operator of the appropriate grade. The inspection shall include, but is not limited to, areas which require a visual observation to determine efficient operations and for which immediate corrective measures can be taken using the O&M manual as a guide. All inspections shall be recorded and shall include the date, time and name of the person making the inspection, corrective measures taken, and routine equipment maintenance, repair, or replacement performed. The permittee shall maintain all records of inspections at the permitted facility as required by this permit. Records shall be made available for on-site review during normal working hours.
 - b. The name and grade of the operator of record shall be submitted to DHEC/Bureau of Water/Water Enforcement Division prior to placing the facility into operation. A roster of operators associated with the facility's operation and their certification grades shall also be submitted with the name of the "operator-in-charge". Any changes in operator or operators shall be submitted to the Department as they occur.
 - c. The wastewater treatment plant shall be assigned a classification of Group III-B. This classification corresponds to an operator with a Grade of B-B. In accordance with Regulation 61-9.122.41(e)(3)((ii)(B), the permittee has submitted a staffing plan justifying a lower grade operator under certain conditions as follows: The Grade B-B operator or higher shall be responsible during weekday operation, with the exception of holidays. A Grade D-B operator or higher shall be responsible on weekends and holidays.
- **TWENTY-FOUR HOUR REPORTING –** In addition to Part II Section D.8:
Any information shall be provided orally to local DHEC office within 24 hours from the time the permittee becomes aware of the circumstances. During normal working hours call:

County	EQC Region	Phone No.
Anderson, Oconee	Region 1- Anderson EQC Office	864-260-5569
Abbeville, Edgefield, Greenwood, Laurens, McCormick, Saluda	Region 1 – Greenwood EQC Office	864-223-0333
Greenville, Pickens	Region 2 – Greenville EQC Office	864-241-1090
Cherokee, Spartanburg,	Region 2 – Spartanburg EQC Office	864-596-3800

Union		
Fairfield, Lexington, Newberry, Richland	Region 3 – Columbia EQC Office	803-896-0620
Chester, Lancaster, York	Region 3 – Lancaster EQC Office	803-285-7461
Chesterfield, Darlington, Dillon, Florence, Marion, Marlboro	Region 4 – Florence EQC Office	843-661-4825
Clarendon, Kershaw, Lee, Sumter	Region 4 – Sumter EQC Office	803-778-6548
Aiken, Allendale, Bamberg, Barnwell, Calhoun, Orangeburg	Region 5 – Aiken EQC Office	803-641-7670
Georgetown, Horry, Williamsburg	Region 6 – Myrtle Beach EQC Office	843-238-4378
Berkeley, Charleston, Dorchester	Region 7 – Charleston EQC Office	843-740-1590
Beaufort, Colleton, Hampton, Jasper	Region 8 – Beaufort EQC Office	843-846-1030

After-hour reporting should be made to the 24-Hour Emergency Response telephone number 803-253-6488 or 1-888-481-0125 outside of the Columbia area. A written submission shall also be provided to the Department within 5 days of the time the permittee becomes aware of the circumstances. This notification should be addressed to:

S.C. Department of Health and Environmental Control
 Bureau of Water/Water Enforcement Division
 Water Pollution Enforcement Section
 2600 Bull Street
 Columbia, South Carolina 29201

➤ **ODOR CONTROL REQUIREMENTS** – In addition to Part III of the permit:

The permittee shall use best management practices normally associated with the proper operation and maintenance of a sludge wastewater treatment site, any sludge storage or lagoon areas, transportation of sludges, and all other related activities to ensure that an undesirable level of odor does not exist.

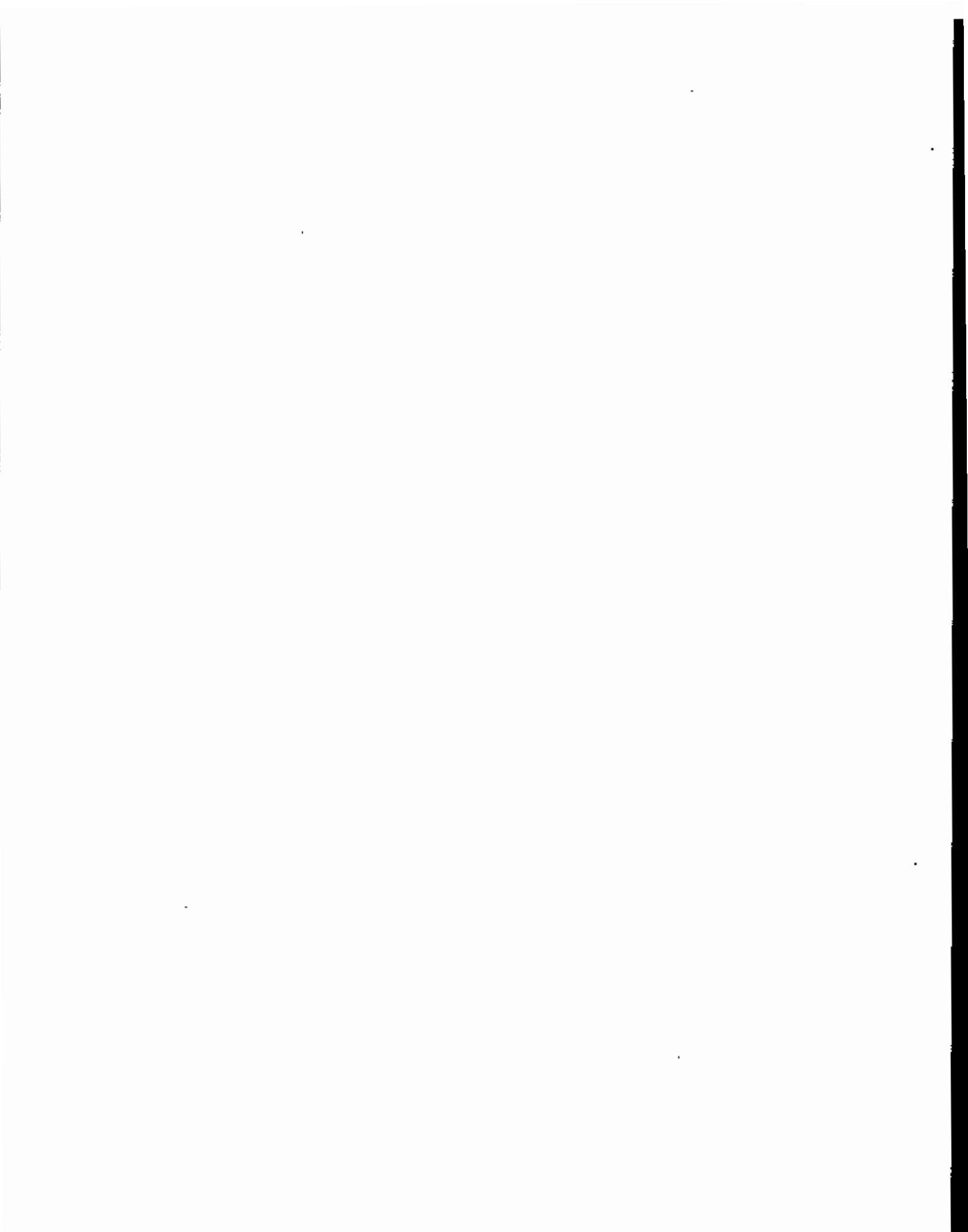
- a. The permittee shall prepare an odor abatement plan for the industrial sludge treatment sites, any sludge storage or lagoon areas, and land application or land disposal sites. The permittee shall prepare the plan in accordance with R.61-9.504.50 (Odor Control Requirements). Permittees that land apply sludge must complete the plan by June 26, 2004. For permittees with other sludge related activities, the plan must be completed by December 26, 2004. The plan must include the following:
 - (1) Operation and maintenance practices which are used to eliminate or minimize undesirable odor levels in the form of best management practices for odor control;
 - (2) Use of treatment processes for reduction of undesirable odors;
 - (3) Use of setbacks;
 - (4) Contingency plans and methods to address odor problems for the different type of disposal/application methods used.
- b. The Department may review the odor abatement plan for compliance with R.61-9.504.50. The Department may require changes to the plan as appropriate.
- c. The permittee shall not cause, allow, or permit emission into the ambient air of

any substance or combinations of substances in quantities that an undesirable level of odor is determined to result unless preventative measures of the type set out below are taken to abate or control the emission to the satisfaction of the Department. Should an odor problem come to the attention of the Department through field surveillance or specific complaints, the Department may determine, in accordance with section 48-1-120 of the Pollution Control Act, if the odor is at an undesirable level by considering the character and degree of injury or interference to:

- (1) The health or welfare of the people;
 - (2) Plant, animal, freshwater aquatic, or marine life;
 - (3) Property; or
 - (4) Enjoyment of life or use of affected property.
- d. Should the Department determine that an undesirable level of odor exists, the Department may require:
- (1) The permittee to submit a corrective action plan to address the odor problem;
 - (2) Remediation of the undesirable level of odor within a reasonable timeframe, and
 - (3) In an order, specific methods to address the problem.
- e. If the permittee fails to control or abate the odor problems addressed in this section within the specified timeframe, the Department may revoke disposal/application activities associated with the site or the specific aspect of the sludge management program.
- f. The odor abatement plan shall be updated and maintained as necessary throughout the life of the permit.

➤ **SLUDGE DISPOSAL REQUIREMENTS** – In addition to Part III of the permit:
By letter dated April 23, 2003 to Ms. Page Myers of the Milliken & Company/Abbeville Plant from Butch Swygert of the Bureau of water, SCDHEC, the permittee has permission to dispose of its wastewater sludge at the Cunningham Brick Company located in Thomasville, North Carolina. Per memo dated April 16, 2003 from R. W. Cunningham of Cunningham Brick Company, Cunningham Brick Company agreed to accept the wastewater sludge from the Milliken & Company's Abbeville Plant. If the facility wishes to change sludge disposal locations, the Permittee shall apply in writing to the DHEC/Bureau of Water requesting written approval of a change in sludge disposal locations. A letter of acceptance from the new location shall be included with the request.

➤ **SCHEDULE OF COMPLIANCE** – As it relates to Part LB of the permit:
If the permittee opts to construct wastewater treatment facilities or modification to existing facilities to meet the schedule of compliance in the permit, a construction permit and operational approval from the Department may be needed before the facilities are built and placed into operation. SC Regulation 61-67 governs the construction of wastewater treatment facilities. If a permit is needed, application for a construction permit must be made in a timely manner to assure that the Department has adequate review time prior to the implementation of any final permit limits that the construction relates to.





August 4, 2005

Mr. Marshall Hyatt
Environmental Scientist
NPDES and Biosolids Permits Section
Permits, Grants, and Technical Assistance Branch
Water Management Division
US EPA, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960

**RE: Comments on Draft Permit
Milliken & Company / Abbeville Plant
NPDES Permit Number SC0000353
Abbeville County, South Carolina**

Dear Mr. Hyatt:

Milliken & Company ("Milliken") has received and reviewed the draft NPDES Permit for the Abbeville Plant dated July 1, 2005. We have the following comments and requests regarding the draft:

1. As discussed in the meeting between Milliken and EPA Region 4 ("Agency") on July 28, 2005, we intend to pursue one or more regulatory options for achieving compliance with the potential permit limits for Copper and Toxicity. At this time, because it appears that a variance may be appropriate and necessary, we are currently investigating the variance request process. We believe at least one meeting with the SC DHEC will be a necessary part of this investigation and respectfully request that release of a subsequent draft of this permit to public notice be delayed until our investigation of the process and discussions with the State are complete. Milliken expects these activities may take several weeks, and will, of course, notify the Agency as soon as a final decision as been made.
2. A Biochemical Oxygen Demand (BOD) concentration limit of 50 mg/l is included in the draft permit in addition to average and maximum mass limits. Milliken respectfully asserts that, based on historical data, there is no reasonable potential for the concentration limit. A chart and table of BOD concentrations since 1999, attached, show that all BOD measurements during this time period were well below the 50 mg/l value. Milliken requests that this limit be removed from the permit. If any further information is necessary, please contact Lee Slusher at (864) 503-1756.



3. A February, 2002 daily maximum value of 11.6 mg/l of ammonia-nitrogen is used by the Agency in its reasonable potential calculation for the ammonia-nitrogen parameter. Using this value, the calculation predicts that the Abbeville plant has reasonable potential to exceed the ammonia chronic value. Based on a review of the ammonia-nitrogen results, Milliken believes that this test result and previous tests results are no longer representative of the current operations at the Abbeville plant and are no longer appropriate for use in the reasonable potential determination. The attached ammonia-nitrogen chart clearly shows that the spikes that included the 11.6 mg/l maximum value have not occurred in over three years, indicating a substantial change in the Abbeville plant operation. Accordingly, Milliken requests that the Agency re-evaluate reasonable potential based on the highest daily maximum value for ammonia-nitrogen for the most recent three years. (This value was 1.144 mg/l, in February, 2005.)
4. Part I.A.16 of the draft permit states that BOD₅ and Total Ammonia should be expressed in pounds per day when used in the formula given to calculate Ultimate Oxygen Demand (UOD). However, this formula appears to include factors for converting concentration, in mg/l, to pounds per day ("8.34" and "monthly average flow (MGD)"). As a result, the BOD₅ and Total Ammonia must be expressed in mg/L or the factors must be removed to provide correct results. Milliken respectfully requests that the Agency modify Part I.A.16 to include the appropriate formula and units.
5. The draft permit contains monitoring and reporting requirements for chromium III and chromium VI. However, neither chromium III nor chromium VI is used in the processes at the Abbeville Plant, and as a result, no chromium is expected in the effluent. Additionally, no chromium has been detected in any of the 644 chromium samples taken the effluent in the past eleven years. The <0.5 mg/l value used by the Agency to determine reasonable potential is from a time period in which total chromium samples were being analyzed on older lab equipment and detection limits were elevated due to the limitations of the technology. The current lab apparatus is shared with Milliken's research department, and, as a result, sometimes has elevated detection limits due to equipment condition. In either case, the elevated detection limits are due to limitations of the laboratory analysis alone, and do not indicate an increased likelihood of chromium content in the sample. Since chromium has not been detected and, based upon process knowledge, is not expected to be present in the effluent, Milliken believes that the monitoring and reporting requirements are inappropriate and will result in unnecessary analysis and sample collection cost. We request that the Agency reconsider the requirements. A table of total chromium results from January, 1999 through July, 2005 is attached for the Agency's review.
6. As discussed in the July 28th meeting, Milliken requests that the Agency remove or reduce the frequency of acute and chronic Ceriodaphnia Dubia toxicity measurements. As discussed in Item #1 of this letter, Milliken is likely to pursue a variance, and we believe that Ceriodaphnia Dubia toxicity testing done during the variance request process will be very expensive and will provide little useful information. The Abbeville effluent has been tested over a hundred times with very consistent results, and we do not expect the results to change without a fundamental change in the effluent or testing conditions. Therefore, additional testing is not expected to yield any information that would justify the expense of frequent testing, and a reduction or elimination of these monitoring requirements is justified.



7. Milliken requests that the Agency reduce the frequency of the Pimephales Promelas toxicity testing in the draft permit during the variance request process. We do not anticipate that the effluent will change significantly during the variance request process, and, as a result, we believe that testing at a frequency of once every two months is excessive and will result in extra expense without any benefit to the Agency or Milliken. For the same reason, we request that the Agency include language in the draft permit allowing the Pimephales Promelas toxicity testing to end if no there are no failures after a reasonable number of tests.
8. Milliken believes Whole Effluent Toxicity ("WET") tests, in theory, can be useful screening tools when used, for example, on a "monitor and report" basis to indicate the possible recurring presence of toxicants in wastewater. However, Milliken believes the WET tests proposed by the Agency in Parts I and IV of the draft permit are unsuited and improper in the role they have been assigned in Abbeville's proposed NPDES Permit – that of a compliance tool based on the results of a single test. The specific points of our objection have been organized below in the form of short topics, rather than a lengthy discourse. These topics are intended only to identify and explain briefly a specific issue or problem that, for Milliken, makes the introduction of the currently proposed WET-based limits at Abbeville Plant undesirable. Milliken hereby reserves the right to make available to the Agency related comments and additional data and information in form of regulatory guidance documents, scientific literature, legal precedent, and the like that supplement and support those topics. Solely for the convenience of the Agency, these topics have been arranged under the general headings below.

Objections to WET Testing as a Scientific Method

- To Milliken's knowledge, the test used by the Agency has not been scientifically validated for use as an indicator of chronic toxicity by the EPA or SC DHEC.
- The test does not account for known sources of interference that can and do lead to spurious results, for example, pH drift/shock, hardness, ion imbalances, and the growth of algae in the container used to expose the test species to the effluent.
- The test has an unavoidable, inherent "Type 1" error rate due to having defined confidence limits (i.e., one is nearly certain to have a "false" positive after a given number of tests).
- The test cannot account for unpredictable variations that are known to exist among test results from different testing laboratories.
- A method detection level (MDL) or its functional equivalent for the proposed WET test (to quantitatively account for inherent variability) has not been developed.

Objections to WET Testing as Used by the Agency as a Regulatory Instrument

- The Agency has not established a predictive relationship between laboratory results and actual in-stream effects. The Agency must establish an appropriate frequency, duration, magnitude translator that relates laboratory endpoints to the true stream condition.



- The test, as implemented by the Agency, fails to meet EPA's robustness criteria (e.g., precision, accuracy, reproducibility, representativeness, detection limits, interferences, etc.) as described in EPA's 304H Report to Congress on the Adequacy of Methods.
- *Ceriodaphnia Dubia*, one of the indicator species chosen by the Agency from several available alternative species, is not indigenous to South Carolina streams, which calls into question the relevance of this test and the basis upon which test results can be expected to predict actual receiving stream health. Independent of this issue, Milliken believes the Agency has neither determined nor documented the degree to which effluent chronic reproductive toxicity test results can be shown to be a measure or predictor of receiving stream health.
- The Agency has never attempted to create an "impaired" versus "attained" stream standard, thereby making it impossible to determine when, or under what conditions, an effluent discharge can be considered "impairing" a stream for regulatory purposes. Even if such standard existed, there is little or no relevant, credible data showing that chronic reproductive toxicity testing is a reliable indicator of stream impairment.
- The SC laboratory certification program, upon which the WET program is dependent, is flawed. When laboratory performance is monitored through the use of Quality Assurance "check" samples, the statistical standards for acceptable laboratory performance are significantly less stringent than the permit compliance standards to which permittees are held when submitting actual effluent samples to those same laboratories for compliance testing. Furthermore, Milliken is unaware of any documented corrective action measures or objective de-certification guidelines for poor laboratory performance.
- The inherent inaccuracy and lack of precision associated with WET testing, and particularly chronic reproductive toxicity testing, is in clear conflict with the DMR certification requirement that all reported data are "...true, accurate, and complete."

Objections to WET Testing as Used by the Agency in an Enforcement Context

- By its nature, the chronic test inherently lacks both the accuracy (inability to measure the absence of toxicity) and the precision (inability to offer consistently repeatable results) to serve as a permit limit, particularly one based on the results of a single test that ignores statistical error bands.
- The test cannot be used reliably to confirm the absence of toxicity – which is precisely the purpose to which the Agency has put this test in this permit. When required to identify water containing no toxicants (e.g., a laboratory method blank), the test is incapable of producing results that are both consistent and correct.
- The test was neither developed nor recommended for use as an enforcement tool in connection with a policy in which a single failure is considered a violation of permit limits.



- There are no current federal or state requirements or regulations that mandate the use of numeric criteria for toxicity.
- The association between WET testing results in general and stream impairment is strained, at best. Milliken believes the association between a single failure of a chronic WET test and stream impairment is so attenuated as to be non-existent. In short: there is no scientific support for assuming that a single chronic WET test failure implies stream impairment, and no scientific support for assuming that multiple chronic WET test failures necessarily imply stream impairment (yet either will result in a permit violation).
- There is no association between a single failure (or a multiple failure) of the WET test and the narrative standard under S.C Regs. 61-68.

Objections to WET Testing as Applied Specifically to Abbeville Plant

- The test presumes that water quality is the limiting factor in determining receiving stream health, and does not account for habitat limitations. High water quality in an otherwise limited biological habitat will neither produce nor support a flourishing ecosystem.
9. Enclosed is a copy of a macroinvertebrate assessment performed on Blue Hill Creek by Shealy Environmental in April of 1997. The results of this assessment indicate that the discharge from the Abbeville plant has little, if any, discernible impact on the macroinvertebrate community of Blue Hill Creek. Since the results of this study show little or no impact, Milliken believes that there is no benefit to performing additional macroinvertebrate studies at a frequency of two per year as required in Part III.D of the draft permit. We request that the Agency review the enclosed macroinvertebrate study and modify the permit to eliminate or reduce the frequency of assessments required. We also request that the permit include language that would allow the assessments to end after a reasonable number of satisfactory results, if they are required.
 10. The draft permit contains monitoring and reporting requirements for effluent, upstream, and downstream temperature. Each location is required to be measured once per week. Milliken does not anticipate that effluent temperature or stream temperature will vary significantly from week to week since both are driven by seasonal variations. For the same reason, we do not anticipate that effluent or stream temperatures during the first year will be significantly different from those in subsequent years, if similar times of the year are compared. Therefore, Milliken & Company requests that the temperature monitoring be required for 12 months only, after which a sufficient amount of information should be available to characterize the temperature effect, if any, of Abbeville's effluent.
 11. The draft permit contains monitoring and reporting requirements for color in the effluent and receiving stream at a frequency of three samples per week. As discussed in the April 28th meeting, this sampling requirement would add a significant burden to the operators and lab analysts involved with the sampling and laboratory analysis due to the frequency and nature of the analysis. (3 locations/day x 3 samplings/week x 2 types of color measurement/sample x 2 pH levels/sample = 36 extra readings per week.) Given that



Milliken does not anticipate a significant amount of variation in the effluent or stream color from day to day, there is no benefit associated with a sampling frequency greater than once per week. Accordingly, Milliken requests that the Agency reduce the sampling frequency for color at all locations to once per week. We also request that the color sampling only be required for six (6) months, after which there should be a sufficient amount of information to characterize the color impact, if any, of Abbeville's effluent.

12. Milliken & Company feels it is appropriate to document its objections in these comments to the potential use of color data collected under this permit in developing future numerical limits for the color by the Agency or SC DHEC. Studies clearly illustrate that many factors affect human perception of color. They further show there is a high degree of subjectivity involved when aesthetic values are based on visual observations, and indicate that a multitude of factors should be considered in establishing any protocol for color impact evaluation. Neither the Agency nor the State of South Carolina has a duly promulgated standard for color, and currently lacks a scientific basis for establishing such a standard.

Color can be defined as the sensory perception of electromagnetic radiation of a particular wavelength incident on the nerves of the eye. Unless it hinders light penetration into the water column, color changes in natural streams caused by wastewater discharges are considered strictly aesthetic considerations, as presently reflected in the applicable South Carolina water regulations [Section E (5) (C), S.C. Code Ann. R-61-68].

Water may appear colored because of the presence of dissolved matter that absorbs incident light ("true" color), or because of the presence of suspended particles that scatter incident light ("apparent" color). True color can only be measured in water from which turbidity and suspended solids have been removed. Apparent color includes color due to dissolved substances and suspended particles. It is "Apparent" color that is often a closer approximation of what people actually perceive and evaluate as aesthetically attractive or unattractive, and would therefore more closely conform to South Carolina's existing narrative regulations on this subject.

Little basic research has been performed on human perception of color in wastewater effluent and its impact on the aesthetic value of a receiving stream. A fundamental problem is an inability to specify color characteristics using definite values that accurately correlate to the color sensations and aesthetic reactions experienced by persons viewing the water.¹

A number of studies have measured perception of water quality to determine the types and relative weightings of different subjective criteria used by members of the public to determine the degree of water pollution. Generally, these studies have shown that a limited number of criteria are used to describe water quality in a natural setting: the presence of fish, algae and water plants, perceived color, odor, and the presence of floating debris. The relative importance of the individual criterion varies, however, according to whether the site is a lake, bay or river.²

¹ See, Rudolphs, W and W. D. Haunton, "Color in Industrial Wastes," 23 Sewage Ind. Wastes 1125 (1951).

² See Moser, G., "Water Quality Perception, a Dynamic Evaluation," Journal of Environmental Psychology, 20-210 (1984); Coughlin, R. E., "The Perception and Valuation of Water Quality: A Review of Research Methods and Findings," Perceiving Environmental Quality" K. H. Craik and E. H. Zube (eds.) (New York 1976); David, E. I., "Public Perception of Water Quality," Water Resources 453-457 (1971); Ditton, R. B. and T. L. Goodale, "Water Quality Perception and Recreational Users of Greenby Lake Michigan," Water Resources 569-570 (1973); Kooyoompan, J. K. and N. L.



One study (Prestrude and Laws, 1988), conducted to determine acceptable levels of color as rated by ordinary observers, concluded that, in clear containers under laboratory conditions, color concentrations as low as 30 to 50 Color Units were considered unattractive. However, background and context features were found to play a major role in color perception. In natural settings, color concentrations above 100 Color Units were sometimes deemed not only acceptable, but attractive, confirming the major effect environmental setting has on aesthetic evaluations.

These studies clearly illustrate that many factors affect human perception of color. They further show the subjectivity involved when aesthetic values are based on visual observations, and indicate that a multitude of factors should be considered in establishing any protocol for color impact evaluation.

13. The draft permit contains monitoring and reporting requirements for cationic surfactants at a frequency of two per week. However, the Abbeville Plant does not use cationic surfactants in its processes, and they are not suspected to be present in the effluent. In fact, since the presence of cationic surfactants in the process would result in quality issues due to interferences with the anionic dispersion systems used in disperse dyes, cationic surfactants must be specifically avoided. Also, Milliken & Company is not aware of a standard method or laboratory standards for the measurement of cationic surfactants. As a result, any monitoring requirement would require extensive method development and validation, at considerable expense. Given the potential expense and difficulty of complying with this monitoring requirement and the demonstrable absence of any cationic species in the processes generating the wastewater, we request that the Agency remove the cationic surfactant monitoring requirements from the permit.
14. The draft permit contains monitoring and reporting requirements for anionic and nonionic surfactants at a frequency of two samples per week. Milliken does not anticipate a significant amount of variation in surfactant residuals in the effluent from day to day. Therefore, Milliken requests that the surfactant monitoring be reduced to once per week for 6 months only, after which a sufficient amount of information should be available to characterize the quantity of surfactants residuals in the effluent.
15. Milliken respectfully objects to the inclusion of mercury limitations in the draft permit. Mercury is not used in the process chemicals at the Abbeville plant, and is not expected to be present in the effluent. The reasonable potential calculation performed by the Agency utilized a mercury value of <math><0.0002\text{ mg/l}</math>. It is our understanding from the April 28th meeting that, although this result does not indicate the presence of mercury, it is insufficient for the Agency to demonstrate that there is no reasonable potential based on the detection limit associated with the method used. Accordingly, we are in the process of taking low-level mercury samples using Method 1631E, and will submit these results to the Agency as soon as they are available.
16. Milliken believes, based on recent hardness analyses of the Abbeville effluent and Blue Hill Creek, that hardness adjustment may be appropriate when calculating the metal limitations



in the permit, including copper. The results are attached for the Agency's review. Since the effluent and stream hardness values are significantly higher than the default of 25 mg/L used in the permit, hardness adjustment would significantly increase the CCC and CMC for the metals criteria using hardness in the calculation. At our July 28th meeting, you suggested that hardness monitoring might be included in the permit to provide data for the hardness adjustment. If this is the case, we request that hardness measurements be coordinated with the other monitoring requirements in the receiving stream (temperature and color). We also request that language be added to the permit allowing the Abbeville Plant or the Milliken Water Quality Laboratory to perform the hardness testing. Neither of these laboratories is certified by the state of South Carolina for the hardness parameter, but would perform the test according to Standard Method 2340 C.

17. Part I.A.7 of the draft permit states, "...if the permittee wishes for Tier 2 or Tier 3 production-based limits to subsequently apply, the permitting authority shall be notified in writing a minimum of 30 calendar days prior to the date in which the permittee expect to operate at that Tier." However, the nature of the Abbeville Plant's business makes a 30-day notification impractical because increased order volume cannot always be anticipated 30 days prior to the increase in production. Milliken requests that the Agency modify Part I-7 to require a notice of seven (7) days, which more closely conforms to the plant's practical ability to forecast production demand.
18. Part I.A.7 of the draft permit states, "The permittee shall submit the level of production that actually occurred during each month and the corresponding Tier and the limitations applicable to that Tier as an attachment to each Discharge Monitoring Report (DMR)." Milliken regards the production levels of its plants as business confidential information and objects to submitting this information in a publicly available document. Consequently, we request that the language of the permit be modified to require reporting of the range of production associated with a corresponding Tier rather than the actual level of production. If this is not possible and the Agency requires this data, we request that the Agency include a mechanism in the permit for reporting the actual production figures as Confidential Business Information (CBI).

If you have any questions or need any additional information, please contact me at (864) 503-1844.

Sincerely,



Jeffrey E. Silliman
Corporate Environmental Manager

CC: Mr. Marion Sadler, SCDHEC, Bureau of Water





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JUL 01 2005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dr. Jeffrey E. Silliman
Corporate Environmental Manager
Milliken and Company
P.O. Box 1926, M-482
Spartanburg, SC 29304

RE: Intent to Reissue
Abbeville Facility
NPDES Number SC0000353

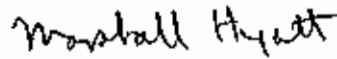
Dear Dr. Silliman:

The Environmental Protection Agency (EPA), Region 4, intends to issue a National Pollutant Discharge Elimination System (NPDES) permit in accordance with the Federal Clean Water Act to the referenced facility in the near future. The enclosed draft permit shows the proposed conditions to be incorporated as part of the final NPDES permit. Particular attention should be given to the effluent limitations, schedule of compliance, monitoring requirements, and reporting dates.

Comments relative to this draft permit are not required; however, if you wish to submit comments, please do so before August 5, 2005. Comments made during this time period may be incorporated into the draft permit prior to public notice. After this date, EPA will proceed with the permitting process, including requesting state certification and publicly noticing the draft permit. At the time of public notice, a copy of the notice will be sent to you. At that time you will have an additional opportunity to comment on or object to any aspects of the draft permit.

If you have any questions concerning the enclosed conditions or the procedures associated with the permit program, please contact me at the above address or by calling (404) 562-9304.

Sincerely,



Marshall Hyatt
Environmental Scientist
NPDES and Biosolids Permits Section
Permits, Grants, and Technical Assistance Branch
Water Management Division

Enclosures (2)

1. Draft NPDES Permit
2. Fact Sheet

cc: SCDHEC (with enclosures)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), the

Milliken and Company
Post Office Box 1926, M-482
Spartanburg, South Carolina 29304

is authorized to discharge from a facility located at

Abbeville Facility
601 Brooks Street
Abbeville, Abbeville County, SC 29620

to receiving waters named

Outfall 001: Blue Hill Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. The permit consists of this cover sheet, Part I 10 pages, Part II 17 pages, Part III 7 pages, and Part IV 3 pages.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight,

DRAFT

Date Issued

James D. Giattina, Director
Water Management Division

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER I PRODUCTION

1. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.7, page I-7]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (95)	50 (190)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (153)	50 (306)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	478.4	DRAFT	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	2533	5067	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (March - October)	2.20	4.40	Effluent	1/week	24-hour Composite
Total Ammonia (NH ₃ -N), mg/l (November - February)	4.65	9.30	Effluent	1/week	24-hour Composite
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	5.2	10.3	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	2.6	5.2	Effluent	1/week	Grab
Total Chromium, lbs/day	2.6	5.2	Effluent	1/week	24-hour Composite
Chromium (III), mg/l	Report	Report	Effluent	2 days/week	24-hour Composite
Chromium (VI), mg/l	Report	Report	Effluent	2 days/week	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	—	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 1 PRODUCTION - CONTINUED

1. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.7, page I-7]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Chronic Whole Effluent Toxicity, IC_{10}	> 85%	—	Effluent	See Part IV	
Temperature, °C.	See Item I.A.10	See Item I.A.10	Upstream of discharge	1/week	Grab
Temperature, °C.	See Item I.A.10	See Item I.A.10	Downstream of discharge	1/week	Grab
Temperature, °C. (Downstream - Upstream)	—	See Item I.A.10	—	1/week	Calculated
Temperature, °C.	See Item I.A.10	See Item I.A.10	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Upstream of discharge	3 days/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Downstream of discharge	3 days/week	Grab
Color, ADMI, (Downstream - Upstream) for apparent and true color	—	See Item I.A.11	---	3 days/week	Calculated
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Effluent	3 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.12	Report See Item I.A.12	Effluent	2 days/week	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CIAS), mg/l	Report See Item I.A.13	Report See Item I.A.13	Effluent	2 days/week	Grab
Cationic Surfactants, mg/l	Report See Item I.A.14	Report See Item I.A.14	Effluent	2 days/week	Grab
Total Recoverable Mercury, ng/l	—	Report	Effluent	See Item I.A.15	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	205	410	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	437	874	Effluent	1/week	Calculated
Total Recoverable Copper, mg/l	0.010	0.012	Effluent	1/week	24-hour Composite

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 2 PRODUCTION

2. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.7, page 1-7]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (95)	50 (190)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (153)	50 (306)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	570.1	1140.3	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	3038	6076	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)		shall not be less than 6.0 mg/l	Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)		shall not be less than 5.0 mg/l	Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (March - October)	2.12	4.24	Effluent	1/week	24-hour Composite
Total Ammonia (NH ₃ -N), mg/l (November - February)	4.47	8.94	Effluent	1/week	24-hour Composite
pH, standard units (SU)		6.0 - 8.5	Effluent	Daily	Continuous
Total Sulfide, lbs/day	6.2	12.4	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	3.1	6.2	Effluent	1/week	Grab
Total Chromium, lbs/day	3.1	6.2	Effluent	1/week	24-hour Composite
Chromium (III), mg/l	Report	Report	Effluent	2 days/week	24-hour Composite
Chromium (VI), mg/l	Report	Report	Effluent	2 days/week	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	--	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 2 PRODUCTION - CONTINUED

2. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. (See Part I.A.7, page I-7)

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY
Chronic Whole Effluent Toxicity, IC ₅₀	> 88%	---	Effluent	See Part IV
Temperature, °C	See Item I.A.10	See Item I.A.10	Upstream of discharge	1/week Grab
Temperature, °C	See Item I.A.10	See Item I.A.10	Downstream of discharge	1/week Grab
Temperature, °C (Downstream - Upstream)	---	See Item I.A.10	---	1/week Calculated
Temperature, °C	See Item I.A.10	See Item I.A.10	Effluent	1/week Grab
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Upstream of discharge	3 days/week Grab
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Downstream of discharge	3 days/week Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.11	---	3 days/week Calculated
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Effluent	3 days/week Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.12	Report See Item I.A.12	Effluent	2 days/week Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.13	Report See Item I.A.13	Effluent	2 days/week Grab
Cationic Surfactants, mg/l	Report See Item I.A.14	Report See Item I.A.14	Effluent	2 days/week Grab
Total Recoverable Mercury, ng/l	---	Report	Effluent	See Item I.A.15 Grab
Ultimate Oxygen Demand, lbs/day (March-October)	255	510	Effluent	1/week Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	556	1112	Effluent	1/week Calculated
Total Recoverable Copper, mg/l	0.010	0.012	Effluent	1/week 24-hour Composite

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 3 PRODUCTION

3. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.7, page 1-7]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS			
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE	
Flow, MGD	Report	Report	Effluent	Daily	Continuous	
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (95)	50 (190)	Effluent	1/week	24-hour Composite	
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (153)	50 (306)	Effluent	1/week	24-hour Composite	
Total Suspended Solids (TSS), lbs/day	650.2	1000 DRAFT	Effluent	1/week	24-hour Composite	
Chemical Oxygen Demand, lbs/day	3479	6958	Effluent	1/week	24-hour Composite	
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab	
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab	
Total Ammonia (NH ₃ -N), mg/l (March - October)	2.10	4.20	Effluent	1/week	24-hour Composite	
Total Ammonia (NH ₃ -N), mg/l (November - February)	4.42	8.84	Effluent	1/week	24-hour Composite	
pH, standard units (SU)		6.0 - 8.5	Effluent	Daily	Continuous	
Total Sulfide, lbs/day	7.1	14.2	Effluent	1/week	24-hour Composite	
Total Phenols, lbs/day	3.5	7.1	Effluent	1/week	Grab	
Total Chromium, lbs/day	3.5	7.1	Effluent	1/week	24-hour Composite	
Chromium (III), mg/l	Report	Report	Effluent	2 days/week	24-hour Composite	
Chromium (VI), mg/l	Report	Report	Effluent	2 days/week	24-hour Composite	
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	---	< 50% mortality in 100% effluent	Effluent		See Part IV	

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 3 PRODUCTION - CONTINUED

3. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.7, page I-7]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Chronic Whole Effluent Toxicity, IC ₅₀	> 80%	---	Effluent	See Part IV	
Temperature, °C.	See Item I.A.10	See Item I.A.10	Upstream of discharge	1/week	Grab
Temperature, °C.	See Item I.A.10	See Item I.A.10	Downstream of discharge	1/week	Grab
Temperature, °C. (Downstream - Upstream)	---	See Item I.A.10	---	1/week	Calculated
Temperature, °C.	See Item I.A.10	See Item I.A.10	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Upstream of discharge	3 days/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Downstream of discharge	3 days/week	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.11	---	3 days/week	Calculated
Color, ADMI (apparent and true color)	See Item I.A.11	See Item I.A.11	Effluent	3 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.12	Report See Item I.A.12	Effluent	2 days/week	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.13	Report See Item I.A.13	Effluent	2 days/week	Grab
Cationic Surfactants, mg/l	Report See Item I.A.14	Report See Item I.A.14	Effluent	2 days/week	Grab
Total Recoverable Mercury, ng/l	---	Report	Effluent	See Item I.A.15	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	279	558	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	603	1206	Effluent	1/week	Calculated
Total Recoverable Copper, mg/l	0.010	0.012	Effluent	1/week	24-hour Composite

4. All correspondence (including any report, notice, request for determination, etc.) that is required to be submitted to the Environmental Protection Agency (EPA) shall also be submitted to the South Carolina Department of Health and Environmental Control (DHEC) at the address specified in Part III, Section A. of this permit.
5. Samples taken in compliance with the monitoring requirements specified in this permit shall be taken at the nearest accessible point after final treatment but prior to the actual discharge or mixing with the receiving waters (unless otherwise specified).
6. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving water.
7. Tier 1 is represented by a production level of 51,700 lbs/day; Tier 2 is represented by a production level of 62,000 lbs/day, and Tier 3 is represented by a production level of 71,000 lbs/day. Tier 1 production-based limits shall apply upon the effective date of this permit. Based on 40 Code of Federal Regulations (C.F.R.) Section 401.43(b)(2)(ii)(B), if the permittee wishes for Tier 2 or Tier 3 production-based limits to subsequently apply, the permitting authority shall be notified in writing a minimum of 30 calendar days prior to the date in which the permittee expects to operate at that Tier. If any notification of increased production covers a period of more than one month, it shall specify the reasons for the anticipated production level increase. New notification of discharge at any subsequent Tier is required to cover a period of production not covered by prior notice or, if during two consecutive months otherwise covered by a notice, the production level at the facility does not in fact meet the higher level designated in the notice. Any notification shall include: a) the anticipated Tier to be applicable, and b) the period during which the permittee expects to operate at the anticipated Tier. For any notification, the permittee shall comply with the lower of the Tier corresponding to actual production during each month or the Tier specified in the notification. The permittee shall submit the level of production that actually occurred during each month and the corresponding Tier and the limitations applicable to that Tier as an attachment to each Discharge Monitoring Report (DMR) (EPA Form 3320-1).
8. Where a permittee continuously measures the pH of wastewater pursuant to a requirement or option in a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402(o) of the Clean Water Act (CWA or the Act), the permittee shall maintain the pH of such wastewater within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:
 - a. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
 - b. No individual excursion from the range of pH values shall exceed 60 minutes.

For purposes of this section, an excursion is an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in the applicable effluent limitations guidelines. (Secs. 301, 304, 306, and 501 of the Act (the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et. seq., as amended by the CWA of 1977, Pub. L. 95-217)). The permittee shall report the date, time, and length (minutes) of any excursion as an attachment to the DMR Form.

9. Discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to any waste stream which may ultimately be released to lakes, rivers, streams, or other waters of the United States is prohibited unless specifically authorized elsewhere in this permit. The permittee shall notify the Director in writing at least 30 days prior to planned use and discharge of any chemical not previously reported to the Director, other than chlorine or other products previously evaluated by EPA-Headquarters Office of Science and Technology, Engineering and Analysis Branch, that is to be used and that may be toxic to aquatic life.

Such notification shall include:

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- a. Name and general composition of the chemical;
- b. Frequencies of use;
- c. Quantities to be used;
- d. Proposed discharge concentrations;
- e. Any acute and chronic toxicity data for any available aquatic species (Laboratory reports shall be prepared according to Section 12 of EPA document no. EPA/821-R-02-012 entitled, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms* (2002), or the most current edition.);
- f. Product data sheet; and
- g. Product label.

Discharge of materials subject to this part is prohibited prior to approval by EPA.

10. Effluent, upstream, and downstream temperatures shall be sampled as close together in time as possible. The upstream sample point shall be the closest point upstream of the discharge that is not influenced or affected by the discharge. The downstream sample point shall be the closest point downstream of the discharge after complete mixing with the receiving stream. A description of the upstream and downstream sampling location shall be provided to the permitting authority for review within thirty days of permit issuance. All individual temperature values shall be reported as an attachment to the DMR Form. For each sampling, the upstream value shall be subtracted from the downstream value and each difference shall also be reported as an attachment to the DMR Form.
11. Effluent, upstream, and downstream color shall be sampled as close together in time as possible at the same sampling locations used in Item LA.10 above. Monthly average and daily maximum results shall be reported as both apparent and true color on the DMR Form. All individual apparent and true color values shall also be reported as an attachment to the DMR Form. For each sampling, the upstream apparent and true color values shall be subtracted from the corresponding downstream values and the difference for each shall also be reported as an attachment to the DMR Form.

12. Anionic Surfactants as MBAS shall be calculated as:

$$\text{mg MBAS/L} = \frac{\text{ug apparent LAS}}{\text{ml of original sample}}, \text{ where LAS} = \text{Linear alkylbenzene sulfonate}$$

Report on the DMR Form as "MBAS, calculated as LAS, molecular wt. _____. Monitoring shall be conducted by Method 5540 C, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998.

13. Nonionic Surfactants as CTAS shall be calculated as:

$$\text{mg CTAS/l} = \text{mg apparent nonionic/L sample}$$

Report on the DMR Form as "CTAS, calculated as nonionic surfactant C₁₂₋₁₈E₁₁. Monitoring shall be conducted by Method 5540 D, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998.

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14. Cationic surfactants shall be measured by ion chromatography using ion-pair separation with suppressed conductivity detection.
15. Total recoverable mercury sampling shall be conducted quarterly using EPA Method 1631E.
16. For Ultimate Oxygen Demand (UOD), monthly average values (lbs/day) shall be calculated and reported on the DMR Form using the following formula, where BOD₅ and Total Ammonia are expressed as lbs/day:

$$\text{UOD} = 8.34 \times \text{monthly average flow (MGD)} \times [\text{BOD}_5 \text{ monthly average} + \text{Total Ammonia monthly average}]$$

17. Any bypass of the treatment facility, which is not included in the effluent monitored above, is to be monitored for flow and all other parameters, except chronic whole effluent toxicity. For parameters other than flow, at least one grab sample per day shall be monitored. Daily flow shall be monitored or estimated, as appropriate, to obtain reportable data. All monitoring results shall be reported on a DMR Form.
18. Parameters shall be monitored using sufficiently sensitive Part 136 analytical methods. If the results for a given sample analysis are such that any parameter (other than fecal coliform) is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the DMR Form. For fecal coliform, a value of 1.0 shall be used in calculating the geometric mean. If the resulting fecal coliform mean value is 1.0, the permittee shall report "NODI=B" on the DMR Form. For each quantitative sample value that is not detectable, the test method used and the minimum level for that method for that parameter shall be attached to and submitted with the DMR Form. The permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Operational Level Attained.....Effective Date of Permit

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

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PART II

STANDARD CONDITIONS FOR NPDES PERMITS

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 Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

[40 CFR §§ 122.41(a) and 122.41(a)(1)]

2. Penalties for Violations of Permit Conditions

The Clean Water Act provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$32,500 per day for each violation. The Clean Water Act provides that any person who negligently violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

[40 CFR § 122.41(a)(2) and 69 FR 7121]

Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$32,500. Penalties for Class II violations are not to exceed \$11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$157,500.
[40 CFR § 122.41(a)(3) and 69 FR 7121]

The specific amounts for violations reflect those in effect at the time of permit issuance and are subject to change.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" Section B, Paragraph 3, and "Upset" Section B, Paragraph 4, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

[40 CFR § 122.41(m) and (n)]

4. Duty to Mitigate

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

[40 CFR § 122.41(d)]

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[40 CFR § 122.41(f)]

6. Toxic Pollutants

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

[40 CFR § 122.44(b)(1)]

7. 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 under Section 311 of the Act.

8. 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 Act.

9. Effect of a Permit

Except for any toxic effluent standards and prohibitions imposed under Section 307 of the CWA and "standards for sewage sludge use or disposal" under Section 405(d) of the CWA, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 307, 318, 403, and 405 (a)-(b) of CWA. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in 40 CFR §§ 122.62 and 122.64.

Compliance with a permit condition which implements a particular "standard for sewage sludge use or disposal" shall be an affirmative defense in any enforcement action brought for a violation of that "standard for sewage sludge use or disposal" pursuant to Sections 405(e) and 309 of the CWA.

[40 CFR § 122.5(a)]

10. Property Rights

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

[40 CFR § 122.5(b) & 40 CFR § 122.41(g)]

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

[40 CFR § 122.5(c)]

11. Onshore or Offshore Construction

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any waters of the United States.

12. Severability

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

13. 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.

[40 CFR § 122.41(h)]

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

[40 CFR § 122.41(e)]

2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

[40 CFR § 122.41(e)]

3. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations.

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs c. and d. of this subsection.

c. 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 Section D, Subsection 8 (24-hour notice).

d. Prohibition of bypass

- (1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
 - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (c) The permittee submitted notices as required under Paragraph c. of this subsection.
- (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 Paragraph d.(1) of this subsection.

[40 CFR § 122.41(m)(1)-(4)]

4. Upsets

a. Definition

* "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. 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 Paragraph c. of this subsection 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.

c. Conditions necessary for a demonstration of upset

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

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

- (2) The permitted facility was at the time being properly operated; and
- (3) The permittee submitted notice of the upset as required in Section D, Subsection 8 (24 hour notice);
- (4) The permittee complied with any remedial measures required under Section A., Subsection 4.

d. Burden of proof

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

[40 CFR § 122.41(n)(1)-(4)]

5. Removed Substances

This permit does not authorize discharge of solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters of the United States unless specifically limited in Part I.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling

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

[40 CFR § 122.41(j)(1)]

All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director.

2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that 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 $\pm 10\%$ from the true discharge rates throughout the range of expected discharge volumes. Once-through condenser cooling water flow which is monitored by pump logs, or pump hour meters as specified in Part I of this permit and based on the manufacturer's pump curves shall not be subject to this requirement. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references. These references are available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. (800) 553-6847 or (703) 487-4650.

"A Guide to Methods and Standards for the Measurement of Water Flow", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 100 pp. (Order by NTIS No. COM-7510683.)

"Water Measurement Manual", U.S. Department of Interior, Bureau of Reclamation, Revised Edition, 1984, 343 pp. (Order by NTIS No. PB-85221109.)

"Flow Measurement in Open Channels and Closed Conduits", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Order by NTIS No. PB-273535.)

"NPDES Compliance Flow Measurement Manual", U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-77, September 1981, 149 pp. (Order by NTIS No. PB-82131178.)

3. Monitoring Procedures

Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

[40 CFR § 122.41(j)(4)]

4. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

[40 CFR § 122.41(j)(5)]

5. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 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.

[40 CFR § 122.41(j)(2)]

6. Record Contents

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

[40 CFR § 122.41(j)(3)(i)-(vi)]

7. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- 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; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

[40 CFR § 122.41(i)(1)-(4)]

SECTION D. REPORTING REQUIREMENTS

1. Change in Discharge

Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR § 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D, Subsection 11.

- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

[40 CFR § 122.41(i)(1)(i)-(iii)]

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.

[40 CFR § 122.41(i)(2)]

Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Director.

3. Transfer of Ownership of Control

- a. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

[40 CFR § 122.41(i)(3)]

- b. In some cases modification or revocation and reissuance is mandatory.

[40 CFR § 122.61]

- c. Automatic transfers. As an alternative to transfers of permits by modification, any NPDES permit may be automatically transferred to a new permittee if:

- (1) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in Subparagraph b.(2) of this subsection;
- (2) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
- (3) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under 40 CFR § 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Subparagraph b.(2) of this subsection.

[40 CFR § 122.61(b)]

4. Monitoring Reports

Monitoring results shall be reported at the intervals specified in Part III of the permit.

[40 CFR § 122.41(i)(4)]

Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

[40 CFR § 122.41(i)(4)(i)]

5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

[40 CFR § 122.41(i)(4)(ii)]

6. Averaging of Measurements

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

[40 CFR § 122.41(i)(4)(iii)]

7. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

[40 CFR § 122.41(i)(5)]

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

8. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be included as information which must be reported within 24 hours under this paragraph.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit. [See 40 CFR § 122.44(g).]
- b. Any upset which exceeds any effluent limitation in the permit.
- c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. [See 40 CFR § 122.44(g)]

The Director may waive the written report on a case-by-case basis for reports under this subsection if the oral report has been received within 24 hours.

[40 CFR § 122.41(l)(6)]

9. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Section D at the time monitoring reports are submitted. The reports shall contain the information listed in Section D, Subsection 8.

[40 CFR § 122.41(l)(7)]

10. 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 to the Director.

[40 CFR § 122.41(l)(8)]

11. Changes in Discharge of Toxic Substances

The following conditions apply to all NPDES permits within the categories specified below:

- a. *Existing manufacturing, commercial, mining, and silvicultural dischargers.* All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - (1) 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 following "notification levels":
 - (a) One hundred micrograms per liter (100 µg/l);

(b) Two hundred micrograms per liter (200 $\mu\text{g/l}$) for acrolein and acrylonitrile; five hundred micrograms per liter (500 $\mu\text{g/l}$) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony; or

(c) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7).

[40 CFR § 122.42(a)(1)(i-iii)]

(2) 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 following "notification levels":

(a) Five hundred micrograms per liter (500 $\mu\text{g/l}$);

(b) One milligram per liter (1 mg/l) for antimony; or

(c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7).

[40 CFR § 122.42(a)(2)(i-iii)]

b. *Publicly owned treatment works.* All POTWs must provide adequate notice to the Director of the following:

(1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Section 301 or 306 of CWA if it were directly discharging those pollutants; and

(2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(3) For purposes of this paragraph, adequate notice shall include information on

(a) the quality and quantity of effluent introduced into the POTW, and

(b) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

[40 CFR § 122.42(b)]

12. 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.

[40 CFR § 122.41(b)]

The application should be submitted at least 180 days before the expiration date of this permit. The Regional Administrator may grant permission to submit an application later than the 180 days in advance, but no later than the permit expiration date.

[40 CFR § 122.21(d)]

When EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit if the permittee has submitted a timely application under this subsection which is a complete application for a new permit; and the Regional Administrator, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit.

[40 CFR § 122.6(a)]

Permits continued under this section remain fully effective and enforceable.

[40 CFR § 122.6(b)]

13. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified.

[40 CFR § 122.41(k)(1)]

a. *Applications.* 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, or
- (b) the manager of one or more manufacturing, production, or operating 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 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.

NOTE: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in this subparagraph. The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under this subparagraph rather than to specific individuals.

- (2) *For a partnership or sole proprietorship.* By a general partner or the proprietor, respectively; or
- (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, or
 - (b) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
- b. All reports required by permits, and other information requested by the Director shall be signed by a person described in Paragraph a. of this section, 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 in Paragraph a. of this section;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,
 - (3) The written authorization is submitted to the Director.
- c. *Changes to authorization.* If an authorization under Paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Paragraph b. of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
- d. *Certification.* Any person signing a document under Paragraph a. or b. of 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."

[40 CFR § 122.22]

14. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Permit Issuing Authority. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

[40 CFR §§ 124.18 & 122]

15. Penalties for Falsification of Reports

The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

[40 CFR § 122.41(k)(2)]

SECTION E. DEFINITIONS

1. Permit Issuing Authority

The Regional Administrator of EPA Region 4 or his/her designee is the "Permit Issuing Authority," unless at some time in the future the State or Indian Tribe receives authority to administer the NPDES program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving the authorization becomes the issuing authority.

The use of the term "Director" in this permit shall apply to the Regional Administrator of EPA, Region 4.
[40 CFR § 122.2]

2. Act

"Act" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, 33 U.S.C. 1251 et seq.
[40 CFR § 124.2]

3. Discharge Monitoring Report (DMR)

"Discharge Monitoring Report" means the EPA national form (Form 3320-1) including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. EPA will prepare and mail "pre-printed" DMR forms to permittees for completion. These "pre-printed" DMR forms will indicate the appropriate reporting requirements and limitations as found in Part I of the permit.
[40 CFR § 122.2]

4. Measurements

- a. **"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.

For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day.

For pollutants with limitations expressed in other units of measurement (i.e., concentration), the "daily discharge" is calculated as the average measurement of the pollutant over the day.

- b. The **"average annual discharge limitation"** means the highest allowable average of "daily discharges" over a period of twelve consecutive calendar months, calculated as the "arithmetic mean" of the monthly averages for the current calendar month and the eleven prior calendar months. The annual average is calculated each month.

This limitation is identified as "Annual Average" in Part I of the permit.

- c. The **"average monthly discharge limitation"** other than for bacterial indicators, 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 bacterial indicators, the "average monthly discharge limitation" is calculated using a "geometric mean."

This limitation is identified as "Monthly Average" or "Daily Average" in Part I of the permit.

- d. The **"average weekly discharge limitation"** 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.

This limitation is identified as "Weekly Average" in Part I of the permit.

- e. The **"maximum daily discharge limitation"** means the highest allowable "daily discharge."

This limitation is identified as "Daily Maximum" in Part I of the permit.

[40 CFR § 122.2]

5. Types of Samples

- a. **Composite Sample:** A "**composite sample**" is a combination of not less than eight influent or effluent portions (aliquots), of at least 100 ml, collected over the full time period specified in Part I of the permit. The composite sample must be flow proportioned by either a time interval between each aliquot, or by volume as it relates to effluent flow at the time of sampling, or by total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.
- b. **Grab Sample:** A "**grab sample**" is a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.

6. Calculation of Means

- a. **Arithmetic Mean:** The "**arithmetic mean**" of any set of values is the sum of the individual values divided by the number of individual values.
- b. **Geometric Mean:** The "**geometric mean**" of any set of values is the N^{th} root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

7. Hazardous Substance

A "**hazardous substance**" means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.

[40 CFR § 122.2]

8. Toxic Pollutants

A "**toxic pollutant**" is any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the Clean Water Act.

[40 CFR § 122.2]

PART III

Other Requirements

A. Reporting of Monitoring Results

Monitoring results obtained for each month shall be summarized for that month and reported on a DMR Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed month for submittal to EPA. (For example, data for January shall be submitted by February 28.) Signed copies of the DMRs and all other reports, including those required by Section D of Part II, Reporting Requirements, shall be submitted to the Permit Issuing Authority and DHEC at the following addresses:

Environmental Protection Agency
Region 4
Eastern Enforcement Section
Water Programs Enforcement Branch
Water Management Division
Atlanta Federal Center
61 Forsyth St., SW
Atlanta, GA 30303-8960

~~South Carolina~~ Department of Health &
Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201

If no discharge occurs during the reporting period, sampling requirements of this permit do not apply. The statement "No Discharge" shall be written on the DMR Form. If, during the term of this permit, the facility ceases discharge to surface waters, the Permit Issuing Authority shall be notified immediately upon cessation of discharge. This notification shall be in writing.

B. Reopener Clause

This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation, or sludge disposal requirement issued or approved under Sections 301(b)(2)(C) & (D), 307(a)(2), and 405(d)(2)(D) of the CWA, as amended, if the effluent standard, limitation, or sludge disposal requirement so issued or approved:

- a. Contains different conditions or is otherwise more stringent than any condition in the permit; or
- b. Controls any pollutant or disposal method not addressed in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable. The permit may also be reopened to include appropriate limits if monitoring data indicate the reasonable potential to cause, or contribute to, exceedances of any applicable South Carolina water quality criterion.

C. Best Management Practices/Pollution Prevention Conditions

In accordance with Section 304(e) and 402(a)(2) of the CWA as amended, 33 U.S.C. §§ 1251 *et seq.*, and consistent with the policy of the Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109, the permittee must develop and implement a Best Management Practices (BMP) plan incorporating pollution prevention measures. This part does not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. A BMP plan developed as a requirement of a previous NPDES permit will satisfy the requirements of this part if it addresses practices to reduce the likelihood of spills or other releases of oil or oil contaminated water, water treatment chemicals, cleaning chemicals, and biocides that may enter waters of the United States. References which may be used in developing the plan are the BMP provisions found at 40 C.F.R. Section 122.44(k) and accompanying guidance for developing and implementing BMPs.

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1. Definitions

- a. The term "**pollutants**" refers to conventional, non-conventional and toxic pollutants, as appropriate for the NPDES storm water program and toxic pollutants.
- b. **Conventional pollutants** are: biochemical oxygen demand (BOD), suspended solids, pH, fecal coliform bacteria, and oil and grease.
- c. **Non-conventional pollutants** are those which are not defined as conventional or toxic, such as phosphorus, nitrogen, or ammonia. (Ref: 40 C.F.R. Section 122, Appendix D, Table IV)
- d. For purposes of this part, **Toxic pollutants** include, but are not limited to: i) any toxic substance listed in Section 307(a)(1) of the CWA and any hazardous substance listed in Section 311 of the CWA, and ii) any substance (that is not also a conventional or non-conventional pollutant) for which EPA has published an acute or chronic toxicity criterion, or that is a pesticide regulated by the FIFRA.
- e. "**Pollution prevention**" and "**waste minimization**" refer to the first two categories of EPA's preferred hazardous waste management strategy: first, source reduction and then, recycling.
- f. "**Recycle/Reuse**" is defined as the minimization of waste generation by recovering and reprocessing usable products that might otherwise become waste; or the reuse or reprocessing of usable waste products in place of the original stock, or for other purposes such as material recovery, material regeneration, or energy production.

- g. **"Source reduction"** means any practice which: i) reduces the amount of any pollutant entering a waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and ii) reduces the hazards to public health and the environment associated with the release of such pollutant. The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. It does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a pollutant through a process or activity which itself is not integral to, or previously considered necessary for, the production of a product or the providing of a service.
- h. **"BMP3"** means a Best Management Plan incorporating the requirements of 40 C.F.R. Section 122.44(k), plus pollution prevention techniques, except where other existing programs are deemed equivalent by the permittee. **DRAFT** The permittee shall certify the equivalency of the other referenced programs.
- i. **"Waste Minimization Assessment"** means a systematic planned procedure with the objective of identifying ways to reduce or eliminate waste.
- j. The term **"material"** refers to chemicals or chemical products used in any plant operation (i.e., caustic soda, hydrazine, degreasing agents, paint solvents, etc.). It does not include lumber, boxes, packing materials, etc.

2. Best Management Practices/Pollution Prevention Plan

The permittee shall develop and implement a BMP3 plan for the facility which is the source of wastewater discharges covered by this permit. The plan shall be directed toward reducing those pollutants of concern which discharge, or could discharge, to surface waters and shall be prepared in accordance with good engineering and good housekeeping practices. For the purposes of this permit, pollutants of concern shall be limited to toxic pollutants, as defined above, known to the discharger. The plan shall address all activities which could or do contribute these pollutants to the surface water discharge, including process, treatment, and ancillary activities. Any available BMP plan for storm water discharges shall be attached to and become a component of the BMP3 plan.

3. Signatory Authority and Management Responsibilities

A copy of the plan shall be retained at the facility and shall be made available to the permit issuing authority upon request. The BMP3 plan shall contain a written statement from corporate or plant management indicating management's commitment to the goals of the BMP3 program. Such statements shall be publicized or made known to all facility employees. Training shall be provided for the individuals responsible for implementing the BMP3 plan.

4. BMP3 Plan Requirements

The following requirements may be incorporated by reference from existing facility procedures:

- a. name and description of facility, a map illustrating the location of the facility and adjacent receiving waters, and other maps, plot plans or drawings, as necessary;
- b. overall objectives (both short-term and long-term) and scope of the plan, towards reduction of pollutants, anticipated dates of achievement of reduction, and a description of means for achieving each reduction goal;
- c. a description of practices involving preventive maintenance, housekeeping, recordkeeping, inspections, and plant security;
- d. a description of a waste minimization assessment (WMA) plan for this facility, to determine actions that could be taken to reduce waste loadings and chemical losses to all wastewater streams, without compromising production efficiency or jeopardizing operations. The plan shall address both short-term and long-term opportunities for minimizing waste generation at this facility, particularly for high volume and/or high toxicity components of wastewater streams. Initially, the WMA plan should focus primarily on actions that could be implemented quickly, thereby realizing tangible benefits to surface water quality. Long term goals and actions pertaining to waste reduction shall include investigation of the feasibility of eliminating toxic chemical use, instituting process changes, raw material replacements, etc. At minimum, the WMA plan should include the following items:

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(i) Plant Water Balance - The WMA plan shall include an overall plant water balance, as well as internal water balances, as necessary. This information shall be used to determine any opportunities for water conservation or reuse/recycling and to determine if and where leakages might occur.

(ii) Materials and Risk Assessment - A materials and risk assessment shall be developed and shall include the following:

(1) identification of the types and quantities of materials used at the facility;

(2) identification of the location and types of materials management activities which occur at the facility;

(3) an evaluation of the following aspects of materials compatibility: containment and storage practices for chemicals, container compatibility, chemical mixing procedures; potential mixing or compatibility problems; and specific prohibitions regarding mixing of chemicals;

(4) technical information on human health and ecological effects of toxic or hazardous chemicals presently used or manufactured (including by-products produced) or planned for future use or production; and

(5) analyses of chemical use and waste generation, including input parameters for all pollutants, overall plant material balances and as necessary, internal process balances for all pollutants. (When actual measurements of the quantity of a chemical entering a wastewater stream are ~~not~~ readily available, reasonable estimates should be made based on best engineering judgment.) The analyses should address reasons for using particular chemicals, and/or measures or estimates of the actual and potential chemical discharges via wastewater, wastewater sludge, air, solid waste, or hazardous waste media.

(iii) Pollutant Reduction Methods - The WMA plan shall include, at a minimum, the following means of reducing pollutant discharges in wastewater streams or of otherwise minimizing wastes:

(1) process related source reduction measures, including any or all of the following, as appropriate: improved process controls; reduction in use of toxic or hazardous materials; chemical modifications and/or material purification; chemical substitution employing non-toxic or less toxic alternatives; and equipment upgrades or modifications or changes in equipment use;

(2) housekeeping/operational changes, including waste stream segregation, inventory control, spill and leak prevention, equipment maintenance, and employee training in areas of pollution prevention, good housekeeping, and spill prevention & response;

(3) in-process recycling, on-site recycling, and/or off-site recycling of materials;

(4) following all source reduction and recycling practices, wastewater treatment process changes, including the use of new or improved treatment methods, such that treatment degradation products are less toxic to aquatic or human life; and

(5) other means, as agreed upon by the permit issuing authority and the permittee.

- (iv) Practices which reduce pollutant loading in wastewater discharges with a consequent increase in solid hazardous waste generation, decrease in air quality, or adverse affect to groundwater shall not be considered waste reduction for the purposes of this assessment planning.

5. Best Management Practices and Pollution Prevention Committee:

A Best Management Practices and Pollution Prevention Committee (Committee) should be established to direct or assist in the implementation of the BMP3 plan. The Committee should be comprised of individuals within the plant organization who are responsible for developing, implementing, monitoring of success, and revision of the BMP3 plan. The activities and responsibilities of the Committee should address all aspects of the facility's BMP3 plan. The scope of responsibilities of the Committee should be described in the plan.

6. Employee Training

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Employee training programs shall inform appropriate personnel of the components and goals of the BMP3 plan and shall describe employee responsibilities for implementing the plan. Training shall address topics such as good housekeeping, materials management, recordkeeping and reporting, spill prevention and response, as well as specific waste reduction practices to be employed. The plan shall identify periodic dates for such training.

7. Plan Development & Implementation

The BMP3 plan shall be developed or updated within 3 months and implemented 6 months after the effective date of this permit, unless any later dates are specified by the Director. In cases of facilities that were not previously required to have a BMP plan, the plan must be developed within 6 months after the effective date of the permit and implemented within 18 months after the effective date of the permit.

8. Plan Review & Modification

If following review by the Director, or authorized representative, the BMP3 plan is determined insufficient, he/she may notify the permittee that the BMP3 plan does not meet one or more of the minimum requirements of this Part. Upon such notification from the Director, or authorized representative, the permittee shall amend the plan and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have 30 days after such notification to make the changes necessary.

The permittee shall modify the BMP3 plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to waters of the United States or if the plan proves to be ineffective in achieving the general objectives of reducing pollutants in wastewater or storm water discharges. Modifications to the plan may be reviewed by EPA in the same manner as described above.

D. Macroinvertebrate Assessment

1. The permittee shall perform a macroinvertebrate assessment on Blue Hill Creek and on Long Cane Creek downstream from the discharge location during January, February, or March of the calendar year. A second assessment on each stream shall also be conducted during July, August, or September of the calendar year.
2. The permittee shall submit a study plan for EPA review based on the following document:

EPA publication entitled, "Revision to Rapid Bioassessment Protocols for Use in Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish," by M.T. Barbour, J. Gerritsen, B.D. Snyder, and J.B. Stribling (EPA 841-B-99-002).
3. The study plan shall be submitted to EPA for review within 60 days of the effective date of the permit. Any EPA comments must be considered prior to ~~commencement~~ **DRAFT** of actual sampling efforts. An explanation of any deviation from EPA comments must be submitted with the sampling results.
4. Results of a given instream assessment must be submitted to the EPA within 90 days of completion of the sampling.

PART IV
Acute and Chronic Whole Effluent Toxicity Testing Program

As required by Part I of this permit, the permittee shall initiate the series of tests described below beginning in December 2005 to evaluate acute and chronic whole effluent toxicity of the discharge from outfall 001. All test species, procedures, and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013 (October 2002), or the most current edition. The control and dilution water will be moderately hard water as described in EPA-821-R-02-013, Section 7, or the most current edition. A standard reference toxicant quality assurance chronic toxicity test shall be conducted concurrently with each species used in the toxicity tests and the results submitted with the discharge monitoring report (DMR). Alternatively, if monthly QA/QC reference toxicant tests are conducted, these results must be submitted with the DMR. ~~Any deviation~~ **DRAFT** from the bioassay procedures outlined or cited herein shall be submitted in writing to the EPA for review and approval prior to use.

- a. The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction test and a fathead minnow, Pimephales promelas, Larval Survival and Growth test. All tests shall be conducted using a control (0% effluent) and the following dilution concentrations: for Tier 1 - 100%, 85%, 63%, 42%, and 21%; for Tier 2 - 100%, 88%, 66%, 44%, and 22%; and for Tier 3 - 100%, 89%, 66%, 44%, and 22%. The measured chronic endpoint will be the inhibition concentration causing 25% reduction in survival, reproduction, and/or growth (IC_{25}) of the test organisms. The IC_{25} shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of Ceriodaphnia dubia and Pimephales promelas larvae, as appropriate, used to initiate the test. The measured acute endpoint will be the percent mortality in the 100% concentration at 48 hours.
 - b. For each set of tests conducted, a 24 hr. composite sample of final effluent shall be collected and used per the sampling schedule discussed in EPA-821-R-02-013, Section 8.3, or the most current edition.
 - c. For either species, if control mortality exceeds 10% by 48 hours or 20% mortality thereafter, the test(s) for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% by 48 hours or 20% thereafter for either species. If, in any separate test, 100% mortality occurs prior to the end of the test, and control mortality is 10% or less if that time is prior to 48 hours or 20% or less thereafter, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable acute and/or chronic toxicity.

Each test must meet the test acceptability criteria for each species as defined in EPA-821-R-02-013, Section 13.12 and Section 11.12, respectively, or the most current edition. Additionally, all test results must be evaluated and reported for concentration-response relationship based on "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 C.F.R. Part 136)", EPA/821/B-00/004 (2000), or the most current edition. If the required concentration-response review fails to yield a valid relationship per EPA/821/B-00/004 (or the most current edition), that test shall be repeated. Any test initiated but terminated prior to completion must be reported with a complete explanation for the termination.

2. a. The toxicity tests specified above are referred to as "routine" tests. Monitoring shall be conducted once every two months. If the results from any six consecutive "routine" tests for a test species show no violations of any limit expressed in Item 3.a below, then the monitoring frequency can be reduced to once every six months thereafter for the duration of the permit for that species. Otherwise, the sampling frequency shall continue once every two months for that species.
 - b. Results from "routine" or additional tests shall be reported according to EPA-821-R-02-013, Section 10, or the most current edition. All results shall also be recorded and submitted on the DMR in the following manner: For Tier 1, if the monthly average IC_{25} of a test species is less than or equal to 85% effluent, " $\leq 85\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 85% effluent, ">85%" shall be entered. For Tier 2, if the monthly average IC_{25} of a test species is less than or equal to 88% effluent, " $\leq 88\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 88% effluent, ">88%" shall be entered. For Tier 3, if the monthly average IC_{25} of a test species is less than or equal to 89% effluent, " $\leq 89\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 89% effluent, ">89%" shall be entered. For each Tier, for the 100% effluent concentration, the percent mortality at 48 hours in each test shall also be separately entered on the DMR for each species. All individual test results for a given month shall be submitted as an attachment to the DMR.
3. a. For Tier 1, a monthly average IC_{25} of less than or equal to 85% effluent will be a violation of the monthly average chronic WET limit of this permit. For Tier 2, a monthly average IC_{25} of less than or equal to 88% effluent will be a violation of the monthly average chronic WET limit of this permit. For Tier 3, a monthly average IC_{25} of less than or equal to 89% effluent will be a violation of the monthly average chronic WET limit of this permit. For any Tier, mortalities of 50% or higher in 100% effluent at 48 hours will be a violation of the daily maximum acute WET limit of this permit.

- b. If an IC_{25} of less than or equal to 85% effluent for Tier 1/an IC_{25} of less than or equal to 88% effluent for Tier 2/an IC_{25} of less than or equal to 89% effluent for Tier 3 is found in a "routine" test, the permittee shall conduct two valid additional tests on each species indicating the violation and report each individual IC_{25} obtained. For any Tier, if mortality of 50% or higher in 100% effluent is found at 48 hours, the permittee shall conduct two valid additional 48-hour acute tests on each species indicating the violation and report each individual LC_{50} obtained.
- c. For Tier 1, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 85%, 63%, 42%, and 21%. For Tier 2, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 88%, 66%, 44%, and 22%. For Tier 3, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 89%, 66%, 44%, and 22%. The dilution series may be modified in the second valid test to more accurately identify the toxicity, such that, if possible, at least two dilutions above (not to exceed 100% effluent) and two dilutions below the receiving waste concentration and a control (0% effluent) are run.
- d. For each additional test, the sample collection requirements and the test acceptability criteria and concentration-response relationships specified in sections 1.b and c. above, respectively, must be met for it to be considered valid. The first additional test shall begin within one week of the end of the "routine" test, and shall be conducted weekly thereafter until two additional valid tests are completed.

INDUSTRIAL FACILITY FACT SHEET

APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
TO WATERS OF THE UNITED STATES

Application No.: SC0000353

Application Date: February 3, 2005

1. Synopsis of Application

A. Name and Address of Applicant

Milliken and Company
Post Office Box 1926, M-482
Spartanburg, South Carolina 29304

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For:

Abbeville Facility
601 Brooks Street
Abbeville, Abbeville County, South Carolina 29620

B. Type of Facility

Dyeing and finishing of woven fabrics made from synthetic fabrics and package dyeing of synthetic fibers. Standard Industrial Classification Codes 2262 and 2269.

C. Production Capacity of Facility (2002-2004 average)

Total production - average of 51,700 lbs/day

D. Applicant's Receiving Water

Blue Hill Creek
Latitude: 34° 10' 30" N Longitude: 82° 22' 30" W

See Attachment A for a sketch showing the location of the discharge.

The receiving stream is on South Carolina's Clean Water Act (CWA) § 303(d) list for fecal coliforms and turbidity. Total maximum daily loads have not yet been developed. Based on coordination with EPA's Drinking Water Section, no drinking water intakes are located immediately downstream of this discharge.

E. Description of Wastewater Treatment Facilities

All wastewater is treated via screening, activated sludge, clarification, and post aeration. Sludge is treated via aerobic digestion and belt sludge press and then disposed to a brick manufacturer. Sanitary wastewater is treated by the City of Abbeville treatment facility.

F. Description of Discharge (as reported in application)

Outfall Serial No. 001 - Process Wastewater, Utility Water, and Stormwater

Long-Term Average Flow, MGD - 0.551

Maximum Daily Flow, MGD - 1.823

Pollutants which are present in significant quantities, or which are subject to effluent limitations are as follows:

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Effluent Characteristic	Reported Data	
	Maximum Daily	Maximum 30-Day Avg
Biochemical Oxygen Demand, 5-day, mg/l	26	16
Total Suspended Solids, mg/l	123	84.3
Chemical Oxygen Demand, mg/l	459	376.2
Sulfide, mg/l	< 0.1	< 0.1
Phenols, mg/l	< 0.01	< 0.01
Color, standard units	439	94.7
Total Copper, mg/l	0.039	0.1
Total Zinc, mg/l	0.29	0.181
Dissolved Oxygen, mg/l	Not Reported	Not Reported
Temperature, °C.	16 (min)	29.6 (max)
pH, Standard Units	6.95 (min)	8.3 (max)
Ammonia (as N), mg/l	11.6	11.6
Total Chromium, mg/l	< 0.05	< 0.05
Total Mercury, mg/l	Not Reported	<0.0002

2. Proposed Effluent Limitations

Serial 001 - Process Wastewater, Utility Water, and Stormwater

PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 1):

	<u>Monthly Avg.</u>	<u>Daily Maximum</u>
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (95)	50 (190)
(Nov-Feb)	Report (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	478.4	956.9
Chemical Oxygen Demand, lbs/day	2533	5067
Total Ammonia (NH ₃ -N), mg/l		
(March-Oct)	2.20	4.40
(Nov-Feb)	4.65	9.30
Total Sulfide, lbs/day	5.2	10.3
Total Phenols, lbs/day	2.6	5.2
Total Chromium, lbs/day	2.6	5.2
Chromium (III), mg/l	Report	Report
Chromium (VI), mg/l	Report	Report
Dissolved Oxygen (DO)	minimum of 6.0 mg/l during Mar-Oct; 5.0 mg/l during Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Cationic Surfactants, mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Ultimate Oxygen Demand, lbs/day		
(Mar-Oct)	205	410
(Nov-Feb)	437	874
Chronic Whole Effluent Toxicity (WET), IC ₂₅	> 85%	—
Acute Whole Effluent Toxicity	---	Less than 50% mortality in 100% effluent at 48 hours

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PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 2):

	<u>Monthly Avg.</u>	<u>Daily Maximum</u>
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (95)	50 (190)
(Nov-Feb)	Report (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	570.1	1140.3
Chemical Oxygen Demand, lbs/day	3038	6076
Total Ammonia (NH ₃ -N), mg/l		
(March-Oct)	2.12	4.24
(Nov-Feb)	4.47	8.94
Total Sulfide, lbs/day	6.2	12.4
Total Phenols, lbs/day	3.1	6.2
Total Chromium, lbs/day	3.1	6.2
Chromium (III), mg/l	Report	Report
Chromium (VI), mg/l	Report	Report
Dissolved Oxygen (DO)	minimum of 6.0 mg/l during Mar-Oct; 5.0 mg/l during Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Cationic Surfactants, mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	255	510
(Nov-Feb)	556	1112
Chronic Whole Effluent Toxicity (WET), IC ₂₅	> 88%	---
Acute Whole Effluent Toxicity	---	Less than 50% mortality in 100% effluent at 48 hours

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PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 3):

	<u>Monthly Avg.</u> Report	<u>Daily Maximum</u> Report
Flow, MGD		
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (95)	50 (190)
(Nov-Feb)	Report (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	650.2	1300.5
Chemical Oxygen Demand, lbs/day	3479	6958
Total Ammonia (NH ₃ -N), mg/l		
(March-Oct)	2.10	4.20
(Nov-Feb)	4.42	8.84
Total Sulfide, lbs/day	7.1	14.2
Total Phenols, lbs/day	3.5	7.1
Total Chromium, lbs/day	3.5	7.1
Chromium (III), mg/l	Report	Report
Chromium (VI), mg/l	Report	Report
Dissolved Oxygen (DO)	minimum of 6.0 mg/l during Mar-Oct; 5.0 mg/l during Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Cationic Surfactants, mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	279	558
(Nov-Feb)	603	1206
Chronic Whole Effluent Toxicity (WET), IC ₂₅	> 89%	---
Acute Whole Effluent Toxicity	---	Less than 50% mortality in 100% effluent at 48 hours

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3. Basis for Final Effluent Limits and Permit Conditions

The permit conditions and limitations were taken from the following sources:

- The previous NPDES permit (issued March 29, 1996, effective May 1, 1996, modified October 1, 1998, and expired April 30, 2001)
- The Clean Water Act (CWA)
- Title 40, Code of Federal Regulations (C.F.R.) Parts 122 and 410
- South Carolina Water Classifications and Standards, (R.61-68), June 25, 2004
- Draft permit and fact sheet rationale prepared by the South Carolina Department of Health and Environmental Control (DHEC), dated July 13, 2004
- CORMIX modeling information provided with the permittee's 2005 permit application
- Discharge Monitoring Report (DMR) chronic WET data for August 1996- March 2005
- DMR flow data from January 2000-January 2005
- February 8, 2005 submittal of production data as confidential business information by the applicant
- April 6, 2005 letter from the DHEC General Counsel regarding mixing zones
- March 3, 1997-January 17, 2005 letters/reports submitted by/on behalf of Milliken to DHEC for its toxicity reduction/identification efforts in response to the chronic toxicity observed
- May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation
- June 24, 2005 DHEC reasonable potential (RP) spreadsheet analyses

All monitoring frequencies are based on the previous NPDES permit and the Best Professional Judgment (BPJ) of the permit writer. Based on evaluation of the flow data from January 2003 to January 2005 which represent current operating conditions, as well as CORMIX modeling information, and a March 17, 2005 site visit to the facility, it is the BPJ of the permit writer that credit for chronic dilution of 85% for Tier 1 (current) production of dyed fabrics and yarns can be given at the discharge point based on the outfall location in the middle of the receiving stream and the expected narrowness of the receiving stream and the effluent-dominated nature of the discharge at lowflow conditions. The 85% dilution corresponds to a Tier 1 average flow of 0.551 MGD. Based on an evaluation of the flow data from January 2000 to January 2003, it is also the BPJ of the permit writer that credit for chronic dilution of 88% for Tier 2 production and 89% for Tier 3 production can be given. The 88% dilution corresponds to a Tier 2 average flow of 0.744 MGD, while the 89% dilution equates to a Tier 3 average flow of 0.82 MGD. Authority for EPA to give credit for mixing zones is provided by an April 6, 2005 letter from the DHEC General Counsel.

For effluent guidelines-based parameters, Tier 1 (current production) is represented by a total production level of 51,700 lbs/day; Tier 2 is represented by a total production level of 62,000 lbs/day, and Tier 3 is represented by a total production level of 71,000 lbs/day. Tier 2 levels are based on a 20% increase in Tier 1 levels. Tier 3 levels are based on the maximum production allowed under the current NPDES permit, rather than a 20% increase in Tier 2 levels. If higher production levels are requested, an antidegradation analysis will need to be submitted. The provisions of permit Item I.A.8 regarding the applicability and notification requirements for a given Tier are based on 40 C.F.R. Section 122.45(b)(2)(ii).

Proposed Permit Conditions and Justification:

Parameter: Flow, MGD
Proposed Condition: Monitor only

Justification: The requirement to monitor flow is consistent with CWA §§ 308(a) and 402(a)(2).

Parameter: Biochemical Oxygen Demand (5-Day) (BOD₅), mg/l (lbs/day)
Proposed Condition: Tiers 1, 2, and 3 -
Monthly Average - Report mg/l (95 lbs/day March-October; 190 lbs/day November-February)
Daily Maximum - 50 mg/l (153 lbs/day March-October; 306 lbs/day November-February)

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Justification: Based on Best Professional Judgment (BPJ) of the permit writer,

Utility wastewater average flow = 0.11 MGD

Monthly Average: (0.11 MGD) (10 mg/l) (8.34) = 9.2 lbs/day

Daily Maximum: (0.11 MGD) (20 mg/l) (8.34) = 18.3 lbs/day

Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42):

Tier 1 Monthly Average: (3.3 lbs/1000 lbs production) (51,700 lbs/day production) = 170.6 lbs/day

Tier 1 Daily Maximum: (6.6 lbs/1000 lbs production) (51,700 lbs/day production) = 341.2 lbs/day

Total: Monthly Average - (9.2 lbs/day) + (170.6 lbs/day) = 179.8 lbs/day

Daily Maximum - (18.3 lbs/day) + (341.2 lbs/day) = 359.5 lbs/day

Previous Permit: Monthly Average - 95 lbs/day (March - October)
153 lbs/day (November - February)

Daily Maximum - 50 mg/l, 190 lbs/day (March - October)
50 mg/l, 306 lbs/day (November - February)

Since the previous permit's water quality-based mass limits are more stringent than the technology-based mass limits calculated for Tier 1 production above, they will be retained in the draft permit due to the anti-backsliding provisions of 40 C.F.R. Section 122.44(l). The previous permit's water quality-based mass limits are also more stringent than the technology-based mass limits for, and will be applied to, Tiers 2 and 3, since those Tiers are based on higher levels of production than Tier 1. The daily maximum concentration limit of 50 mg/l from the previous permit will also be retained due to the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: Total Suspended Solids (TSS), (lbs/day)
Proposed Condition: Monthly Average - Tier 1 total - 478.4 lbs/day
Tier 2 total - 570.1 lbs/day
Tier 3 total - 650.2 lbs/day

Daily Maximum - Tier 1 total - 956.9 lbs/day
Tier 2 total - 1140.3 lbs/day
Tier 3 total - 1300.5 lbs/day

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Justification: Based on BPJ of the permit writer,

utility wastewater average flow = 0.11 MGD

Monthly Average: (0.11 MGD) (20 mg/l) (8.34) = 18.3 lbs/day

Daily Maximum: (0.11 MGD) (40 mg/l) (8.34) = 36.7 lbs/day

Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42):

Monthly Average: (8.9 lbs/1000 lbs production) (51,700 lbs/day production) = 460.1 lbs/day

Daily Maximum: (17.8 lbs/1000 lbs production) (51,700 lbs/day production) = 920.2 lbs/day

Tier 1 Total: Monthly Average - 18.3 lb/s/day + 460.1 lbs/day = 478.4 lbs/day
Daily Maximum - 36.7 lbs/day + 920.2 lbs/day = 956.9 lbs/day

Tier 2: Monthly Average: (8.9 lbs/1000 lbs production) (62,000 lbs/day production) = 551.8 lbs/day

Daily Maximum: (17.8 lbs/1000 lbs production) (62,000 lbs/day production) = 1103.6 lbs/day

Tier 2 Total: Monthly Average - 18.3 lb/s/day + 551.8 lbs/day = 570.1 lbs/day
Daily Maximum - 36.7 lbs/day + 1103.6 lbs/day = 1140.3 lbs/day

Parameter: Ammonia-Nitrogen, mg/l
Proposed Condition: Monthly Average - Tier 1 - 2.20 mg/l (Mar - Oct); 4.65 mg/l (Nov - Feb)
Tier 2 - 2.12 mg/l (Mar - Oct); 4.47 mg/l (Nov - Feb)
Tier 3 - 2.10 mg/l (Mar - Oct); 4.42 mg/l (Nov - Feb)

Daily Maximum - Tier 1 - 4.40 mg/l (Mar - Oct); 9.30 mg/l (Nov - Feb)
Tier 2 - 4.24 mg/l (Mar - Oct); 8.94 mg/l (Nov - Feb)
Tier 3 - 4.20 mg/l (Mar - Oct); 8.84 mg/l (Nov - Feb)

Justification:

The February 3, 2005 permit application reports a daily maximum value of 11.6 mg/l based on 176 samples, based on a February 2002 sample. For flows at Tiers 1, 2, and 3, the resulting instream levels at lowflow conditions are 9.9, 10.2, and 10.3 mg/l, respectively. The corresponding instream chronic total ammonia values to protect against the toxic effects of un-ionized ammonia are 1.89, 1.89, and 1.89 mg/l, respectively, based on SC Rule 61-68, Attachment 3. The critical pH and temperature values used to calculate the instream chronic total ammonia values are 7.5 standard units, 27.5 °C. for March-October, and 16 °C. for November-February, respectively. Because each instream level for each Tier exceeds the corresponding total ammonia value that protects against chronic effects, reasonable potential (RP) to cause, or contribute to, exceedances of SC water quality criteria exists.

Authority for the above monthly average total ammonia water quality-based limits that protect against the toxic effects of un-ionized ammonia is thus provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (iii), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.d, E.14.a.2, and E.14.c.1. The monthly average limits are based on a May 18, 2005 DHEC ammonia evaluation. Because the calculated permit limits needed to protect against the acute effects of un-ionized ammonia criteria applied at the end of the pipe greatly exceed the chronic criteria, it is the BPI of the permit writer that the daily maximum limits will be based on multiplying the corresponding monthly average value by a factor of 2 instead.

Parameter: Total Sulfide, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Daily Maximum - Tier 1 - 10.3 lbs/day
Tier 2 - 12.4 lbs/day
Tier 3 - 14.2 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.10 lbs/1000 lbs production) (51,700 lbs/day production) = 5.2 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (51,700 lbs/day production) = 10.3 lbs/day

Tier 2: Monthly Average: (0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (62,000 lbs/day production) = 12.4 lbs/day

Tier 3: Monthly Average: (0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (71,000 lbs/day production) = 14.2 lbs/day

Parameter: Total Phenols, lbs/day

Proposed Condition: Monthly Average - Tier 1 - 2.6 lbs/day
Tier 2 - 3.1 lbs/day
Tier 3 - 3.5 lbs/day

Daily Maximum - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.05 lbs/1000 lbs production) (51,700 lbs/day production) = 2.6 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (51,700 lbs/day production) = 5.2 lbs/day

Tier 2: Monthly Average: (0.05 lbs/1000 lbs production) (62,000 lbs/day production) = 3.1 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day

Tier 3: Monthly Average: (0.05 lbs/1000 lbs production) (71,000 lbs/day production) = 3.5 lbs/day
Daily Maximum: (0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Parameter: Total Chromium, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 2.6 lbs/day
Tier 2 - 3.1 lbs/day
Tier 3 - 3.5 lbs/day

Daily Maximum - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Justification: Textile Mills Point Source Category, **DRAFT**
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.05 lbs/1000 lbs production) (51,700 lbs/day production) = 2.6 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (51,700 lbs/day production) = 5.2 lbs/day

Tier 2: Monthly Average: (0.05 lbs/1000 lbs production) (62,000 lbs/day production) = 3.1 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day

Tier 3: Monthly Average: (0.05 lbs/1000 lbs production) (71,000 lbs/day production) = 3.5 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Parameter: Chromium (III), mg/l
Proposed Condition: Report monthly average, daily maximum

Justification:

The long term average concentration and daily maximum for total chromium reported in the February 3, 2005 permit application is 0.023 mg/l and <0.05 mg/l, respectively, based on 319 samples. Because chromium (III) and (VI) were not monitored specifically, the relative levels of chromium (III) and (VI) may vary, and since South Carolina's chronic chromium (III) aquatic life criterion is 0.028 mg/l, the

discharge may have the RP to exceed the chromium (III) chronic criterion at lowflow conditions due to the size of the discharge in relation to the size of the receiving stream (instream waste concentration of 85%, 88%, and 89% at Tiers 1, 2, and 3, respectively). In order to assess whether the discharge has the reasonable potential to cause, or contribute to, excursions of South Carolina's chromium (III) aquatic life criterion, 2 days/week monitoring will be required, under the authority of CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. If data indicate there is RP, the permit will be modified to include appropriate limits.

Parameter: Chromium (VI), mg/l

Proposed Condition: Report monthly average, daily maximum

Justification:

The long-term average concentration for total chromium reported in the February 3, 2005 permit application is 0.023 mg/l based on 319 samples. Because chromium (III) and (VI) were not monitored specifically, the relative levels of chromium (III) and (VI) may vary, and since South Carolina's chronic and acute chromium (VI) aquatic life criteria are 0.011 mg/l and 0.016 mg/l, respectively, the discharge may have the reasonable potential to exceed the chromium (VI) criteria at lowflow conditions due to the size of the discharge in relation to the size of the receiving stream (instream waste concentration of 85%, 88%, and 89% at Tiers 1, 2, and 3, respectively). In order to assess whether the discharge has the RP to cause, or contribute to, excursions of South Carolina's chromium (VI) aquatic life criteria, 2 days/week monitoring will be required, under the authority of CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. If data indicate there is RP, the permit will be modified to include appropriate limits.

Parameter: Dissolved Oxygen (DO), mg/l

Proposed Condition: shall not be less than 6.0 during Mar-Oct; 5.0 during Nov- Feb

Justification: The effluent limitation is based on a DHEC May 18, 2005 ammonia evaluation and the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: pH, Standard Units

Proposed Condition: 6.0-8.5

Justification: Textile Mills Point Source Category, Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42): 6.0 - 9.0

Current Permit: 6.0 - 8.5

Based on the BPJ of the permit writer, since the current permit's water-quality based limits are more stringent than the technology-based limits prescribed above, are being attained, and meet the state water quality criteria found in SC Water Classification and Standards R. 61-68.G.10.f, they will be retained in the draft permit due to the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: Total Recoverable Copper, mg/l
Proposed Condition: Tier 1 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum
Tier 2 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum
Tier 3 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum

Justification:

The February 3, 2005 permit application reports total copper levels of 0.339 mg/l as a daily maximum, 0.1 mg/l as a maximum 30-day value, and a long-term average of 0.02 mg/l, based on 319 samples. See the June 24, 2005 DHEC reasonable potential analyses in Attachment B. Based on those analyses, RP to cause, or contribute to, exceedances of South Carolina's acute and chronic copper criteria at Rule 61.68 exists for Tiers 1, 2, and 3. The authority for a copper water quality-based limit is provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (iii), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.d, E.14.a.2, and E.14.c.1. The monthly average limits for each Tier above are intended to meet applicable SC chronic copper criteria instream at lowflow conditions, while the daily maximum limits above are intended to meet applicable SC acute copper criteria at the end of the pipe.

In assessing RP for the facility's discharge to cause, or contribute to, excursions of SC's acute and chronic copper criteria, EPA accounted for: 1.A) existing controls on point sources via: 1) the screening, activated sludge wastewater treatment, clarification, and post aeration provided to the facility's effluent; and 2) the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions and the nearest point source downstream of the discharge is the City of Abbeville wastewater, two miles downstream; 1.B) existing controls on nonpoint sources of pollution by assuming that background copper concentrations are zero at lowflow conditions; 2) variability of the effluent through the 319 samples cited in the permittee's February 3, 2005 permit application; and 3) dilution of the effluent in the receiving stream by giving credit for lowflow conditions and assuming background lowflows are not toxic.

Parameter: Temperature, ° C.
Proposed Condition: Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample
Downstream of Discharge - Report each individual sample
(Downstream - Upstream) - Calculate for each sampling

Justification:

Because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), upstream, downstream, and effluent sampling are being required under the authority of CWA §§ 308(a) and 402(a)(2) to assess whether the facility may have the RP to cause, or contribute to, exceedances of South Carolina's freshwater stream criteria found at SC Rule 61-68.E.12.a. If data indicate there is RP, the permit will be modified to include appropriate limits.

Parameter: Color, ADMI
Proposed Condition: For both true and apparent color:
Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample
Downstream of Discharge - Report each individual sample
(Downstream - Upstream) - Calculate for each sampling

Justification:

The February 3, 2005 permit application reports a long-term average value of 94.7 standard units and a daily maximum value of 439 standard units, based on 319 measurements. Due to these elevated values and because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), the facility may be discharging color levels that have the RP to interfere with classified water uses or existing water uses and thus, violate South Carolina's narrative criterion at Rule 61-68.E.5.c. The authority for such upstream, downstream, and effluent monitoring to assess RP is provided by CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. If data indicate there is RP, the permit will be modified to include appropriate limits. The authority to ultimately require numeric limits to maintain and protect a narrative color water quality criterion is provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (vi), and (vii)(A), and 122.44(d)(5). Authority for such is also provided in a December 1, 1986 decision of the Asheville North Carolina Division of US District Court (Civ. No. A-C-86-26) and a June 24, 1988 decision of the Fourth Circuit US Court of Appeals (No. 87-3529).

Parameter: Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l
Proposed Condition: Monthly Average - Report
Daily Maximum - Report

Justification:

The March 29, 1996 current NPDES permit requires monthly chronic WET monitoring of 89.4% effluent using Ceriodaphnia dubia reproduction and survival as the endpoints. A given test is considered a failure if there is a statistically significant difference at the 95% confidence level in Ceriodaphnia reproduction or survival between a control and 89.4% effluent, which was the instream waste concentration at lowflow conditions. A review of the DMR data for the period April 1996-March 2005 shows 107/108 chronic WET test failures. If any test fails, a "1" must be reported on the DMR and a toxicity reduction evaluation (TRE) plan must be submitted to the permitting authority within 60 days of notification of test results.

For each chronic WET failure cited above, various monthly TRE plans submitted by the facility for the period March 3, 1997-January 17, 2005 are available to EPA. An October 3, 1997 submittal concludes "The toxicity identification phase of the [November 1996] study has been completed and the results from the study indicate that high surfactant loading into the Abbeville Plant wastewater treatment facility was the major contributor to effluent toxicity during the study period." This submittal also states "Surfactants are introduced at multiple areas at the Abbeville Plant." Multiple subsequent TRE monthly plans by the facility, including the January 17, 2005 submittal, contain the statement "A Toxicity Identification Evaluation ("TIE"), completed in May, 1997, indicated that a major contributor to toxicity was the presence of surface-active agents (surfactants) in the wastewater discharge." Periodic TRE plans from February 28, 2001 to January 17, 2005 contain the statement that "*Wherever possible* [emphasis added], significant reductions or complete elimination of the surfactants has occurred. Replacement of these surfactants has not produced any noticeable toxicity result." However, only a few of these TRE plans quantified the levels of surfactants discharged, so the extent of reduction or the variability of the level currently discharged is unknown. **DRAFT**

Because the effluent continues to be toxic, it is the BPJ of the permit writer that surfactants may continue to contribute to ongoing chronic toxicity observed at the plant and that monitoring is needed to verify existing discharge levels and document any future changes or improvements in the amounts discharged. The authority for such monitoring is CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and (4) and 122.48. Monitoring for anionic surfactants shall be conducted by Method 5540 C, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998.

Parameter: Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l
Proposed Condition: Monthly Average - Report
Daily Maximum - Report

Justification: See justification for anionic surfactants as MBAS above. Monitoring for nonionic surfactants shall be conducted by Method 5540 D, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998.

Parameter: Cationic Surfactants, mg/l
Proposed Condition: Monthly Average - Report
Daily Maximum - Report

Justification: See justification for anionic surfactants as MBAS above. Because no standard method exists, it is the BPJ of the permit writer that monitoring for cationic surfactants shall be conducted by ion chromatography using ion-pair separation with suppressed conductivity detection.

Parameter: Total Mercury, ng/l
Proposed Condition: Daily Maximum - Report

Justification:

The 0.0002 mg/l detection level reported in the February 3, 2005 permit application appears to be based on EPA Method 245.1 and is not as sensitive as that obtained with EPA Method 1631E (0.000005 mg/l). Because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), quarterly sampling using EPA Method 1631E is being required to assess whether the discharge has the RP to cause, or contribute to, excursions of South Carolina's mercury aquatic life criteria. The monitoring is required under the authority of CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. If data indicate there is RP, the permit will be modified to include appropriate limits.

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Parameter: Ultimate Oxygen Demand, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 205 lbs/day (Mar-Oct); 437 lbs/day (Nov-Feb)
Tier 2 - 255 lbs/day (Mar-Oct); 556 lbs/day (Nov-Feb)
Tier 3 - 279 lbs/day (Mar-Oct); 603 lbs/day (Nov-Feb)
Daily Maximum - Tier 1 - 410 lbs/day (Mar-Oct); 874 lbs/day (Nov-Feb)
Tier 2 - 510 lbs/day (Mar-Oct); 1112 lbs/day (Nov-Feb)
Tier 3 - 558 lbs/day (Mar-Oct); 1206 lbs/day (Nov-Feb)

Justification:

Because the amounts of BOD₅ and ammonia that are discharged can vary and impact dissolved oxygen water quality criteria, it is the BPJ of the permit writer that limits for the parameter ultimate oxygen demand were appropriate. The monthly average limits above are obtained from a May 18, 2005 DHEC UOD evaluation and assume that the maximum level of total ammonia that still protects against the chronic toxicity effects of un-ionized ammonia is being discharged. Because the draft daily maximum BOD₅ and ammonia permit limits are based on multiplying the corresponding monthly average limits by a factor of two, it is the BPJ of the permit writer that the UOD daily maximum limits should also be based on multiplying the corresponding monthly average limits by a factor of two.

Floating Solids, Visible Foam, and Visible Sheen

The permit conditions prohibiting floating solids and visible foam in other than trace amounts and prohibiting a visible sheen are consistent with the previous NPDES permit and the anti-backsliding provisions of 40 C.F.R. Section 122.44(i).

Chronic Whole Effluent Toxicity (WET):

The March 29, 1996 current NPDES permit for this facility required final monthly chronic WET monitoring of 89.4% effluent using Ceriodaphnia dubia reproduction and survival as the endpoints. A given test is considered a failure if there is a statistically significant difference at the 95% confidence level in Ceriodaphnia reproduction or survival between a control and 89.4% effluent, which was the instream waste concentration at lowflow conditions. If any test fails, a "1" must be reported on the DMR and a toxicity reduction evaluation plan must be submitted to the permitting authority within 60 days of notification of test results.

A review of the DMR data for the period April 1996-March 2005 shows 107/108 chronic WET test failures. Based on these data, EPA has determined that this facility has RP to cause, or contribute to, excursions of South Carolina's narrative water quality criterion cited below (Rule 61-68.E.5.d):

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"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except classified uses within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life."

Thus, a chronic WET permit limit is authorized and required by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (v), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.c, E.5.d, and E.14.c.10.

In assessing RP for the facility's discharge to cause, or contribute to, excursions of SC's narrative criteria cited above, EPA accounted for: 1.A) existing controls on point sources via: 1) the screening, activated sludge wastewater treatment, clarification, and post aeration provided to the facility's effluent; and 2) the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions and the nearest point source downstream of the discharge is the City of Abbeville wastewater plant, two miles downstream; 1.B) existing controls on nonpoint sources of pollution by assuming their effect is negligible at background lowflow conditions; 2) variability of the effluent through the 106 Ceriodaphnia chronic pass/fail tests cited above; 3) dilution of the effluent in the receiving stream by giving credit for lowflow conditions and assuming background lowflows are not toxic; and 4) species sensitivity through the 108 Ceriodaphnia pass/fail chronic tests cited above and two fathead minnow chronic tests based on samples collected on December 14, 2004 and January 11, 2005 as reported in the February 3, 2005 permit application.

Because use of multiple test species with different sensitivities can more effectively characterize exposure to different pollutants and effluent variability, EPA believes the combined use of two test species to assess impacts on reproduction and growth will better maintain and protect South Carolina's surface waters at all times from substances harmful to aquatic life, as specified in SC Rule 61-68.E.5.d. EPA is thus requiring use of Ceriodaphnia dubia and Pimephales promelas (fathead minnow) as chronic WET test species for 40 C.F.R. Section 136 test methods to assess the reproductive and growth endpoints in this permit. Use of these two WET test species is consistent with past Regional practice. Authority to require two test species to assess chronic WET reproductive and growth endpoints is provided by CWA §§ 301(b)(1)(C), 308(a), and 402(a)(2), as well as 40 C.F.R. Sections 122.44(j)(1), (j)(4), and 122.48(a) and (b). Use of two WET test species is also consistent with the definitions of "aquatic toxicity test", "biological monitoring", "chronic", "propagation", and "whole effluent toxicity" at SC Rules 61-68.B.9, B.19, B.21, B.48, and B.62, respectively, and with SC Rules 61-68.E.14.c.10 and 61-68.E.17.

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The chronic WET methods required in this permit were promulgated by EPA on October 16, 1995 as Part 136 methods. EPA's 1995 promulgation of these methods was upheld in a December 10, 2004 decision by the D.C. Circuit U.S. Court of Appeals (No. 96-1062). Authority to use 40 C.F.R. Part 136 chronic WET methods with reproductive and growth endpoints to assess compliance with NPDES chronic WET permit limits is provided by CWA §§ 308(a) and 402(a)(2), as well as 40 C.F.R. Section 122.41(j)(4) and SC Rules 61-68.E.14.c.10 and 17.

Acute WET:

Imposition of a chronic WET monthly average limit without a corresponding daily maximum limit to protect against acutely toxic effects may lead to an excursion of South Carolina's narrative water quality criterion cited below (Rule 61-68.E.5.d):

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except classified uses within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life."

Also, compliance with a chronic WET monthly average limit alone may not guarantee that acutely toxic conditions would not occur on a given day. Thus, an acute WET permit limit at the end of the pipe is authorized and required by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(vii)(A) and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.c, E.5.d, and E.14.c.10.

Although no facility-specific acute WET data are available, EPA's March 1991 "Technical Support Document for Water Quality-based Toxics Control" does provide guidance on assessing RP for the need for permit limits without effluent monitoring data for a given facility and the need to take into account, where appropriate, the factors and requirements of 40 C.F.R. Section 122.44(d)(1)(ii).

Regarding dilution, because the facility's instream waste concentration is 85%, 88%, and 89% at lowflow conditions for Tiers 1, 2, and 3, respectively, and thus accounts for the majority of the receiving stream, there is a higher potential for toxic effect due to the low amount of available dilution. Also, the position of the outfall in the middle of the approximately 15-foot wide, shallow receiving stream limits the ability to provide safe passage to aquatic organisms at lowflow conditions. These factors support the need for a daily maximum acute WET permit limit applied at the end of the pipe.

Regarding existing controls on point sources of pollution, the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions; the nearest point source downstream of the discharge is the City of Abbeville wastewater plant, two miles downstream. Because the facility is a textile facility, it is considered to be a primary industrial category ~~of principal toxicity concern~~ and of principal toxicity concern. Also, the daily maximum values for aluminum (1.25 mg/l) and copper (0.339 mg/l) reported in the permittee's February 3, 2005 permit application exceed EPA's and/or South Carolina's corresponding acute aquatic life criteria (aluminum - 0.75 mg/l; copper - 0.012 mg/l). In addition, the 107/108 chronic WET test failures cited above are indicative of a toxic discharge. These factors also support the need for a daily maximum acute WET permit limit applied at the end of the pipe.

Regarding existing controls on nonpoint sources of pollution, their effect is assumed to be negligible at background lowflow conditions.

Based on the above factors and determinations, it is the BPJ of the permit writer that the discharge also has the RP to cause, or contribute to, excursions of South Carolina's Rule 61-68.E.5.d due to acute toxicity. Thus, an acute WET limit at the end of the pipe is also authorized and required by 40 C.F.R. Sections 122.44(d)(1)(i), (ii), and (v).

Because use of multiple test species with different sensitivities can more effectively characterize exposure to different pollutants and effluent variability, EPA believes the combined use of two test species to assess impacts on survival will better maintain and protect South Carolina's surface waters at all times from substances harmful to aquatic life, as specified in SC Rule 61-68.E.5.d above. EPA is thus using the results from Ceriodaphnia dubia and Pimephales promelas (fathead minnow) in the chronic WET tests to assess the survival endpoint at 48 hours in this permit. Use of these two WET test species is consistent with past Regional practice. Authority to require two test species to assess the acute WET survival endpoint is provided by CWA §§ 301(b)(1)(C), 308(a), and 402(a)(2), as well as 40 C.F.R. Sections 122.44(j)(1), (j)(4), and 122.48(a) and (b). Use of two WET test species is also consistent with the definitions of "acute", "aquatic toxicity test", "biological monitoring", "propagation", and "whole effluent toxicity" at SC Rules 61-68.B.3, B. 9, B.19, B.48, and B.62, respectively, and with SC Rules 61-68.E.14.c.10 and E.17. The use of two WET species is also consistent with the definition for "Freshwaters" found at SC Rule 61-68.G.10. Authority to use results from 40 C.F.R. Part 136 chronic WET methods to assess compliance with the survival endpoint for an NPDES permit acute WET limit is provided by CWA §§ 308(a) and 402(a)(2), as well as 40 C.F.R. Section 122.41(j)(4), and SC Rules 61-68.E.14.c.10 and 17.

Best Management Practices/Pollution Prevention Conditions:

The requirements in Part III.C are based on §§ 304(e) and 402(a)(2) of the CWA and are consistent with the policy of the Pollution Prevention Act of 1990. These conditions are intended to also use best management practices (BMP) to control plant site runoff, spillage, or leaks and drainage from raw material storage areas that may contribute significant amounts of toxic pollutants to navigable waters. These conditions do not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. A BMP plan developed as a requirement of the previous NPDES permit for this facility will satisfy the requirements of this part if it addresses practices to reduce the likelihood of spills or other releases of oil or oil contaminated water, water treatment chemicals, cleaning chemicals, and biocides that may enter waters of the United States. These conditions do not apply to storm water BMP provisions already required under a multi-sector general permit.

Macroinvertebrate Assessment:

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Results from these assessments will aid in determining whether this discharge is complying with: 1) South Carolina's narrative criterion at Rule 61-68.E.5.c:

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: "All ground waters and surface waters of the State shall at all times, regardless of flow, be free
: from sewage, industrial, or other waste which produce taste or odor or change the existing
: color or physical, chemical, or biological conditions in the receiving waters or aquifers to such a
: degree as to create a nuisance, or interfere with classified water uses (except classified uses
: within mixing zones as described in this regulation) or existing water uses.";

2) SC Rules 61-68.C.3 and 7, regarding protection of all uses and existing and classified uses of downstream waters; and 3) SC Rule 61-68.F.1.c., "the objective of maintaining and improving all surface waters to a level that provides for the survival and propagation of a balanced indigenous aquatic community." The required assessment is consistent with the definitions of "biological assessment" and "biological monitoring" at SC Rules 61-68.B.17 and 19, respectively - results from the assessment will indicate compliance with water quality standards and document water quality trends. Authority for such monitoring is also provided by CWA §§ 308(a) and 402(a)(2), 40 C.F.R. Sections 122.43 and 122.48(a), as well as SC Rules 61-68.E.1, 4.a, 17.b, and F.1.d.

Antimony and Zinc:

The March 29, 1996 current NPDES permit includes concentration limits for antimony and mass limits for zinc. The fact sheet for that permit indicates that these limits are water quality-based. A review of the June 24, 2005 DHEC RP spreadsheet analyses indicates no RP for either antimony or zinc to cause, or contribute to, exceedances of SC's aquatic life criteria. Therefore, based on the BPJ of the permit writer, these limits will not be retained in the draft permit.

4. Requested Variances or Alternatives to Required Standards

None.

5. Effective Date of Proposed Effluent Limits and Compliance Schedule

For all parameters, the permittee shall achieve compliance with the effluent limitations immediately upon the permit effective date.

For chronic WET, the facility has conducted toxicity reduction evaluation and/or toxicity identification efforts since at least November 1996. This is a requirement of the March 29, 1996 current NPDES permit. Based on the approximate nine years that the facility has already had to address its toxicity, it is the BPI of the permit ~~that~~ **DRAFT** compliance schedule is warranted to implement the permit's chronic WET limit. This is consistent with 40 C.F.R. Section 122.47(a)(1), where compliance is required as soon as possible.

6. State Certification Requirements

State certification of the proposed permit will be deemed waived if not provided within 60 days of EPA's request, per 40 C.F.R. Section 124.53(c)(3).

7. Discussion of Previous NPDES Permit Conditions

The NPDES permit (issued March 29, 1996, effective May 1, 1996, modified October 1, 1998, and expired April 30, 2001) contained the following final permit conditions:

Tier 1 - 51,000 lbs/day of woven finished fabric production at flowrate of 0.668 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	455	910
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	2550	5100
Total Chromium, lbs/day	2.55	5.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.746	1.491
Sulfide, lbs/day	5.6	10.2
Phenols, lbs/day	2.55	5.10
Zinc, lbs/day	1.97	2.15
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

Tier 2 - 61,000 lbs/day of woven finished fabric production at flowrate of 0.744 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	544	1090
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	3050	6100
Total Chromium, lbs/day	3.05	6.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.736	1.472
Sulfide, lbs/day	6.1	12.2
Phenols, lbs/day	3.05	6.10
Zinc, (lbs/day)	2.17	2.37
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

Tier 3 - 71,000 lbs/day of woven finished fabric production at flowrate of 0.820 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	633	1266
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	3550	7100
Total Chromium, lbs/day	3.55	7.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.728	1.456
Sulfide, lbs/day	7.1	14.2
Phenols, lbs/day	3.55	7.10
Zinc, lbs/day	2.37	2.59
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

8. EPA Contact

Additional Information concerning the permit may be obtained at the address and during the hours noted in Section 9 from :

Ms. Ann Brown
Public Notice Coordinator
404-562-9288

9. The Administrative Record, including application, draft permit, fact sheet, public notice (after release), comments received, and additional information is available by writing the EPA, Region 4, or for review and copying at 61 Forsyth St., SW, Atlanta, GA 30303-8960, between the hours of 8:15 A.M. and 4:30 P.M., Monday Through Friday. Copies will be provided at a minimal charge per page.

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10. Proposed Schedule for Permit Issuance

Draft Permit to Applicant	July 1, 2005
Request CWA § 401 Certification	August 25, 2005
Public Notice Date	August 25, 2005
Proposed Issuance Date	November 1, 2005
Proposed Effective Date	December 1, 2005

11. Procedures for the Formulation of Final Determinations

a. Comment Period

The Environmental Protection Agency proposes to issue an NPDES permit to this applicant subject to the aforementioned effluent limitations and special conditions. These determinations are tentative and open to comment from the public.

Interested persons are invited to submit written comments on the draft permit to the following address:

Water Management Division
Environmental Protection Agency
Sam Nunn Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960
ATTN: Ann Brown, Public Notice Coordinator

All persons, including applicants, who believe any condition of a draft permit is inappropriate or that the Director's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). Any supporting materials which are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consist of State or Federal statutes and regulations, EPA documents of general applicability, or other generally available reference materials. Commenters shall make supporting materials not already included in the administrative record available to EPA as directed by the Regional Administrator. (A comment period longer than 30 days may be necessary to give commenters a reasonable opportunity to comply with the requirements of this section. Additional time shall be granted as per 40 C.F.R. Section 124.10 to the extent that a commenter who requests additional time demonstrates the need for such time.)

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All comments received within thirty (30) days following the date of public notice, or if the public comment period is extended, by the end of the public comment period, will be considered in the formulation of final determinations with regard to proposed permit issuance.

b. Public Hearing

The EPA Regional Administrator will hold a public hearing if there is a significant degree of public interest in a proposed permit or group of permits, or may hold a public hearing, at his discretion, if useful information and data may be obtained thereby. Public Notice of such a hearing will be circulated at least thirty days prior to the hearing.

c. Issuance of the Permit

After consideration of all written comments and of the requirements and policies in the CWA and appropriate regulations, and, if a public hearing is held, after consideration of all comments, statements and data presented at the hearing, the EPA Regional Administrator will make determinations regarding the permit issuance. Under 40 C.F.R. Section 124.14, the Regional Administrator may reopen the public comment period if this could expedite the decision making process. If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning the permit, the Regional Administrator may prepare a new draft permit, a revised fact sheet or statement of basis, and reopen the public comment period limited to those substantial new questions that caused the reopening.

After the close of the public comment period on a draft permit, the Regional Administrator shall issue a final permit decision, including a response to comments. The Regional Administrator will so notify the applicant, all persons submitting written comments, all persons that have requested notice of the final permit decision, and, if a public hearing was held, all persons participating in the hearing.

d. Appeal of NPDES Permits

Within 30 days after an NPDES final permit decision has been issued, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board (EAB) to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by the NPDES regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

Further information regarding the appeal of NPDES permits may be found under 40 C.F.R. Section 124.19.

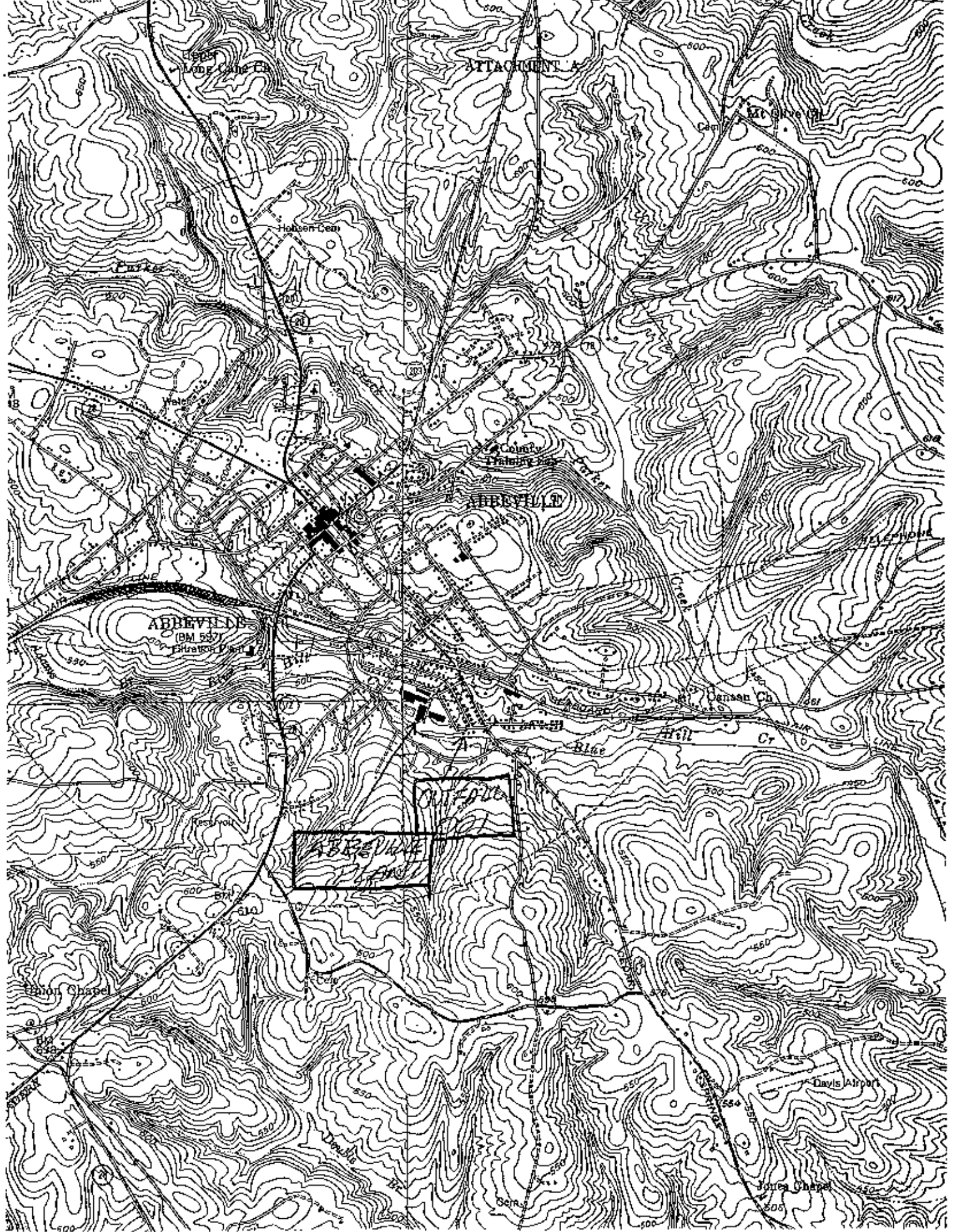
e. Stays of Contested Permit Conditions

- (1) If an appeal for review of an NPDES permit decision is timely filed, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. Uncontested permit conditions shall be stayed only until the date specified in paragraph (2) of this section below. If the permit involves a new source, new discharger, or a recommencing discharger, the applicant shall be without a permit for the proposed new source or discharger pending final agency action.
- (2) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. The Regional Administrator shall identify the stayed provisions of permits for existing facilities. All other provisions of the permit for the existing facility, become fully effective and enforceable 30 days after the date of the notification.

- (3) The Regional Administrator shall, as soon as possible after receiving notification from the EAB of the filing of a petition for review, notify the EAB, the applicant, and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit as of the date specified in paragraph (2) of this section. For NPDES permits, the notice shall comply with the requirements of 40 C.F.R. Section 124.60(b).

Any facility holding an existing NPDES permit must, to the extent conditions of any new permit are stayed under this section, comply with the conditions of the existing permit which correspond to the stayed conditions, unless compliance with the existing conditions would be technologically incompatible with compliance with other conditions of the new permit which have not been stayed.

Further information regarding the effectiveness of the NPDES permits may be found under 40 C.F.R. Sections 124.16 and 124.60.



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
																			For AL at discharge pt. (C019)
Name of Facility:		MILITARY & COMPANY/ABBREVIATED PLANT/UNIT		DIFF		For AL at discharge pt. (C019)		For OL at discharge pt. (AAF)		For Average		For Maximum		Reasonable Potential		Governing Criteria			
NIPDES Number		SC0000363		DF1		DF2		CV		M. Factor		CV		M. Factor		Avg.		Max	
Receiving Water:		Blue Hill Creek		Avg (mg/l)		# of samp		# of sam		for RP		for RP		ALL		AL (Only)		Fresh Water	
Water Classification:		PW		For All		n		d		for RP		for RP		ALL		AL (Only)		Avg	
Flow (mgd):		0.5514		-		28		120		1.70		0.2238		1.00		5.600E-01		No	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
																			Derived Limits (mg/l)
Parameter		POL (mg/l)		Fresh Water		Average		Maximum		CV		M. Factor		CV		M. Factor		Reasonable Potential	
Metals, Cyanide, Pesticides		0.0050		-		0.4658		0.58		1.70		0.2238		1.00		5.600E-01		No	
Arsenic, total		0.0050		-		0		0		8.20		0.2060		6.20		0.000E+00		No	
Arsenic, total		0.0050		-		0		0		8.20		0.2060		6.20		0.000E+00		No	
Beryllium		0.0010		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Cadmium, total		0.0010		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Cadmium, total		0.0050		-		0.05		0.05		6.20		0.1000		6.20		0.000E+00		No	
Copper, total		0.010		-		0.03		0.1		1.50		0.2000		1.00		3.900E-02		Yes	
Lead		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Mercury		0.00000050		-		0.0002		0.0002		6.20		0.1000		6.20		0.000E+00		Yes	
Nickel		0.010		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Selenium		0.0050		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Silver, total		0.0050		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Thallium		0.0005		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Zinc, total		0.010		-		0.07675		0.155		1.10		0.54		1.00		0.440E-02		No	
Cyanide, total		0.010		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Volatiles Organic Compounds		-		-		-		-		-		-		-		-		-	
Acetone		0.0050		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Acrylonitrile		0.0050		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Benzene		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Bromolam		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Carbon Tetrachloride		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Chlorobenzene		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Chlorobromomethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Chloroethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
2-Chloroethyl vinyl ether		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Chloroform		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Dichlorobromomethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,1-Dichloroethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,2-Dichloroethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,1-Dichloroethylene		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,2-Dichloroethylene		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,1-Dichloropropane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,3-Dichloropropane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Ethylbenzene		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Methyl bromide		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Methyl chloride		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Methylene chloride		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,1,2,2-Tetrachloroethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,1,1-Trichloroethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
1,1,2-Trichloroethane		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	
Trichloroethylene		0.0020		-		0		0		6.20		0.1000		6.20		0.000E+00		No	

	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AK	AL
7	Proposed Sample Frequency	Per HH & OL	Multi. Factor for Daily Maximum	Limits (mg/l) Fresh Water	Max. value based on	Permit Limits (mg/l) Fresh Water	Governing Criteria Fresh Water	Reg. Reference	State Specific Limits Applied						
8	# of samples per month	CV	MDL/AMAL	Avg (mg/l) Based on Average Values (All)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Average	Maximum						
11	4	0.27	1.45												
12	1	0.5	1.46												
13	1	0.5	1.46												
14	1	0.5	1.46												
15	4	0.6	2.01												
16	4	0.7	2.15	N/A	1.047E-02	1.047E-02	1.372E-02	AL	AL	R.61-68, Appendix					
17	1	0.5	1.46												
18	1	0.5	1.46	1.46	5.995E-05	5.995E-05	8.753E-05	HHDQ	HHDQ	R.61-68, Appendix					
19	1	0.5	1.46												
20	1	0.5	1.46												
21	1	0.5	1.46												
22	1	0.5	1.46												
23	1	0.5	1.46												
24	1	0.5	1.46												
25															
26															
27															
28	1	0.5	1.46												
29	1	0.5	1.46												
30	1	0.5	1.46												
31	1	0.5	1.46												
32	1	0.5	1.46												
33	1	0.5	1.46												
34	1	0.5	1.46												
35															
36	1	0.5	1.46												
37	1	0.5	1.46												
38	1	0.5	1.46												
39	1	0.5	1.46												
40	1	0.5	1.46												
41	1	0.5	1.46												
42	1	0.5	1.46												
43	1	0.5	1.46												
44	1	0.5	1.46												
45	1	0.5	1.46												
46	1	0.5	1.46												
47	1	0.5	1.46												
48	1	0.5	1.46												
49	1	0.5	1.46												
50	1	0.5	1.46												
51	1	0.5	1.46												
52	1	0.5	1.46												
53	1	0.5	1.46												
54	1	0.5	1.46												

A	B	C	D	E	F		G	H	I	J	K	L	M	N	O	P		Q	R	S	
					Average	# of samp										Yes/No	Max				
7	Parametr	PQL (mg/l)	Derived Limits (mg/l)	Max (mg/l)	Avg (mg/l)	# of sam	Max (mg/l)	Maximum		CY	M. Factor	For Maximum		Concentration	RWC	Avg	Max				
55	Vinyl chloride	0.0020	2.471E+00		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
56	Acid Extractable Compounds																				
57	p-chlorophenol	0.010	1.070E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
58	2-Chlorophenol	0.010	4.662E-04		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
59	2,4-Dichlorophenol	0.010	1.399E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
60	2,4-Dichlorophenol	0.010	1.399E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
61	2,4-Dimethylphenol	0.010	7.552E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
62	4,6-Dimethylphenol	0.010	8.199E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
63	2,4-Dinitrophenol	0.050	2.219E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
64	2-Nitrophenol	0.010	6.189E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
65	4-Nitrophenol	0.010	2.939E-01		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
66	Para-methoxyphenol	0.010	1.599E-02	2.291E-02	0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
67	Phenol	0.010	0.644E-01		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
68	2,4,6-Trichlorophenol	0.010	9.324E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
69	Basic Neutral Compounds																				
70	Acid Extractable Compounds																				
71	Acenaphthene	0.010	6.056E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
72	Acenaphthylene	0.010	3.644E-04		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
73	Anthracene	0.010	2.704E-04		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
74	Benzo(a)anthracene	0.010	9.324E-07		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
75	Benzo(a)fluoranthene	0.010	8.392E-05		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
76	Benzo(a)pyrene	0.010	8.392E-05		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
77	3,4-Benzofluoranthene	0.010	6.392E-05		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
78	Benzo(b)fluoranthene	0.010	1.765E-04		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
79	Benzo(k)fluoranthene	0.010	8.392E-05		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
80	Bis(2-chloroethoxy)methane	0.010	8.444E+00		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
81	Bis(2-chloroethyl)ether	0.010	2.471E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
82	Bis(2-chloroethoxy)diether	0.010	8.444E+00		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
83	Bis(2-ethylhexyloxy)dimethane	0.010	1.026E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
84	4-Bromophenyl phenyl ether	0.010	1.282E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
85	Buyl benzyl phthalate	0.010	6.056E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
86	2-Chloroethoxyphenyl ether	0.010	5.699E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
87	4-Chlorophenyl phenyl ether	0.010	8.392E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
88	Chrysene	0.010	2.600E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
89	Di-n-butyl phthalate	0.010	1.868E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
90	Di-n-octyl phthalate	0.010	8.392E-05		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
91	Dibenz(a,h)anthracene	0.010	2.590E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
92	1,2-Dichlorobenzene	0.0020	3.890E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
93	1,3-Dichlorobenzene	0.0020	3.890E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
94	1,4-Dichlorobenzene	0.0020	3.890E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
95	2,3-Dichlorobenzene	0.010	1.305E-04		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
96	Diethyl phthalate	0.010	1.868E+00		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
97	Dimethyl phthalate	0.010	1.176E+00		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
98	2,4-Dinitrofluorene	0.010	1.176E-02		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
99	2,6-Dinitrofluorene	0.010	1.411E-01		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
100	Fluoranthene	0.010	6.230E+00		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
101	Fluorene	0.010	1.411E-01		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
102	Hexachlorobenzene	0.010	1.868E-06		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
103	Hexachlorobutadiene	0.010	2.206E-03		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				
104	Hexachlorocyclopentadiene	0.010	2.489E-04		0	1			1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00	No	No				

7	Proposed Sample Frequency	U	V	W	X		Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
					Mult. Factor for Daily	Limits (mg/l)										
8	# of samples	PW	Surf	rain	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
55	1	0.6	1.46													
56																
57																
58	1	0.6	1.46													
59	1	0.6	1.46													
60	1	0.6	1.46													
61	1	0.6	1.46													
62	1	0.6	1.46													
63	1	0.6	1.46													
64	1	0.6	1.46													
65	1	0.6	1.46													
66	1	0.6	1.46													
67	1	0.6	1.46													
68	1	0.6	1.46													
69																
70																
71	1	0.6	1.46													
72	1	0.6	1.46													
73	1	0.6	1.46													
74	1	0.6	1.46	2.00												
75	1	0.6	1.46													
76	1	0.6	1.46													
77	1	0.6	1.46													
78	1	0.6	1.46													
79	1	0.6	1.46													
80	1	0.6	1.46													
81	1	0.6	1.46													
82	1	0.6	1.46													
83	1	0.6	1.46													
84	1	0.6	1.46													
85	1	0.6	1.46													
86	1	0.6	1.46													
87	1	0.6	1.46													
88	1	0.6	1.46													
89	1	0.6	1.46													
90	1	0.6	1.46													
91	1	0.6	1.46													
92	1	0.6	1.46													
93	1	0.6	1.46													
94	1	0.6	1.46													
95	1	0.6	1.46													
96	1	0.6	1.46													
97	1	0.6	1.46													
98	1	0.6	1.46													
99	1	0.6	1.46													
100	1	0.6	1.46													
101	1	0.6	1.46													
102	1	0.6	1.46													
103	1	0.6	1.46													
104	1	0.6	1.46													

A	B	C	D		E	F		G	H		I	J	K		L	M	N	O	P	Q	R	S	
			Avg (mg/l)	Max (mg/l)		Avg (mg/l)	Max (mg/l)		CV	M. Factor			CV	M. Factor									Responsible Potential
7																							
8	Parameter	POL (mg/l)	Derived Limits (mg/l)		Fresh Water	Data for Reasonable Potential Analysis		Average	# of samp	Max (mg/l)	Maximum	# of sam	CV	M. Factor	CV	M. Factor	RWC		Yes/No	Max	Avg	Max	
9		0.010	Avg (mg/l)	Max (mg/l)		Avg (mg/l)	# of samp										0.000E+00		No	No			
105	Methoxybenzene	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
106	Indeno(1,2,3-c,d)pyrene	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
107	Isophthalic	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
108	Naphthalene	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
109	Nitrobenzene	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
110	n-Nitrosodimethylamine	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
111	n-Nitrosodimethylamine	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
112	n-Nitrosodiphenylamine	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
113	Phenanthrene	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
114	Pyrene	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
115	1,2,4-Trichlorobenzene	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
121	alpha-BHC	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
122	beta-BHC	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
123	gamma-BHC	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
124	delta-BHC	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
127	Aldrin	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
128	Alutrium, total	0.050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
132	Barium	0.050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
166	Chromium (II)	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
167	Chromium (VI)	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
170	4,4'-DDD	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
172	4,4'-DDE	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
174	4,4'-DDT	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
188	1,2-dimethylchloroethane	0.020	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
197	Dieldrin	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
206	n-Endosulfan	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
207	b-Endosulfan	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
208	Endosulfan sulfate	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
209	Endrin	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
210	Endrin aldehyde	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
220	Heptachlor	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
221	Heptachlor Epoxide	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
223	Iron	0.020	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
226	Manganese	0.010	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
244	Polychlorinated Biphenyls (PCB)	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
249	Sulfide (as S)	1.0	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			
263	Toxaphene	0.00050	0.000E+00	0.000E+00		0.000E+00	1	0.000E+00	1	0.000E+00	0	1	0.000E+00	6.20	0.000E+00	6.20	0.000E+00		No	No			

7	Proposed Sample Frequency	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AK	AL
8	# of samples	FW	FW	Daily	Avg (mg/l)	Max (mg/l)	AL								
105	1	0.6	1.46												
106	1	0.6	1.46												
107	1	0.6	1.46												
108	1	0.6	1.46												
109	1	0.6	1.46												
110	1	0.6	1.46												
111	1	0.6	1.46												
112	1	0.6	1.46												
113	1	0.6	1.46												
114	1	0.6	1.46												
115	1	0.6	1.46												
121	1	0.6	1.46												
122	1	0.6	1.46												
123	1	0.6	1.46												
124	1	0.6	1.46												
127	1	0.6	1.46	2.00	1.025E-01	2.045E-01	AL	1.025E-01	2.045E-01	AL	AL	53 FR 33178, 650089	53 FR 33178, 650089		
129	1	0.6	1.46												
132	1	0.6	1.46												
166	1	0.6	1.46												
167	1	0.6	1.46												
170	1	0.6	1.46												
172	1	0.6	1.46												
174	1	0.6	1.46												
188	1	0.6	1.46												
197	1	0.6	1.46												
206	1	0.6	1.46												
207	1	0.6	1.46												
209	1	0.6	1.46												
210	1	0.6	1.46												
220	1	0.6	1.46												
221	1	0.6	1.46												
223	1	0.6	1.46												
225	1	0.6	1.46	1.45	1.175E-01	1.715E-01	H4C07	1.175E-01	1.715E-01	H4C07	H4C07	R.51-65, Appendix	R.51-65, Appendix		
244	1	0.6	1.46												
249	4	0.6	2.01												
253	1	0.6	1.46												

Updated
October 12, 2004

Facility Information:
 Name of Facility: [REDACTED]
 NPDES Number: [REDACTED]
 Is this discharge above Drinking Water Plant Intake: [REDACTED] Intakeoff: [REDACTED]

Effluent Information:
 Plant Flow (mgd): [REDACTED]
 Effluent TSS (mg/l): [REDACTED]
 Effluent Hardness (mg/l CaCO₃): [REDACTED]

Receiving Water Information at the WWT/P Discharge Point:
 Name of Receiving Waters: [REDACTED]
 Water Classification: [REDACTED]
 7Q10 at discharge point (cfs): [REDACTED]
 Average Annual Flow at discharge point (cfs): [REDACTED]

Receiving Water Information for protection of SWPA if applicable:
 Name of Receiving Water: [REDACTED]
 Water Classification: [REDACTED]
 7Q10 at SWPA Boundary (cfs): [REDACTED]
 AAF at SWPA Boundary (cfs): [REDACTED]

Stream TSS (mg/l): [REDACTED] pH (MAX) 7.8
 Stream Hardness (mg/l CaCO₃): [REDACTED]
 Default Stream TSS = 1 mg/l
 Default Hardness = 25 mg/l

This Discharge IS upstream of a proposed or existing water plant intake

Applicable Stream Flows

For Protection of Aquatic Life (AL) and Organoleptic Effects (OL) at Discharge Point:	
7Q10 at Discharge Point (cfs):	0.150 % of 7Q10 @ WWTP available for mixing (%)
AAF at Discharge Point (cfs):	3.130 % of AAF @ WWTP available for mixing (%)

For Protection of Human Health (Org) at Discharge Point:	
7Q10 at Discharge Point (cfs):	0.150 % of 7Q10 @ WWTP available for mixing (%)
AAF at Discharge Point (cfs):	3.130 % of AAF @ WWTP available for mixing (%)

For Protection of Human Health (W/O and MCL):	
7Q10 at SWPA Boundary (cfs):	1948.140 % of 7Q10 available for mixing (%)
AAF at SWPA Boundary (cfs):	4806.280 % of AAF available for mixing (%)

Asenic	[REDACTED]
Cadmium	[REDACTED]
Chromium+3	[REDACTED]
Chromium+6	[REDACTED]
Copper	[REDACTED]
Lead	[REDACTED]
Mercury	[REDACTED]
Nickel	[REDACTED]
Zinc	[REDACTED]
Silver	[REDACTED]

Treatment Processes:

Primary	[REDACTED]
Activated Sludge	[REDACTED]
Trickling Filter	[REDACTED]
Nitrification (Tertiary)	[REDACTED]
Anaerobic Digestion	[REDACTED]

Sludge - Land Application:

Class-A	[REDACTED]
Class-B	[REDACTED]

Applicable Effluent Limits: [REDACTED]

Parameter	POL (mg/l)	Background Concentration (mg/l)		Data as Reported on NPDES Permit Application and/or DMSP etc.				Proposed Frequency # samples per month	CV for Monthly Average	CV for Daily Max.	Parameter
		90 th percentile	Median	Enter	Average	# samp.	Enter				
Volatile Organic Compounds											
Arsenic, total	0.0050										Arsenic, total
Beryllium	0.0010										Beryllium
Cadmium, total	0.00010										Cadmium, total
Chromium, total	0.0050										Chromium, total
Copper, total	0.010										Copper, total
Lead	0.0020										Lead
Nickel	0.010										Nickel
Selenium	0.0050										Selenium
Silver, total	0.0050										Silver, total
Thallium	0.00050										Thallium
Zinc, total	0.010										Zinc, total
Cyanide, total	0.010										Cyanide, total
Volatile Organic Compounds											
Acetone	0.0050										Acetone
Acrylonitrile	0.0050										Acrylonitrile
Benzene	0.0020										Benzene
Bromoform	0.0020										Bromoform
Carbon Tetrachloride	0.0020										Carbon Tetrachloride
Chlorobenzene	0.0020										Chlorobenzene
Dichlorobromomethane	0.0020										Dichlorobromomethane
Dichloroethane	0.0050										Dichloroethane
1,1-Dichloroethane	0.0020										1,1-Dichloroethane
1,2-Dichloroethane	0.0020										1,2-Dichloroethane
1,1,1-Trichloroethane	0.0020										1,1,1-Trichloroethane
1,2-Dichloropropane	0.0020										1,2-Dichloropropane
1,3-Dichloropropane	0.0020										1,3-Dichloropropane
Ethylbenzene	0.0020										Ethylbenzene
Methyl bromide	0.0020										Methyl bromide
Methyl chloride	0.0020										Methyl chloride
Methylene chloride	0.0020										Methylene chloride
1,1,2,2-Tetrachloroethane	0.0020										1,1,2,2-Tetrachloroethane
1,1,1,1-Tetrachloroethane	0.0020										1,1,1,1-Tetrachloroethane
1,1,2-Trichloroethane	0.0020										1,1,2-Trichloroethane
Trichloroethylene	0.0020										Trichloroethylene
Vinyl chloride	0.0020										Vinyl chloride
Acid Extractable Compounds											
p-chloro-m-cresol	0.010										p-chloro-m-cresol
2-Chlorophenol	0.010										2-Chlorophenol
2,4-Dichlorophenol	0.010										2,4-Dichlorophenol
2,4-Dimethylphenol	0.010										2,4-Dimethylphenol
4,6-Dinitro-o-cresol	0.010										4,6-Dinitro-o-cresol
2,4-Dinitrophenol	0.050										2,4-Dinitrophenol

Parameter	POL (mg/l)	Background Concentration		Data as Reported on NPDES Permit Application and/or DMR etc.					Proposed Frequency # samples	CV for Monthly	CV for Daily	Parameter
		90 th percentile	Median	Enter	Avg	# samp.	Enter	Max				
2-Nitrophenol	0.010											2-Nitrophenol
4-Nitrophenol	0.010											4-Nitrophenol
Penta-chlorophenol	0.010											Penta-chlorophenol
Phenol	0.010											Phenol
2,4,6-Trichlorophenol	0.010											2,4,6-Trichlorophenol
Basis-Neutral Compounds												
Acenaphthene	0.010											Acenaphthene
Acenaphthylene	0.010											Acenaphthylene
Anthracene	0.010											Anthracene
Benzo(a)anthracene	0.010											Benzo(a)anthracene
Benzo(a)pyrene	0.010											Benzo(a)pyrene
3,4-benzofluoranthene	0.010											3,4-benzofluoranthene
Benzo(g)herylene	0.010											Benzo(g)herylene
Benzo(k)fluoranthene	0.010											Benzo(k)fluoranthene
Bis(2-chloroethoxy)ethane	0.010											Bis(2-chloroethoxy)ethane
Bis(2-chloroethyl)ether	0.010											Bis(2-chloroethyl)ether
Bis(2-chloropropoxy)ethane	0.010											Bis(2-chloropropoxy)ethane
Bis(2-ethylhexyl)phthalate	0.010											Bis(2-ethylhexyl)phthalate
4-Bromodiphenyl ether	0.010											4-Bromodiphenyl ether
Buryl benzyl phthalate	0.010											Buryl benzyl phthalate
2-Chloronaphthalene	0.010											2-Chloronaphthalene
4-Chlorophenyl phenyl ether	0.010											4-Chlorophenyl phenyl ether
Chrysene	0.010											Chrysene
Di-n-butyl phthalate	0.010											Di-n-butyl phthalate
Di-n-octyl phthalate	0.010											Di-n-octyl phthalate
Dibenz(a,h)anthracene	0.0020											Dibenz(a,h)anthracene
1,2-Dichlorobenzene	0.0020											1,2-Dichlorobenzene
1,3-Dichlorobenzene	0.0020											1,3-Dichlorobenzene
3,3'-Dichlorobenzidine	0.010											3,3'-Dichlorobenzidine
Diethyl phthalate	0.010											Diethyl phthalate
Dimethyl phthalate	0.010											Dimethyl phthalate
2,4-Dinitrotoluene	0.010											2,4-Dinitrotoluene
2,6-Dinitrotoluene	0.010											2,6-Dinitrotoluene
Fluoranthene	0.010											Fluoranthene
Fluorene	0.010											Fluorene
Hexachlorocyclopentadiene	0.010											Hexachlorocyclopentadiene
Hexachlorobenzene	0.010											Hexachlorobenzene
Indene(1,2,3-c,d)pyrene	0.010											Indene(1,2,3-c,d)pyrene
Isophorone	0.010											Isophorone
Naphthalene	0.010											Naphthalene
Nitrobenzene	0.010											Nitrobenzene
n-Nitrosodipropylamine	0.010											n-Nitrosodipropylamine
n-Nitrosodimethylamine	0.010											n-Nitrosodimethylamine
n-Nitrosodiphenylamine	0.010											n-Nitrosodiphenylamine
Phenanthrene	0.010											Phenanthrene
Pyrene	0.010											Pyrene
1,2,4-Trichlorobenzene	0.0020											1,2,4-Trichlorobenzene
alpha-BYC	0.000050											alpha-BYC

Parameter	POL (mg/l)	Background Concentration 50 th Percentile		Data as Reported on NPDES Permit Application and/or DMR, etc.			Proposed Frequency & sample	CV for Monthly	CV for Daily	Parameter
		Median	Maximum	Enter	Avg	# samp.				
	0.000050									beta-BHC
	0.000050									gamma-BHC
	0.000050									delta-BHC
	0.050									Aluminum, total
	0.050									Barium
	0.010									Chromium III
	0.010									Chromium VI
	0.000050									4,4'-DDE
	0.000050									4,4'-DDT
	0.0020									1,2-Dibromoethane
	0.000050									Dieldrin
	0.000050									a-Endosulfan
	0.000050									b-Endosulfan
	0.000050									Endosulfan sulfate
	0.000050									Erythrin
	0.000050									Erythrin aldehyde
	0.000050									Heptachlor
	0.000050									Heptachlor Epoxide
	0.050									Iron
	0.010									Iron
	0.000050									Manganese
	0.000050									Polychlorinated Biphenyls (PCBs, Aroclors)
	1.0									Sulfide (as S)
	0.000050									Toluene

* When detected above POL in effluent, consider requiring a bioaccumulation, fish tissue or other appropriate study.
 ** There are about 10 methods for organotin analysis and most are using GC-PPD as prescribed in the NOAA 1993 method.
 *** There are 4 High Resolution GC-PPD methods which indicate a level of detection (LOD) of 1ng/l (0.001 mg/l or 1 ug/l) or less.

Updated
October 12, 2004

Facility Information:
 Name of Facility: [REDACTED]
 NPDES Number: [REDACTED] Intake#: [REDACTED]
 Is this discharge above Drinking Water Plant Intake: [REDACTED]

Effluent Information:
 Plant Flow (mgd): [REDACTED]
 Effluent TSS (mg/l): [REDACTED]
 Effluent Hardness (mg/l CaCO₃): [REDACTED]

Receiving Water Information at the WWTP Discharge Point:
 Name of Receiving Waters: [REDACTED]
 Water Classification: [REDACTED]
 7Q10 at discharge point (cfs): [REDACTED]
 Average Annual Flow at discharge point (cfs): [REDACTED]

Receiving Water Information for protection of SWPA if applicable:
 Name of Receiving Waters: [REDACTED]
 Water Classification: [REDACTED]
 7Q10 at SWPA Boundary (cfs): [REDACTED]
 AAF at SWPA Boundary (cfs): [REDACTED]
 Stream TSS (mg/l): [REDACTED] pH (MIX) [REDACTED] 7.8
 Stream Hardness (mg/l CaCO₃): [REDACTED] Default Stream TSS = 1 mg/l
 Default Hardness = 25 mg/l

This Discharge IS upstream of a proposed or existing water plant intake
 Applicable Stream Flows

For Protection of Aquatic Life (AL) and Organoleptic Effects (OL) at Discharge Point:	
7Q10 at Discharge Point (cfs):	0.150 % of 7Q10 @ WWTP available for mixing (%)
AAF at Discharge Point (cfs):	3.130 % of AAF @ WWTP available for mixing (%)

For Protection of Human Health (Org) at Discharge Point:	
7Q10 at Discharge Point (cfs):	0.150 % of 7Q10 @ WWTP available for mixing (%)
AAF at Discharge Point (cfs):	3.130 % of AAF @ WWTP available for mixing (%)

For Protection of Human Health (W/O and MCL):	
7Q10 at SWPA Boundary (cfs):	1348.140 % of 7Q10 available for mixing (%)
AAF at SWPA Boundary (cfs):	4806.280 % of AAF available for mixing (%)

Arsenic	[REDACTED]
Cadmium	[REDACTED]
Chromium+3	[REDACTED]
Chromium+6	[REDACTED]
Copper	[REDACTED]
Lead	[REDACTED]
Mercury	[REDACTED]
Nickel	[REDACTED]
Zinc	[REDACTED]
Silver	[REDACTED]

Treatment Process:
 Primary [REDACTED]
 Activated Sludge [REDACTED]
 Trickling Filter [REDACTED]
 Nitrification (Tertiary) [REDACTED]
 Anaerobic Digestion [REDACTED]
 Sludge - Land Application: [REDACTED]
 Class-A [REDACTED]
 Class-B [REDACTED]

Applicable Effluent Limits: [REDACTED]

Parameter	PQL (mg/l)	Background Concentration		Data as Reported on NPDES Permit Application and/or DMR etc.				Proposed Frequency # samples	CV for Monthly	CV for Daily	Parameter
		90 th percentile	Median	Enter	Avg	# samp.	Enter				
2-Nitrophenol	0.010										2-Nitrophenol
4-Nitrophenol	0.010										4-Nitrophenol
Para-chlorophenol	0.010										Para-chlorophenol
Phenol	0.010										Phenol
2,4,6-Trichlorophenol	0.010										2,4,6-Trichlorophenol
Basic-Natural Compounds											
Acenaphthene	0.010										Acenaphthene
Acenaphthylene	0.010										Acenaphthylene
Anthracene	0.010										Anthracene
Benzo(a)anthracene	0.10										Benzo(a)anthracene
Benzo(a)pyrene	0.010										Benzo(a)pyrene
3,4-benzofluoranthene	0.010										3,4-benzofluoranthene
Benzo(g)hchrysene	0.010										Benzo(g)hchrysene
Benzo(k)fluoranthene	0.010										Benzo(k)fluoranthene
Bis(2-chloroethyl)ether	0.010										Bis(2-chloroethyl)ether
Bis(2-chloroethyl)phthalate	0.010										Bis(2-chloroethyl)phthalate
4-Bromobiphenyl ether	0.010										4-Bromobiphenyl ether
Butyl benzyl phthalate	0.010										Butyl benzyl phthalate
2-Chloronaphthalene	0.010										2-Chloronaphthalene
4-Chlorophenyl phenyl ether	0.010										4-Chlorophenyl phenyl ether
Chrysene	0.010										Chrysene
Di-n-butyl phthalate	0.010										Di-n-butyl phthalate
Di-n-octyl phthalate	0.010										Di-n-octyl phthalate
Dibenz(a,h)anthracene	0.010										Dibenz(a,h)anthracene
1,2-Dichlorobenzene	0.0020										1,2-Dichlorobenzene
1,3-Dichlorobenzene	0.0020										1,3-Dichlorobenzene
1,4-Dichlorobenzene	0.0020										1,4-Dichlorobenzene
3,3'-Dichlorobenzidine	0.010										3,3'-Dichlorobenzidine
Diethyl phthalate	0.010										Diethyl phthalate
Dimethyl phthalate	0.010										Dimethyl phthalate
2,4-Dinitrochlorobenzene	0.010										2,4-Dinitrochlorobenzene
2,6-Dinitrochlorobenzene	0.010										2,6-Dinitrochlorobenzene
Fluoranthene	0.010										Fluoranthene
Fluorene	0.010										Fluorene
Hexachlorobenzene	0.010										Hexachlorobenzene
Hexachlorocyclopentadiene	0.010										Hexachlorocyclopentadiene
Hexachloroethane	0.010										Hexachloroethane
Indeno(1,2,3-cd)pyrene	0.010										Indeno(1,2,3-cd)pyrene
Isophthalene	0.010										Isophthalene
Naphthalene	0.010										Naphthalene
Nitrobenzene	0.010										Nitrobenzene
p-Nitrosodipropylamine	0.010										p-Nitrosodipropylamine
p-Nitrosodimethylaniline	0.010										p-Nitrosodimethylaniline
p-Nitrosodiphenylamine	0.010										p-Nitrosodiphenylamine
Phenanthrene	0.010										Phenanthrene
Pyrene	0.010										Pyrene
1,2,4-Trichlorobenzene	0.0020										1,2,4-Trichlorobenzene
alpha-BHC	0.00050										alpha-BHC

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
																			Parameter
1	Milliken & Company/Abbeyville Plant (70-10)	DF1																	
2	NPDES Number: 500000303	DF2																	
3	Receiving Water Blue Hill Creek																		
4	Water Classification: FW																		
5	Flow (mgd): 0.5914																		
6	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
7	Data for Reasonable Potential Analysis																		
8	Parameter	POL (mg/l)	Derived Limits (mg/l)	Avg (mg/l)	Max (mg/l)	# of sam	Maximum	# of sam	CV for RP	M. Factor for RP	For Maximum CV M Factor for RP	For Maximum CV M Factor for RP	Receiving Water Concentration Avg (mg/l)	Max (mg/l)	Reasonable Potential Year/No	Max	Governing Criteria		
9	Acetone, Cyanide, Phenols																		
10	Antimony	0.0050	6.400E-01	0.4558	0.58	120	5.000E-01	1	0.000E+00	1.10	0.000E+00	0.000E+00	5.124E-01	5.800E-01	No	No			
11	Arsenic, total	0.0050	5.827E-04	0	0	1	5.827E-04	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
12	Baryllum	0.0010	1.500E-08	0	0	1	1.500E-08	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
13	Cadmium, total	0.0010	3.800E-04	0	0	1	3.800E-04	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
14	Chromium, total	0.0050	1.578E-02	0.66	0.95	1	1.578E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	3.100E-01	3.100E-01	No	No			
15	Chromium, hex	0.010	8.904E-03	0.63	0.1	120	0.000E+00	1	0.000E+00	1.30	0.000E+00	0.000E+00	3.900E-02	1.000E-01	Yes	Yes	AL		
16	Copper, total	0.0020	2.837E-09	0	0	1	2.837E-09	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
17	Lead	0.00000050	5.104E-05	0.0002	0.0002	1	0.000E+00	1	0.000E+00	6.20	0.000E+00	0.000E+00	1.240E-03	1.240E-03	Yes	No	HHC09		
18	Mercury	0.010	4.322E-02	0	0	1	4.322E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
19	Nickel	0.010	5.000E-02	0	0	1	5.000E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
20	Selenium	0.0050	5.000E-03	0	0	1	5.000E-03	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
21	Silver, total	0.0050	1.900E-04	0	0	1	1.900E-04	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
22	Thallium	0.0005	6.300E-03	0	0	1	6.300E-03	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
23	Zinc, total	0.010	2.531E-01	0.07975	0.195	120	0.000E+00	1	0.000E+00	1.10	0.000E+00	0.000E+00	3.443E-02	1.300E-01	No	Yes	AL		
24	Asbestos, total	0.010	5.200E-03	0	0	1	5.200E-03	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
25	Volatiles Organic Compounds																		
26	Acetone	0.0050	2.061E-03	0	0	1	2.061E-03	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
27	Acrylonitrile	0.0050	1.166E-03	0	0	1	1.166E-03	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
28	Benzene	0.0020	1.600E-01	0	0	1	1.600E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
29	Bromobenzene	0.0020	8.527E-01	0	0	1	8.527E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
30	Carbon Tetrachloride	0.0020	7.480E-02	0	0	1	7.480E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
31	Chlorobenzene	0.0020	7.578E-03	0	0	1	7.578E-03	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
32	Chloroethene	0.0020	8.051E-02	0	0	1	8.051E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
33	Chloroethane	0.0020	7.200E-00	0	0	1	7.200E-00	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
34	2-Chloroethyl vinyl ether	0.0020	3.800E-01	0	0	1	3.800E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
35	Chloroform	0.0020	7.900E-02	0	0	1	7.900E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
36	Dichlorobromomethane	0.0020	6.100E+00	0	0	1	6.100E+00	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
37	1,1-Dichloroethane	0.0020	1.725E-01	0	0	1	1.725E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
38	1,2-Dichloroethane	0.0020	3.500E-01	0	0	1	3.500E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
39	1,1-Dichloroethylene	0.0020	1.492E-02	0	0	1	1.492E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
40	1,2-Dichloroethylene	0.0020	6.993E-02	0	0	1	6.993E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
41	1,1-Dichloroethene	0.0020	1.818E-02	0	0	1	1.818E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
42	1,2-Dichloroethene	0.0020	9.887E-01	0	0	1	9.887E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
43	Ethylbenzene	0.0020	3.300E-01	0	0	1	3.300E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
44	Methyl bromide	0.0020	3.300E-01	0	0	1	3.300E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
45	Methyl chloride	0.0020	1.835E-02	0	0	1	1.835E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
46	Methylene chloride	0.0020	1.539E-02	0	0	1	1.539E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
47	1,1,2,2-Tetrachloroethane	0.0020	5.300E-01	0	0	1	5.300E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
48	Tetrachloroethylene	0.0020	5.300E-01	0	0	1	5.300E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
49	Toluene	0.0020	7.409E-02	0	0	1	7.409E-02	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
50	1,1,1-Trichloroethane	0.0020	1.999E-01	0	0	1	1.999E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
51	1,1,2-Trichloroethane	0.0020	1.999E-01	0	0	1	1.999E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
52	1,1,1-Trichloroethane	0.0020	1.999E-01	0	0	1	1.999E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
53	1,1,2-Trichloroethane	0.0020	1.999E-01	0	0	1	1.999E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			
54	Trichloroethylene	0.0020	1.999E-01	0	0	1	1.999E-01	1	0.000E+00	6.20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	No	No			

T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AK	AL
Proposed Sample Frequency	# of samples per month	CV	For HH & OL MDU/PABL	Multi. Factor for Daily Maximum	Limits (mg/l) Fresh Water		Max. Value based on only	Permit Limits (mg/l) Fresh Water		Concerning Criteria Fresh Water		Resp. Reference	Site Specific Limits Applied	
					Avg (mg/l) Based on Average Values (All)	Max (mg/l)		Avg (mg/l)	Max (mg/l)	Average	Maximum			
1														
2														
3														
4														
5														
6														
7	4	0.27	1.45											
8	1	0.6	1.46											
9	1	0.6	1.46											
10	1	0.6	1.46											
11	4	0.6	2.01											
12	4	0.7	2.16	N/A		1.167E-02		8.904E-03	1.167E-02	AL		P.61-68, Appendix	N/A	
13	1	0.6	1.46											
14	1	0.6	1.46											
15	1	0.6	1.46											
16	1	0.6	1.46											
17	1	0.6	1.46											
18	1	0.6	1.46	1.48		7.448E-05		5.100E-05	7.448E-05	HH-07p		P.61-68, Appendix	N/A	
19	1	0.6	1.46											
20	1	0.6	1.46											
21	1	0.6	1.46											
22	1	0.6	1.46											
23	1	0.6	1.46											
24	1	0.6	1.46											
25														
26														
27														
28	1	0.6	1.46											
29	1	0.6	1.46											
30	1	0.6	1.46											
31	1	0.6	1.46											
32	1	0.6	1.46											
33	1	0.6	1.46											
34	1	0.6	1.46											
35														
36	1	0.6	1.46											
37	1	0.6	1.46											
38	1	0.6	1.46											
39	1	0.6	1.46											
40	1	0.6	1.46											
41	1	0.6	1.46											
42	1	0.6	1.46											
43	1	0.6	1.46											
44	1	0.6	1.46											
45	1	0.6	1.46											
46	1	0.6	1.46											
47	1	0.6	1.46											
48	1	0.6	1.46											
49	1	0.6	1.46											
50	1	0.6	1.46											
51	1	0.6	1.46											
52	1	0.6	1.46											
53	1	0.6	1.46											
54	1	0.6	1.46											

A	B	C	D		E		F		G		H		I	J		K	L		M	N	O	P		Q		R	S
			Derived Limits (mg/l)	Fresh Water	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg (mg/l)	# of samp	Average	Max (mg/l)	# of sam		CV	M. Factor		For Maximum	CV				M. Factor	Yes/No	Avg	Max		
7	Parameter	PQL (mg/l)																									
8		0.0020																									
9	View chemicals																										
55																											
56	Acid Extractable Compounds																										
57	p-chloro-m-xresol	0.010	9.100E-04																								
58	2-Chlorophenol	0.010	4.662E-04																								
59	2,4-Dichlorophenol	0.010	1.369E-03																								
60	2,4-Dinitrophenol	0.010	6.424E-02																								
61	2,4-Dinitrophenol	0.010	6.970E-03																								
62	4,6-Dinitro-cresol	0.010	1.875E-02																								
63	2,4-Dinitrophenol	0.010	6.970E-03																								
64	2-Nitrophenol	0.010	2.500E-01																								
65	4-Nitrophenol	0.010	1.949E-02																								
66	Pentachlorophenol	0.010	3.102E-01																								
67	Phenol	0.010	9.324E-03																								
68	2,4,6-Trichlorophenol	0.010																									
69																											
70	Basic-Neutral Compounds																										
71	Acenaphthene	0.010	5.162E-02																								
72	Acenaphthylene	0.010	3.102E-04																								
73	Anthracene	0.010	2.300E-04																								
74	Benzo(a)pyrene	0.10	8.324E-07																								
75	Benzo(a)anthracene	0.010	8.392E-05																								
76	Benzo(b)pyrene	0.010	8.392E-05																								
77	3,4-benzofluoranthene	0.010	1.500E-04																								
78	Benzo(g)hioxanthene	0.010	8.392E-05																								
79	Benzo(k)fluoranthene	0.010	7.200E-03																								
80	Fluorene	0.010	2.471E-03																								
81	Benzo(e)fluoranthene	0.010	7.200E-03																								
82	Benzo(a)anthracene	0.010	1.026E-02																								
83	Benzo(b)fluoranthene	0.010	1.091E-02																								
84	4-Fluorophenyl ether	0.010	5.162E-02																								
85	Butyl benzyl phthalate	0.010	4.848E-02																								
86	2-Chloronaphthalene	0.010	1.091E-02																								
87	4-Chloronaphthalene	0.010	8.392E-05																								
88	Chrysene	0.010	2.212E-02																								
89	Dibenzyl phthalate	0.010	8.091E-04																								
90	Dimethyl phthalate	0.010	8.392E-05																								
91	Dibenzofluoranthene	0.010	3.394E-02																								
92	1,2-Dichlorobenzene	0.020	3.394E-02																								
93	1,3-Dichlorobenzene	0.020	3.394E-02																								
94	1,4-Dichlorobenzene	0.010	1.305E-04																								
95	3,3'-Dichlorobenzidine	0.010	1.600E-03																								
96	Diethyl phthalate	0.010	1.000E-03																								
97	Dimethyl phthalate	0.010	1.000E-02																								
98	2,6-Dinitrotoluene	0.010	1.000E-02																								
99	2,6-Dinitrotoluene	0.010	1.200E-01																								
100	Fluoranthene	0.010	5.300E-03																								
101	Fluorene	0.010	1.352E-06																								
102	Hexachlorobenzene	0.010	2.727E-03																								
103	Hexachlorobutadiene	0.010	2.121E-04																								
104	Hexachlorocyclopentadiene	0.010																									

7	8	9	T	U	V	W	X		Y		Z	AA	AB	AC	AD	AE	AF	AK	AL		
							Mult. Factor for Daily	Limit (mg/l)	Limit (mg/l)	Max. value based on AL											
Frequency	# of samples	CV	For HH & DL	MPH / max	1.46			Fresh Water	Max (mg/l)			Permit Limits (mg/l)	Fresh Water	Governing Criteria	Fresh Water	Reg. Performance		Site Specific Limits Applied			
55	1	0.6																			
56																					
57																					
58	1	0.6	1.46																		
59	1	0.6	1.46																		
60	1	0.6	1.46																		
61	1	0.6	1.46																		
62	1	0.6	1.46																		
63	1	0.6	1.46																		
64	1	0.6	1.46																		
65	1	0.6	1.46																		
66	1	0.6	1.46																		
67	1	0.6	1.46																		
68	1	0.6	1.46																		
69																					
70																					
71	1	0.6	1.46																		
72	1	0.6	1.46																		
73	1	0.6	1.46																		
74	1	0.6	1.46			2.00															
75	1	0.6	1.46																		
76	1	0.6	1.46																		
77	1	0.6	1.46																		
78	1	0.6	1.46																		
79	1	0.6	1.46																		
80	1	0.6	1.46																		
81	1	0.6	1.46																		
82	1	0.6	1.46																		
83	1	0.6	1.46																		
84	1	0.6	1.46																		
85	1	0.6	1.46																		
86	1	0.6	1.46																		
87	1	0.6	1.46																		
88	1	0.6	1.46																		
89	1	0.6	1.46																		
90	1	0.6	1.46																		
91	1	0.6	1.46																		
92	1	0.6	1.46																		
93	1	0.6	1.46																		
94	1	0.6	1.46																		
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97	1	0.6	1.46																		
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99	1	0.6	1.46																		
100	1	0.6	1.46																		
101	1	0.6	1.46																		
102	1	0.6	1.46																		
103	1	0.6	1.46																		
104	1	0.6	1.46																		

7	Proposed Sample Frequency	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AK	AL
B	# of samples	RV	MAINT. FACTOR	AVG (mg/l)	MAX (mg/l)	AL	AL	8.700E-02	1.740E-01	AL	AL	53 FR 33178, 8/30/88	53 FR 33178, 8/30/88		
105	1	0.6	1.46												
106	1	0.6	1.46												
107	1	0.6	1.46												
108	1	0.6	1.46												
109	1	0.6	1.46												
110	1	0.6	1.46												
111	1	0.6	1.46												
112	1	0.6	1.46												
113	1	0.6	1.46												
114	1	0.6	1.46												
115	1	0.6	1.46												
121	1	0.6	1.46												
122	1	0.6	1.46												
123	1	0.6	1.46												
124	1	0.6	1.46												
127	1	0.6	1.46												
129	1	0.6	1.46	2.00	1.740E-01			8.700E-02	1.740E-01	AL	AL	53 FR 33178, 8/30/88	53 FR 33178, 8/30/88		
132	1	0.6	1.46												
166	1	0.6	1.46												
167	1	0.6	1.46												
170	1	0.6	1.46												
172	1	0.6	1.46												
174	1	0.6	1.46												
188	1	0.6	1.46												
197	1	0.6	1.46												
206	1	0.6	1.46												
207	1	0.6	1.46												
208	1	0.6	1.46												
209	1	0.6	1.46												
210	1	0.6	1.46												
220	1	0.6	1.46												
221	1	0.6	1.46												
223	1	0.6	1.46												
226	1	0.6	1.46	1.46	1.460E-01			1.000E-01	1.460E-01	HH-Crg	HH-Crg	R.61-68, Appendix	R.61-68, Appendix		
244	1	0.6	1.46												
249	4	0.6	2.01												
253	1	0.6	1.46												



MEMORADUM

TO: File: Milliken/ Abbeville Plant SC0000353
Abbeville County, Blue Hill Creek

FROM: Sandy Benson

RE: Ammonia Evaluation

DATE: 5/18/05

The previous Tiers for Milliken/ Abbeville were

<u>Tier</u>	<u>Flow (mgd)</u>	<u>BOD₅ (lbs/d) Sum</u>	<u>BOD₅ (lbs/d) Win</u>
I	0.82	95	153
II	0.90	95	153
III	0.99	95	153
IV	1.085	95	153

The previous summer and winter DO model runs, Bluehill.sum and Bluehill.win respectively, were run at Tier IV flow (1.085 mgd) and BOD₅ loads (95 mg/L & 153 mg/L). Both runs are evaluated at the NH₃N equal to 0.17 mg/L, which is the long-term average (LTA) for the critical season in 1996 - 1997. Per Marshall Hyatt's (EPA Region 4) request, Erica Johnson sent these model runs to EPA in March 2005. In April 2005, Melinda Vickers requested evaluations for the ammonia tox values and the limiting ammonia at 3 new tiered flows: 0.551 mgd, 0.744, and 0.82 with the same BOD₅ loads previously given (see attached email). Per conversation with Marshall on May 13, 2005, it was clarified that the DO models would need to be run at both the LTA and tox values for ammonia. The LTA was determined to be 0.19 mg/L for the summer and 0.43 mg/L for the winter (DMR data 2004-2005). The ammonia tox values provided by Melinda are:

<u>Tier</u>	<u>Flow (mgd)</u>	<u>NH₃N Tox (mg/L) Sum</u>	<u>NH₃N Tox (mg/L) Win</u>
I	0.551	2.20	4.65
II	0.744	2.12	4.47
III	0.82	2.10	4.42

The following tables contain the results from the DO model runs evaluated at the new tiered flows and at both ammonia concentrations for both seasons. The first table displays the results from the model runs with the ammonia at the long-term average. The second table shows the outcomes with the ammonia set at the tox value. The data below shows that the DO standard of 5.0 mg/L would not be met if Milliken were given their current BOD₅ limits at the lower tiered flow.

NH₃N = LTA (0.19 mg/L critical & 0.43 mg/L seasonal)

	Critical			Seasonal		
	BOD ₅	UOD _T	DO Sag	BOD ₅	UOD _T	DO Sag
Tier I	95	289	3.82	153	468	4.32
Tier II	95	290	4.65	153	471	5.23
Tier III	95	291	4.65	153	472	5.41

NH₃N = TOX

	Critical			Seasonal		
	BOD ₅	UOD _T	DO Sag	BOD ₅	UOD _T	DO Sag
Tier I	95	331	3.40	153	557	3.84
Tier II	95	345	4.20	153	586	4.79
Tier III	95	351	4.43	153	597	5.04

The DO models were rerun to determine the acceptable BOD₅ loading using both the LTA for ammonia and the tox values. The tables below contain the outcomes of these DO model runs. The first table shows the determined acceptable loading at the new flows. The second table shows the impact of higher levels of ammonia.

NH₃N = LTA (0.19 mg/L critical & 0.43 mg/L seasonal)

	Critical			Seasonal		
	BOD ₅	UOD _T	DO Sag	BOD ₅	UOD _T	DO Sag
Tier I	64	196	5.03	130	397	5.01
Tier II	83	255	5.01	164	504	5.01
Tier III	90	276	5.01	178	548	5.00

NH₃N = TOX

	Critical			Seasonal		
	BOD ₅	UOD _T	DO Sag	BOD ₅	UOD _T	DO Sag
Tier I	53	205	5.00	113	437	5.00
Tier II	65	255	5.00	143	556	5.01
Tier III	71	279	5.00	155	603	5.00

The DO models were run at both ammonia numbers to determine the impact on BOD by including the ammonia tox values in the models. This data shows that available BOD₅/ UOD is less at lower flows and a change in the mix of BOD₅ and ammonia, i.e. more ammonia, less allowable BOD₅. Since the allowable BOD₅ is essentially the same for each individual tier, regardless of the mix of BOD₅ to NH₃N, a UOD (which would be limiting) along with the ammonia tox value and a reasonable BOD₅ limit would be acceptable. This would provide the permittee maximum flexibility in meeting the required UOD limit. A CD containing this memo and the model runs was sent to Marshall as well.



October 12, 2005

Mr. Marshall Hyatt
 Environmental Scientist
 NPDES and Biosolids Permits Section
 Permits, Grants, and Technical Assistance Branch
 Water Management Division
 US EPA, Region 4
 Atlanta Federal Center
 61 Forsyth Street
 Atlanta, GA 30303-8960

**RE: Comments on Draft Permit Dated 9/15/05
 Milliken & Company / Abbeville Plant
 NPDES Permit Number SC0000353
 Abbeville County, South Carolina**

Dear Mr. Hyatt:

Milliken & Company ("Milliken") has received and reviewed the draft NPDES Permit for the Abbeville Plant dated September 15, 2005. We have the following comments and requests regarding the draft:

1. Milliken objects to the Agency's application of the May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation as a basis to set the BOD and UOD limitations in the draft permit. Although we understand the need to protect the stream dissolved oxygen, we believe that directly applying the results of this model are inappropriate due to the highly conservative nature of model inputs. Milliken has reviewed the model, and though there are no obvious technical errors to our knowledge, it is apparent that the input values in the model are a compounded series of conservative assumptions that are consequently overprotective. These conservative assumptions, which result in a significant 33% reduction in Abbeville's BOD Tier I limitations, include using 7Q10 low-flow conditions as stream flows, using minimum effluent dissolved oxygen limits as effluent DO initial conditions, and using monthly average maximum limits for several parameter initial conditions. There is an extremely small likelihood that all of these statistically unlikely conditions will occur at any one time, and Milliken believes that the Agency and DHEC should use a more realistic basis for protecting the dissolved oxygen in the stream. Additionally, Milliken expects that any stream flow model which has such a significant impact on permit conditions be verified and calibrated, and we currently do not know if the DHEC evaluation meets either criterion. Therefore, Milliken requests that the Agency either remove the requirements derived from the May 18, 2005 DHEC ammonia and UOD evaluation or modify these requirements based on a more realistic, verified, and calibrated model.

Milliken & Company, P. O. Box 1926, Spartanburg, S.C. 29304-1926
 Telephone: (864) 503-2020



2. The draft permit contains a limitation on acute whole effluent toxicity based on percent mortality in 48-hours at 100% effluent. However, the Abbeville Plant has no history of acute test results of this type, and consequently, Milliken has no information available to determine whether the plant can meet the proposed limits. Milliken requests that the Agency include an appropriate period (at least one year) of monitoring and reporting in the permit to allow the Agency and Milliken to determine if the effluent has reasonable potential for exceedance of an acute toxicity water quality criterion. Subsequently, we request that the permit include a schedule of compliance, beginning after the monitoring and reporting period, which will allow Milliken to take the appropriate actions, if necessary, to comply with any proposed limitations before they go into effect. We would prefer that this schedule of compliance be coordinated as much as possible with the schedule of compliance already present in the draft permit, so Milliken can subsequently coordinate the appropriate compliance actions.

3. Milliken believes Whole Effluent Toxicity ("WET") tests, in theory, can be useful screening tools when used, for example, on a "monitor and report" basis to indicate the possible recurring presence of toxicants in wastewater. However, Milliken believes the WET tests proposed by the Agency in Parts I and IV of the draft permit are unsuited and improper in the role they have been assigned in Abbeville's proposed NPDES Permit – that of a compliance tool based on the results of a single test. The specific points of our objection have been organized below in the form of short topics, rather than a lengthy discourse. These topics are intended only to identify and explain briefly a specific issue or problem that, for Milliken, makes the introduction of the currently proposed WET-based limits at Abbeville Plant undesirable. Milliken hereby reserves the right to make available to the Agency related comments and additional data and information in form of regulatory guidance documents, scientific literature, legal precedent, and the like that supplement and support those topics. Solely for the convenience of the Agency, these topics have been arranged under the general headings below.

Objections to WET Testing as a Scientific Method

- To Milliken's knowledge, the test used by the Agency has not been scientifically validated for use as an indicator of chronic toxicity by the EPA or SC DHEC.

- The test does not account for known sources of interference that can and do lead to spurious results, for example, pH drift/shock, hardness, ion imbalances, and the growth of algae in the container used to expose the test species to the effluent.

- The test has an unavoidable, inherent "Type 1" error rate due to having defined confidence limits (i.e., one is nearly certain to have a "false" positive after a given number of tests).

- The test cannot account for unpredictable variations that are known to exist among test results from different testing laboratories.

- A method detection level (MDL) or its functional equivalent for the proposed WET test (to quantitatively account for inherent variability) has not been developed.



Objections to WET Testing as Used by the Agency as a Regulatory Instrument

- The Agency has not established a predictive relationship between chronic wet effluent toxicity laboratory results and actual in-stream effects. The Agency must establish an appropriate frequency, duration, magnitude translator that relates laboratory endpoints to the true stream condition. ←
- The test, as implemented by the Agency, fails to meet EPA's robustness criteria (e.g., precision, accuracy, reproducibility, representativeness, detection limits, interferences, etc.) as described in EPA's 304H Report to Congress on the Adequacy of Methods.
- *Ceriodaphnia Dubia*, one of the indicator species chosen by the Agency from several available alternative species, is not indigenous to South Carolina streams, which calls into question the relevance of this test and the basis upon which test results can be expected to predict actual receiving stream health. Independent of this issue, Milliken believes the Agency has neither determined nor documented the degree to which effluent chronic reproductive toxicity test results can be shown to be a measure or predictor of receiving stream health. ←
- The Agency has never attempted to create an "impaired" versus "attained" stream standard, thereby making it impossible to determine when, or under what conditions, an effluent discharge can be considered "impairing" a stream for regulatory purposes. Even if such standard existed, there is little or no relevant, credible data showing that chronic reproductive toxicity testing is a reliable indicator of stream impairment.
- The SC laboratory certification program, upon which the WET program is dependent, is flawed. When laboratory performance is monitored through the use of Quality Assurance "check" samples, the statistical standards for acceptable laboratory performance are significantly less stringent than the permit compliance standards to which permittees are held when submitting actual effluent samples to those same laboratories for compliance testing. Furthermore, Milliken is unaware of any documented corrective action measures or objective de-certification guidelines for poor laboratory performance.
- The inherent inaccuracy and lack of precision associated with WET testing, and particularly chronic reproductive toxicity testing, is in clear conflict with the DMR certification requirement that all reported data are "...true, accurate, and complete."

Objections to WET Testing as Used by the Agency in an Enforcement Context

- By its nature, the chronic test inherently lacks both the accuracy (inability to measure the absence of toxicity) and the precision (inability to offer consistently repeatable results) to serve as a permit limit, particularly one based on the results of a single test that ignores statistical error bands.
- The test cannot be used reliably to confirm the absence of toxicity – which is precisely the purpose to which the Agency has put this test in this permit. When required to identify water containing no toxicants (e.g., a laboratory method blank), the test is incapable of producing results that are both consistent and correct.



- The test was neither developed nor recommended for use as an enforcement tool in connection with a policy in which a single failure is considered a violation of permit limits. ←
- There are no current federal or state requirements or regulations that mandate the use of numeric criteria for toxicity.
- The association between WET testing results in general and stream impairment is strained, at best. Milliken believes the association between a single failure of a chronic WET test and stream impairment is so attenuated as to be non-existent. In short: there is no scientific support for assuming that a single chronic WET test failure implies stream impairment, and no scientific support for assuming that multiple chronic WET test failures necessarily imply stream impairment (yet either will result in a permit violation).
- There is no association between a single failure (or a multiple failure) of the WET test and the narrative standard under S.C Regs. 61-68.

Objections to WET Testing as Applied Specifically to Abbeville Plant

- The test presumes that water quality is the limiting factor in determining receiving stream health, and does not account for habitat limitations. High water quality in an otherwise limited biological habitat will neither produce nor support a flourishing ecosystem. ←
4. Milliken objects to the Agency's inclusion of macroinvertebrate assessment requirements in Part III. D of the draft permit. A copy of a macroinvertebrate assessment performed on Blue Hill Creek by Shealy Environmental in April of 1997 was previously submitted to the Agency. A copy of a macroinvertebrate assessment performed on Blue Hill Creek by SC DHEC on November 29, 2000 is enclosed with these comments. The results of both assessments indicate that the discharge from the Abbeville plant has little, if any, discernible impact on the macroinvertebrate community of Blue Hill Creek. Since the results of these studies show little or no impact and the nature of Abbeville's effluent has not significantly changed, there is no expected benefit to performing additional macroinvertebrate studies as required in Part III.D of the draft permit. We do not expect that the potentially expensive macroinvertebrate assessment schedule required in the permit will provide any significant information to the Agency that has not been provided in these reports. We request that the Agency review the previously submitted and enclosed macroinvertebrate studies and modify the permit to eliminate the assessments required. If the Agency must keep the assessments in the permit, we strongly request that the permit include language that would allow the assessments to end after a reasonable number of additional satisfactory results.
 5. The measurement frequencies for color in the receiving stream have been changed to once per week in the revised draft permit. Milliken appreciates these modifications. However, Milliken strongly objects to the measurement frequency of three samples per week for effluent color. We anticipate that this frequency will still impose a significant burden upon our water quality laboratory due to the nature of the analysis. (5 color samples/week x 2 types of color measurement/sample x 2 pH levels/sample = 20 readings per week.) As stated



in our previous comments and based on past effluent color results, Milliken does not believe that there is sufficient variation in the effluent color from day to day to justify the expense and burden of sampling it three times a week. One effluent color sample per week should be more than suitable to characterize the nature of the stream, which we understand to be the purpose of this sampling requirement. Accordingly, Milliken requests that the Agency reduce the sampling frequency for color at the effluent to once per week. Milliken has many years of effluent color data available, and would be happy to share this information with the Agency if it would help reduce the proposed effluent color sampling frequency.

6. Milliken & Company feels it is appropriate to document its objections in these comments to the potential use of color data collected under this permit in developing future numerical limits for the color by the Agency or SC DHEC. Studies clearly illustrate that many factors affect human perception of color. They further show there is a high degree of subjectivity involved when aesthetic values are based on visual observations, and indicate that a multitude of factors should be considered in establishing any protocol for color impact evaluation. Neither the Agency nor the State of South Carolina has a duly promulgated standard for color, and currently lacks any scientific basis for establishing such a standard.

Color can be defined as the sensory perception of electromagnetic radiation of a particular wavelength incident on the nerves of the eye. Unless it hinders light penetration into the water column, color changes in natural streams caused by wastewater discharges are considered strictly aesthetic considerations, as presently reflected in the applicable South Carolina water regulations [Section E (5) (C), S.C. Code Ann. R-61-68].

Water may appear colored because of the presence of dissolved matter that absorbs incident light ("true" color), or because of the presence of suspended particles that scatter incident light ("apparent" color). True color can only be measured in water from which turbidity and suspended solids have been removed. Apparent color includes color due to dissolved substances and suspended particles. It is "Apparent" color that is often a closer approximation of what people actually perceive and evaluate as aesthetically attractive or unattractive, and would therefore more closely conform to South Carolina's existing narrative regulations on this subject.

Little basic research has been performed on human perception of color in wastewater effluent and its impact on the aesthetic value of a receiving stream. A fundamental problem is an inability to specify color characteristics using definite values that accurately correlate to the color sensations and aesthetic reactions experienced by persons viewing the water.¹

A number of studies have measured perception of water quality to determine the types and relative weightings of different subjective criteria used by members of the public to determine the degree of water pollution. Generally, these studies have shown that a limited number of criteria are used to describe water quality in a natural setting: the presence of fish, algae and water plants, perceived color, odor, and the presence of floating debris. The relative importance of the individual criterion varies, however, according to whether the site is a lake, bay or river.²

¹ See, Rudolph, W. and W. D. Hanlon, "Color in Industrial Wastes," 23 Sewage Ind. Wastes 1125 (1951).

² See Moser, G., "Water Quality Perception, a Dynamic Evaluation," Journal of Environmental Psychology, 20-210 (1984); Coughlin, R. B., "The Perception and Valuation of Water Quality: A Review of Research Methods and Findings," Perceiving Environmental Quality" K. H. Craik and E. H.



One study (Prestrude and Laws, 1988), conducted to determine acceptable levels of color as rated by ordinary observers, concluded that, in clear containers under laboratory conditions, color concentrations as low as 30 to 50 Color Units were considered unattractive. However, background and context features were found to play a major role in color perception. In natural settings, color concentrations above 100 Color Units were sometimes deemed not only acceptable, but attractive, confirming the major effect environmental setting has on aesthetic evaluations.

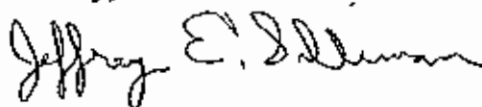
These studies clearly illustrate that many factors affect human perception of color. They further show the subjectivity involved when aesthetic values are based on visual observations, and indicate that a multitude of factors should be considered in establishing any protocol for color impact evaluation.

7. Milliken respectfully objects to the inclusion of mercury limitations in the draft permit. Mercury is not used in the process chemicals at the Abbeville plant, and is not expected to be present in the effluent. Enclosed is the second of two low-level mercury analyses that we believe will demonstrate no reasonable potential. The first was sent to the Agency by e-mail on September 2, 2005. Milliken requests that, upon review of the low-level mercury analyses, the mercury limitations be removed from the permit.

8. Milliken appreciates that the Agency has included a mechanism for treating submitted production information as Confidential Business Information in Part I-10 of the draft permit. However, Milliken still strongly prefers not to submit our confidential production information to parties outside the company unless it is absolutely necessary for compliance. We respectfully assert that sufficient information will be provided to the Agency about the Abbeville Plant's production range through the certification of the appropriate tier and the corresponding limits. Consequently, reporting of the actual production level is redundant and unnecessary. As an alternative to submission of this information, Milliken requests the permit be revised to require the plant to keep these records on-site for an appropriate period of time and to make them available for the Agency's inspection upon request.

If you have any questions or need any additional information, please contact me at (864) 503-1844.

Sincerely,



Jeffrey E. Silliman
Corporate Environmental Manager

CC: Mr. Marion Sadler, SCDHEC, Bureau of Water

Zube (eds.) (New York 1976); David, E. I. "Public Perception of Water Quality," *Water Resources* 453-457 (1971); Ditton, R. B. and T. L. Goodale, "Water Quality Perception and Recreational Users of Greenby Lake Michigan," *Water Resources* 569-570 (1973); Kooyoompan, J. K. and N. L. Ciesceni, "Perception of Water Quality by Select Respondent Groupings in Inland Water-Based Recreational Environments," *Water Resources Bulletin*, August 10, (1974). Similar studies have also been carried out by the National Commission on Water Quality and the Environmental Protection Agency.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

ATLANTA FEDERAL CENTER

61 FORSYTH STREET

ATLANTA, GEORGIA 30303-8960

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

SEP 15 2005

Dr. Jeffrey E. Silliman, Corporate Environmental Manager
Milliken and Company
P.O. Box 1926, M-482
Spartanburg, SC 29304

RE: Public Notice of NPDES No. SC0000353
Milliken Abbeville Facility

Dear Dr. Silliman:

In accordance with Title 40, Code of Federal Regulations (C.F.R.) Section 124.10(c)(1)(i), enclosed is the Public Notice which the Environmental Protection Agency (EPA) has distributed pertaining to the EPA's tentative decision on your National Pollutant Discharge Elimination System (NPDES) permit application. All comments and objections to the draft permit must be submitted to EPA within the time period specified in the Public Notice. Only issues raised during this time period will be considered during any appeal procedures. Per 40 C.F.R. Section 124.76, at the time of final permit decision, only issues raised during the public comment period by any party may be used to support an evidentiary hearing request.

The draft permit and supporting materials were previously sent to you by letter dated July 1, 2005. The draft permit referred to in the Public Notice has been changed since the previous draft permit. The revised draft permit and supporting materials are enclosed. State certification has been requested for this permit and any more stringent requirements received from the State will be incorporated into the final permit without prior review by the applicant.

If you have any questions concerning this matter, please contact me at the above address or by calling (404) 562-9304.

Sincerely,

Marshall Hyatt
Environmental Scientist
NPDES and Biosolids Permits Section
Permits, Grants and Technical Assistance Branch
Water Management Division

- Enclosures (3):1. Public Notice (PN)
2. Revised Draft Permit
3. Revised Fact Sheet

Internet Address (URL) • <http://www.epa.gov>

PUBLIC NOTICE

**U.S. Environmental Protection Agency
Region 4
Water Management Division
Permits, Grants, and Technical Assistance Branch
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960
(404) 562-9288**

Public Notice No. 05SC0003

Date: September 15, 2005

**NOTICE OF PROPOSED REISSUANCE OF
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMITS**

The U.S. Environmental Protection Agency (EPA) intends to reissue National Pollutant Discharge Elimination System (NPDES) permits to the following facility:

Milliken and Company, P. O. Box 1926, M-482, Spartanburg, South Carolina, 29304. The applicant has applied for reissuance of NPDES No. SC0000353 for its Abbeville facility, located at 601 Brooks Street, Abbeville, Abbeville County, South Carolina. The facility does dyeing and finishing of woven fabrics from synthetic fibers and package dyeing of synthetic fibers. The draft permit authorizes one discharge of process wastewater, utility water, and stormwater (SIC Code 2269) through Outfall 001 to Blue Hill Creek.

Unless otherwise noted, the above listed facility discharges into receiving streams that are classified as freshwaters, suitable for primary and secondary contact recreation, as a source for drinking water supply after conventional treatment, fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora, and for industrial and agricultural uses.

Persons wishing to comment upon or object to any aspects of any permit reissuance or wishing to request a public hearing, are invited to submit the same in writing within thirty (30) days of this notice to the NPDES Permits Section, Water Management Division, Environmental Protection Agency, 61 Forsyth Street, S.W., Atlanta, Georgia 30303-8960, ATTENTION: Ms. Ann Brown, Public Notice Coordinator. Pursuant to 40 CFR Section 124.13, any person who believes that any proposed permit condition is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments in full, supporting his/her position, by the close of the comment period. The public notice number and NPDES number should be included in the first page of comments.

All comments received within the 30-day period will be considered in the formulation of a final determination regarding the specific permit reissuance. Also, within the 30-day period, any interested person may request a public hearing. Where there is a significant degree of public interest in a proposed permit reissuance, the EPA Regional Administrator will schedule and hold a public hearing which would be formally announced in accordance with 40 CFR Section 124.10 and Section 124.12.

After consideration of all written comments and the requirements and policies in the Act and appropriate regulations, the EPA Regional Administrator will make a determination regarding each permit reissuance. If the determination is substantially unchanged from that announced by this notice, the EPA Regional Administrator will so notify all persons submitting written comments. If the determination is substantially changed, the EPA Regional Administrator will issue a public notice indicating the revised determination. Appeal of NPDES permits may be filed after the Regional Administrator makes the above-described determination. Additional information regarding appeal of NPDES permits is available in 40 CFR Section 124.19, or by contacting Philip Mancusi-Ungaro of the Environmental Accountability Division at the address above or at (404) 562-9519.

The administrative record, including fact sheet, draft permit, comments received, and additional information on hearing procedures is available at cost by writing the EPA address above, or for review and copying at 61 Forsyth Street, S.W., 15th floor, Atlanta, Georgia, between the hours of 8:15 a.m. and 4:30 p.m., Monday through Friday. Copies will be provided at a minimal cost per page.

Please bring the foregoing to the attention of persons whom you know will be interested in this matter. If you would like to be added to our public notice mailing list, submit your name and mailing address to EPA's address given above.

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Permit No. SC0000353
Major Industrial

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), the

Milliken and Company
Post Office Box 1926, M-482
Spartanburg, South Carolina 29304

is authorized to discharge from a facility located at

Abbeville Facility
601 Brooks Street
Abbeville, Abbeville County, SC 29620

to receiving waters named

Outfall 001: Blue Hill Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. The permit consists of this cover sheet, Part I 13 pages, Part II 17 pages, Part III 7 pages, and Part IV 3 pages.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight,

DRAFT

Date Issued

James D. Giattina, Director
Water Management Division

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM LIMITS - TIER 1 PRODUCTION

1. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS			
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE	
Flow, MGD	Report	Report	Effluent	Daily	Continuous	
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (64)	Report	Effluent	1/week	24-hour Composite	
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (130)	Report (260)	Effluent	1/week	24-hour Composite	
Total Suspended Solids (TSS), lbs/day	478.4	956.9	Effluent	1/week	24-hour Composite	
Chemical Oxygen Demand, lbs/day	2533	5067	Effluent	1/week	24-hour Composite	
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab	
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab	
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite	
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous	
Total Sulfide, lbs/day	5.2	10.3	Effluent	1/week	24-hour Composite	
Total Phenols, lbs/day	2.6	5.2	Effluent	1/week	Grab	
Total Chromium, lbs/day	2.6	5.2	Effluent	1/year	24-hour Composite	
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	—	< 50% mortality in 100% effluent	Effluent		See Part IV	

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM LIMITS - TIER 1 PRODUCTION - CONTINUED

1. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(s)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	--	See Item I.A.13	--	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	DRINKABLE	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	3 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	See Item I.A.15	See Item I.A.15	Effluent	See Item I.A.15	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	See Item I.A.16	See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Recoverable Mercury, ng/l	---	Report	Effluent	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Upstream of Discharge	See Item I.A.18	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	196	392	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	397	794	Effluent	1/week	Calculated

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 1 PRODUCTION

2. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
	MONTHLY AVERAGE	DAILY MAXIMUM			
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (64)	Report (128)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (130)	DRIFT	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	478.4	956.9	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	2533	5067	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	5.2	10.3	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	2.6	5.2	Effluent	1/week	Grab
Total Chromium, lbs/day	2.6	5.2	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	< 50% mortality in 100% effluent		Effluent	See Part IV	

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 1 PRODUCTION - CONTINUED

2. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	---	See Item I.A.13	---	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	DEBATABLE I.A.13	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	3 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.15	Report See Item I.A.15	Effluent	See Item I.A.15	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.16	Report See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Recoverable Mercury, ng/l	---	Report	Effluent	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Upstream of Discharge	See Item I.A.18	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	196	392	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	397	794	Effluent	1/week	Calculated

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 2 PRODUCTION

3. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (83)	Report (166)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (164)	DISAFT (328)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	570.1	1140.3	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	3038	6076	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH, standard units (SU)		6.0 - 8.5	Effluent	Daily	Continuous
Total Sulfide, lbs/day	6.2	12.4	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	3.1	6.2	Effluent	1/week	Grab
Total Chromium, lbs/day	3.1	6.2	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	--	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 2 PRODUCTION - CONTINUED

3. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(S)	MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM		MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	---	See Item I.A.13	---	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	DRINKING WATER	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	3 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.15	Report See Item I.A.15	Effluent	See Item I.A.15	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.16	Report See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Recoverable Mercury, ng/l	---	Report	Effluent	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Upstream of Discharge	See Item I.A.18	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March=October)	255	510	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November=February)	504	1008	Effluent	1/week	Calculated

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 3 PRODUCTION

4. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(s)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow, MGD	Report	Report	Effluent	Daily	Continuous
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March - October)	Report (90)	Report (180)	Effluent	1/week	24-hour Composite
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (November - February)	Report (178)	DISINFECTANT (336)	Effluent	1/week	24-hour Composite
Total Suspended Solids (TSS), lbs/day	650.2	1300.5	Effluent	1/week	24-hour Composite
Chemical Oxygen Demand, lbs/day	3479	6958	Effluent	1/week	24-hour Composite
Dissolved Oxygen (DO) (March - October)	shall not be less than 6.0 mg/l		Effluent	Daily	Grab
Dissolved Oxygen (DO) (November - February)	shall not be less than 5.0 mg/l		Effluent	Daily	Grab
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)	Effluent	1/week	24-hour Composite
pH, standard units (SU)	6.0 - 8.5		Effluent	Daily	Continuous
Total Sulfide, lbs/day	7.1	14.2	Effluent	1/week	24-hour Composite
Total Phenols, lbs/day	3.5	7.1	Effluent	1/week	Grab
Total Chromium, lbs/day	3.5	7.1	Effluent	1/year	24-hour Composite
Acute Whole Effluent Toxicity, % mortality at 48 hrs.	---	< 50% mortality in 100% effluent	Effluent		See Part IV

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS - TIER 3 PRODUCTION - CONTINUED

4. During the period beginning on the permit effective date and lasting through the permit expiration date, or the month in which an alternate Tier Production phase begins, whichever is earlier, the permittee is authorized to discharge from ourfall Serial Number 001; process wastewater, utility water, and stormwater. [See Part I.A.10, page I-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		SAMPLING POINT(S)	MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	DAILY MAXIMUM		MEASUREMENT FREQUENCY	SAMPLE TYPE
Temperature, °C.	See Item I.A.13	See Item I.A.13	Upstream of discharge	See Item I.A.13	Grab
Temperature, °C.	See Item I.A.13	See Item I.A.13	Downstream of discharge	See Item I.A.13	Grab
Temperature, °C. (Downstream - Upstream)	---	DRAME	---	See Item I.A.13	Calculated
Temperature, °C.	See Item I.A.13	See Item I.A.13	Effluent	1/week	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Upstream of discharge	See Item I.A.14	Grab
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Downstream of discharge	See Item I.A.14	Grab
Color, ADMI (Downstream - Upstream) for apparent and true color	---	See Item I.A.14	---	See Item I.A.14	Calculated
Color, ADMI (apparent and true color)	See Item I.A.14	See Item I.A.14	Effluent	3 days/week	Grab
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report See Item I.A.15	Report See Item I.A.15	Effluent	See Item I.A.15	Grab
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report See Item I.A.16	Report See Item I.A.16	Effluent	See Item I.A.16	Grab
Total Recoverable Mercury, ng/l	---	Report	Effluent	See Item I.A.17	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Upstream of Discharge	See Item I.A.18	Grab
Total Hardness, mg/l as CaCO ₃	See Item I.A.18	See Item I.A.18	Effluent	1/week	Grab
Ultimate Oxygen Demand, lbs/day (March-October)	276	552	Effluent	1/week	Calculated
Ultimate Oxygen Demand, lbs/day (November-February)	548	1096	Effluent	1/week	Calculated

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM LIMITS

i. During the period beginning on the permit effective date and lasting until twenty-one months from the permit effective date, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater.

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Chronic Whole Effluent Toxicity, IC ₅₀	Report	---	Effluent	See Part IV	See Part IV
Total Recoverable Copper, mg/l	Report	---	Effluent	1/week	24 hour composite

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - FINAL LIMITS

i. During the period beginning twenty-one months from the permit effective date and lasting until permit expiration, the permittee is authorized to discharge from outfall Serial Number 001: process wastewater, utility water, and stormwater. [See Part I.A.10, page 1-10]

Such discharges shall be limited and monitored by the permittee as specified below:

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	MONTHLY AVERAGE	DAILY MAXIMUM	SAMPLING POINT(S)	MEASUREMENT FREQUENCY	SAMPLE TYPE
Chronic Whole Effluent Toxicity, IC ₅₀ - Tier 1	> 85%	---	Effluent	See Part IV	See Part IV
Chronic Whole Effluent Toxicity, IC ₅₀ - Tier 2	> 88%	---	Effluent	See Part IV	See Part IV
Chronic Whole Effluent Toxicity, IC ₅₀ - Tier 3	> 89%	---	Effluent	See Part IV	See Part IV
Total Recoverable Copper, mg/l - Tier 1	0.010	0.012	Effluent	1/week	24 hour composite
Total Recoverable Copper, mg/l - Tier 2	0.010	0.012	Effluent	1/week	24 hour composite
Total Recoverable Copper, mg/l - Tier 3	0.010	0.012	Effluent	1/week	24 hour composite

7. All correspondence (including any report, notice, request for determination, etc.) that is required to be submitted to the Environmental Protection Agency (EPA) shall also be submitted to the South Carolina Department of Health and Environmental Control (DHEC) at the address specified in Part III, Section A. of this permit.
8. Samples taken in compliance with the monitoring requirements specified in this permit shall be taken at the nearest accessible point after final treatment but prior to the actual discharge or mixing with the receiving waters (unless otherwise specified).
9. There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the effluent cause a visible sheen on the receiving water.
10. Tier 1 is represented by a production level of 51,700 lbs/day; Tier 2 is represented by a production level of 62,000 lbs/day, and Tier 3 is represented by a production level of 71,000 lbs/day. Tier 1 production-based limits shall apply upon the effective date of this permit. Based on 40 Code of Federal Regulations (C.F.R.) Section 122.45(b)(2)(ii)(B), if the permittee wishes for Tier 2 or Tier 3 production-based limits to subsequently apply after November 30, 2006, the permitting authority shall be notified in writing a minimum of seven business days prior to a month in which the permittee expects to operate at that Tier. If any notification of increased production covers a period of more than one month, it shall specify the reasons for the anticipated production level increase. New notification of discharge at any subsequent Tier is required to cover a period of production not covered by prior notice or, if during two consecutive months otherwise covered by a notice, the production level at the facility does not in fact meet the higher level designated in the notice. Any notification shall include: a) the anticipated Tier to be applicable, and b) the period during which the permittee expects to operate at the anticipated Tier. For any notification, the permittee shall comply with the lower of the Tier corresponding to actual production during each month or the Tier specified in the notification. The permittee shall submit the level of production that actually occurred during each month and the corresponding Tier and the limitations applicable to that Tier as an attachment to each Discharge Monitoring Report (DMR) (EPA Form No. 3320-1). The level of production reported on the attachment may be claimed as Confidential Business Information.
11. Where a permittee continuously measures the pH of wastewater pursuant to a requirement or option in a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402(o) of the Clean Water Act (CWA or the Act), the permittee shall maintain the pH of such wastewater within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:
 - a. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and
 - b. No individual excursion from the range of pH values shall exceed 60 minutes.

For purposes of this section, an excursion is an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in the applicable effluent limitations guidelines. (Secs. 301, 304, 306, and 501 of the Act (the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et. seq., as amended by the CWA of 1977, Pub. L. 95-217)) The permittee shall report the date, time, and length (minutes) of any excursion as an attachment to the DMR Form.

12. Discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to any waste stream which may ultimately be released to lakes, rivers, streams, or other waters of the United States is prohibited unless specifically authorized elsewhere in this permit. The permittee shall notify the Director in writing at least 30 days prior to planned use and discharge of any chemical not previously reported to the Director, other than chlorine or other products previously evaluated by EPA-Headquarters Office of Science and Technology, Engineering and Analysis Branch, that is to be used and that may be toxic to aquatic life.

Such notification shall include:

- a. Name and general composition of the chemical;
- b. Frequencies of use;
- c. Quantities to be used;
- d. Proposed discharge concentrations;
- e. Any acute and chronic toxicity data for any available aquatic species (Laboratory reports shall be prepared according to Section 12 of EPA document no. EPA/821-R-02-012 entitled, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms* (2002), or the most current edition.);
- f. Product data sheet; and
- g. Product label.

Discharge of materials subject to this part is prohibited prior to approval by EPA.

13. Effluent, upstream, and downstream temperatures shall be sampled as close together in time as possible. The upstream sample point shall be the closest point upstream of the discharge that is not influenced or affected by the discharge. The downstream sample point shall be the closest point downstream of the discharge after complete mixing with the receiving stream. A description of the upstream and downstream sampling location shall be provided to the permitting authority for review within thirty days of permit issuance. All individual temperature values shall be reported as an attachment to the DMR Form. For each sampling, the upstream value shall be subtracted from the downstream value and each difference shall also be reported as an attachment to the DMR Form. Upstream and downstream temperature monitoring shall be conducted once/week for one year after the permit effective date.

14. Effluent, upstream, and downstream color shall be sampled as close together in time as possible at the same sampling locations used in Item I.A.13 above. Monthly average and daily maximum results shall be reported as both apparent and true color on the DMR Form. All individual apparent and true color values shall also be reported as an attachment to the DMR Form. For each sampling, the upstream apparent and true color values shall be subtracted from the corresponding downstream values and the difference for each shall also be reported as an attachment to the DMR Form. Upstream and downstream color sampling shall only be conducted once/week during the first full April-October period that occurs after the permit effective date.

15. Anionic Surfactants as MBAS shall be calculated as:

$$\text{mg MBAS/L} = \frac{\text{ug apparent LAS}}{\text{ml of original sample}}, \text{ where LAS} = \text{Linear alkylbenzene sulfonate}$$

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Report on the DMR Form as "MBAS, calculated as LAS, molecular wt._____. Monitoring shall be conducted by Method 5540 C, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. For the first six months after the permit effective date, monitoring shall be conducted once/week. Thereafter, monitoring shall be conducted once/month.

16. Nonionic Surfactants as CTAS shall be calculated as:

$$\text{mg CTAS/l} = \text{mg apparent nonionic/L sample}$$

Report on the DMR Form as "CTAS, calculated as nonionic surfactant C₁₂₋₁₈E₁₁. Monitoring shall be conducted by Method 5540 D, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. For the first six months after the permit effective date, monitoring shall be conducted once/week. Thereafter, monitoring shall be conducted once/month.

17. Total recoverable mercury sampling shall be conducted quarterly using EPA Method 1631E.
18. Effluent and upstream total hardness shall be sampled as close together in time as possible at the same sampling locations used in Item I.A.13 above. Effluent sampling shall also occur as close together in time as possible with effluent total recoverable copper sampling. Monthly average and daily maximum results for effluent and upstream hardness shall be reported. All individual values shall also be reported as an attachment to the DMR Form. Upstream and downstream total hardness sampling shall be conducted once/week for one year after the permit effective date.

19. For Ultimate Oxygen Demand (UOD), monthly average values (lbs/day) shall be calculated and reported on the DMR Form using the following formula, where BOD₅ and Total Ammonia are expressed as lbs/day:

$$\text{UOD} = [3.0 \times \text{BOD}_5 \text{ monthly average}] + [4.57 \times \text{Total Ammonia monthly average}]$$

20. Any bypass of the treatment facility, which is not included in the effluent monitored above, is to be monitored for flow and all other parameters, except chronic whole effluent toxicity. For parameters other than flow, at least one grab sample per day shall be monitored. Daily flow shall be monitored or estimated, as appropriate, to obtain reportable data. All monitoring results shall be reported on a DMR Form.
21. Parameters shall be monitored using sufficiently sensitive Part 136 analytical methods. If the results for a given sample analysis are such that any parameter (other than fecal coliform) is not detected at or above the minimum level for the test method used, a value of zero will be used for that sample in calculating an arithmetic mean value for the parameter. If the resulting calculated arithmetic mean value for that reporting period is zero, the permittee shall report "NODI=B" on the DMR Form. For fecal coliform, a value of 1.0 shall be used in calculating the geometric mean. If the resulting fecal coliform mean value is 1.0, the permittee shall report "NODI=B" on the DMR Form. For each quantitative sample value that is not detectable, the test method used and the minimum level for that method for that parameter shall be attached to and submitted with the DMR Form. The permittee shall then be considered in compliance with the appropriate effluent limitation and/or reporting requirement.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Operational Level Attained.....Effective Date of Permit
(For all parameters except those specified below)

Chronic Whole Effluent Toxicity and Total Recoverable Copper:

First Report of Progress.....July 1, 2006
Second Report of Progress.....January 2, 2007
Third Report of Progress.....July 1, 2007
Operational Level Attained.....October 1, 2007

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

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 Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

[40 CFR §§ 122.41(a) and 122.41(a)(1)]

2. Penalties for Violations of Permit Conditions

The Clean Water Act provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$32,500 per day for each violation. The Clean Water Act provides that any person who negligently violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

[40 CFR § 122.41(a)(2) and 69 FR 7121]

Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$32,500. Penalties for Class II violations are not to exceed \$11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$157,500.
[40 CFR § 122.41(a)(3) and 69 FR 7121]

The specific amounts for violations reflect those in effect at the time of permit issuance and are subject to change.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" Section B, Paragraph 3, and "Upset" Section B, Paragraph 4, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

[40 CFR § 122.41(m) and (n)]

4. Duty to Mitigate

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

[40 CFR § 122.41(d)]

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[40 CFR § 122.41(f)]

6. Toxic Pollutants

If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

[40 CFR § 122.44(b)(1)]

7. 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 under Section 311 of the Act.

8. 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 Act.

9. Effect of a Permit

Except for any toxic effluent standards and prohibitions imposed under Section 307 of the CWA and "standards for sewage sludge use or disposal" under Section 405(d) of the CWA, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 307, 318, 403, and 405 (a)-(b) of CWA. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in 40 CFR §§ 122.62 and 122.64.

Compliance with a permit condition which implements a particular "standard for sewage sludge use or disposal" shall be an affirmative defense in any enforcement action brought for a violation of that "standard for sewage sludge use or disposal" pursuant to Sections 405(e) and 309 of the CWA.

[40 CFR § 122.5(a)]

10. Property Rights

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

[40 CFR § 122.5(b) & 40 CFR § 122.41(g)]

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

[40 CFR § 122.5(c)]

11. Onshore or Offshore Construction

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any waters of the United States.

12. Severability

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

13. 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.

[40 CFR § 122.41(h)]

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

[40 CFR § 122.41(e)]

2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

[40 CFR § 122.41(e)]

3. Bypass of Treatment Facilities

a. Definitions

- (1) "**Bypass**" means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) "**Severe property damage**" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations.

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Paragraphs c. and d. of this subsection.

c. 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 Section D, Subsection 8 (24-hour notice).

d. Prohibition of bypass

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

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(c) The permittee submitted notices as required under Paragraph c. of this subsection.

(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 Paragraph d.(1) of this subsection.

[40 CFR § 122.41(m)(1)-(4)]

4. Upsets

a. Definition

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. 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 Paragraph c. of this subsection 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.

c. Conditions necessary for a demonstration of upset

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

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

- (2) The permitted facility was at the time being properly operated; and
- (3) The permittee submitted notice of the upset as required in Section D, Subsection 8 (24 hour notice);
- (4) The permittee complied with any remedial measures required under Section A., Subsection 4.

d. **Burden of proof**

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

[40 CFR § 122.41(n)(1)-(4)]

5. **Removed Substances**

This permit does not authorize discharge of solids, sludge, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters of the United States unless specifically limited in Part I.

SECTION C. MONITORING AND RECORDS

1. **Representative Sampling**

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

[40 CFR § 122.41(j)(1)]

All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director.

2. **Flow Measurements**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that 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 $\pm 10\%$ from the true discharge rates throughout the range of expected discharge volumes. Once-through condenser cooling water flow which is monitored by pump logs, or pump hour meters as specified in Part I of this permit and based on the manufacturer's pump curves shall not be subject to this requirement. Guidance in selection, installation, calibration, and operation of acceptable flow measurement devices can be obtained from the following references. These references are available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. (800) 553-6847 or (703) 487-4650.

"A Guide to Methods and Standards for the Measurement of Water Flow", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 100 pp. (Order by NTIS No. COM-7510683.)

"Water Measurement Manual", U.S. Department of Interior, Bureau of Reclamation, Revised Edition, 1984, 343 pp. (Order by NTIS No. PB-85221109.)

"Flow Measurement in Open Channels and Closed Conduits", U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Order by NTIS No. PB-273535.)

"NPDES Compliance Flow Measurement Manual", U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-77, September 1981, 149 pp. (Order by NTIS No. PB-82131178.)

3. Monitoring Procedures

Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

[40 CFR § 122.41(j)(4)]

4. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

[40 CFR § 122.41(j)(5)]

5. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 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.

[40 CFR § 122.41(j)(2)]

6. Record Contents

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

[40 CFR § 122.41(j)(3)(i)-(vi)]

7. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- 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; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

[40 CFR § 122.41(i)(1)-(4)]

SECTION D. REPORTING REQUIREMENTS

1. Change in Discharge

Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR § 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D, Subsection 11.

- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

[40 CFR § 122.41(l)(1)(i)-(iii)]

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.

[40 CFR § 122.41(l)(2)]

Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Director.

3. Transfer of Ownership of Control

- a. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

[40 CFR § 122.41(l)(3)]

- b. In some cases modification or revocation and reissuance is mandatory.

[40 CFR § 122.61]

- c. Automatic transfers. As an alternative to transfers of permits by modification, any NPDES permit may be automatically transferred to a new permittee if:

- (1) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in Subparagraph b.(2) of this subsection;
- (2) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
- (3) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under 40 CFR § 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Subparagraph b.(2) of this subsection.

[40 CFR § 122.61(b)]

4. Monitoring Reports

Monitoring results shall be reported at the intervals specified in Part III of the permit.

[40 CFR § 122.41(l)(4)]

Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

[40 CFR § 122.41(l)(4)(i)]

5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

[40 CFR § 122.41(l)(4)(ii)]

6. Averaging of Measurements

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

[40 CFR § 122.41(l)(4)(iii)]

7. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

[40 CFR § 122.41(l)(5)]

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

8. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be included as information which must be reported within 24 hours under this paragraph.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit. [See 40 CFR § 122.44(g).]
- b. Any upset which exceeds any effluent limitation in the permit.
- c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. [See 40 CFR § 122.44(g)]

The Director may waive the written report on a case-by-case basis for reports under this subsection if the oral report has been received within 24 hours.

[40 CFR § 122.41(i)(6)]

9. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Section D at the time monitoring reports are submitted. The reports shall contain the information listed in Section D, Subsection 8.

[40 CFR § 122.41(i)(7)]

10. 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 to the Director.

[40 CFR § 122.41(i)(8)]

11. Changes in Discharge of Toxic Substances

The following conditions apply to all NPDES permits within the categories specified below:

- a. *Existing manufacturing, commercial, mining, and silvicultural dischargers.* All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - (1) 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 following "notification levels":
 - (a) One hundred micrograms per liter (100 µg/l);

(b) Two hundred micrograms per liter (200 $\mu\text{g/l}$) for acrolein and acrylonitrile; five hundred micrograms per liter (500 $\mu\text{g/l}$) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony; or

(c) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7).

[40 CFR § 122.42(a)(1)(i-iii)]

(2) 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 following "notification levels":

(a) Five hundred micrograms per liter (500 $\mu\text{g/l}$);

(b) One milligram per liter (1 mg/l) for antimony; or

(c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7).

[40 CFR § 122.42(a)(2)(i-iii)]

b. *Publicly owned treatment works.* All POTWs must provide adequate notice to the Director of the following:

(1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Section 301 or 306 of CWA if it were directly discharging those pollutants; and

(2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(3) For purposes of this paragraph, adequate notice shall include information on

(a) the quality and quantity of effluent introduced into the POTW, and

(b) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

[40 CFR § 122.42(b)]

12. 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.

[40 CFR § 122.41(b)]

The application should be submitted at least 180 days before the expiration date of this permit. The Regional Administrator may grant permission to submit an application later than the 180 days in advance, but no later than the permit expiration date.

[40 CFR § 122.21(d)]

When EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit if the permittee has submitted a timely application under this subsection which is a complete application for a new permit; and the Regional Administrator, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit.

[40 CFR § 122.6(a)]

Permits continued under this section remain fully effective and enforceable.

[40 CFR § 122.6(b)].

13. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified.

[40 CFR § 122.41(k)(1)]

a. *Applications.* 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, or
- (b) the manager of one or more manufacturing, production, or operating 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 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.

NOTE: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in this subparagraph. The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under this subparagraph rather than to specific individuals.

- (2) *For a partnership or sole proprietorship.* By a general partner or the proprietor, respectively;
or
- (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, or
 - (b) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
- b. All reports required by permits, and other information requested by the Director shall be signed by a person described in Paragraph a. of this section, 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 in Paragraph a. of this section;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,
 - (3) The written authorization is submitted to the Director.
- c. *Changes to authorization.* If an authorization under Paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Paragraph b. of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
- d. *Certification.* Any person signing a document under Paragraph a. or b. of 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."

[40 CFR § 122.22]

14. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Permit Issuing Authority. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

[40 CFR §§ 124.18 & 122]

15. Penalties for Falsification of Reports

The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

[40 CFR § 122.41(k)(2)]

SECTION E. DEFINITIONS

1. Permit Issuing Authority

The Regional Administrator of EPA Region 4 or his/her designee is the "Permit Issuing Authority," unless at some time in the future the State or Indian Tribe receives authority to administer the NPDES program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving the authorization becomes the issuing authority.

The use of the term "Director" in this permit shall apply to the Regional Administrator of EPA, Region 4.
[40 CFR § 122.2]

2. Act

"Act" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, 33 U.S.C. 1251 et seq.

[40 CFR § 124.2]

3. Discharge Monitoring Report (DMR)

"Discharge Monitoring Report" means the EPA national form (Form 3320-1) including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. EPA will prepare and mail "pre-printed" DMR forms to permittees for completion. These "pre-printed" DMR forms will indicate the appropriate reporting requirements and limitations as found in Part I of the permit.

[40 CFR § 122.2]

4. Measurements

- a. **“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.

For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day.

For pollutants with limitations expressed in other units of measurement (i.e., concentration), the “daily discharge” is calculated as the average measurement of the pollutant over the day.

- b. The **“average annual discharge limitation”** means the highest allowable average of “daily discharges” over a period of twelve consecutive calendar months, calculated as the “arithmetic mean” of the monthly averages for the current calendar month and the eleven prior calendar months. The annual average is calculated each month.

This limitation is identified as “Annual Average” in Part I of the permit.

- c. The **“average monthly discharge limitation”** other than for bacterial indicators, 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 bacterial indicators, the “average monthly discharge limitation” is calculated using a “geometric mean.”

This limitation is identified as “Monthly Average” or “Daily Average” in Part I of the permit.

- d. The **“average weekly discharge limitation”** 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.

This limitation is identified as “Weekly Average” in Part I of the permit.

- e. The **“maximum daily discharge limitation”** means the highest allowable “daily discharge.”

This limitation is identified as “Daily Maximum” in Part I of the permit.

[40 CFR § 122.2]

5. Types of Samples

- a. **Composite Sample:** A “**composite sample**” is a combination of not less than eight influent or effluent portions (aliquots), of at least 100 ml, collected over the full time period specified in Part I of the permit. The composite sample must be flow proportioned by either a time interval between each aliquot, or by volume as it relates to effluent flow at the time of sampling, or by total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.
- b. **Grab Sample:** A “**grab sample**” is a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the total discharge.

6. Calculation of Means

- a. **Arithmetic Mean:** The “**arithmetic mean**” of any set of values is the sum of the individual values divided by the number of individual values.
- b. **Geometric Mean:** The “**geometric mean**” of any set of values is the N^{th} root of the product of the individual values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

7. Hazardous Substance

A “**hazardous substance**” means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.

[40 CFR § 122.2]

8. Toxic Pollutants

A “**toxic pollutant**” is any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing Section 405(d) of the Clean Water Act.

[40 CFR § 122.2]



PART III

Other Requirements

A. Reporting of Monitoring Results

Monitoring results obtained for each month shall be summarized for that month and reported on a DMR Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed month for submittal to EPA. (For example, data for January shall be submitted by February 28.) Signed copies of the DMRs and all other reports, including those required by Section D of Part II, Reporting Requirements, shall be submitted to the Permit Issuing Authority and DHEC at the following addresses:

Environmental Protection Agency
Region 4
Eastern Enforcement Section
Water Programs Enforcement Branch
Water Management Division
Atlanta Federal Center
61 Forsyth St., SW
Atlanta, GA 30303-8960

South Carolina Department of Health &
Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201

If no discharge occurs during the reporting period, sampling requirements of this permit do not apply. The statement "No Discharge" shall be written on the DMR Form. If, during the term of this permit, the facility ceases discharge to surface waters, the Permit Issuing Authority shall be notified immediately upon cessation of discharge. This notification shall be in writing.

B. Reopener Clause

This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation, or sludge disposal requirement issued or approved under Sections 301(b)(2)(C) & (D), 307(a)(2), and 405(d)(2)(D) of the CWA, as amended, if the effluent standard, limitation, or sludge disposal requirement so issued or approved:

- a. Contains different conditions or is otherwise more stringent than any condition in the permit; or
- b. Controls any pollutant or disposal method not addressed in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable. The permit may also be reopened to include appropriate limits or modify any provision if monitoring data indicate the need for such or the reasonable potential to cause, or contribute to, exceedances of any applicable South Carolina water quality criterion. The permit may also be reopened to modify any limit or provision based on any variances that are granted by South Carolina and approved by EPA

C. Best Management Practices/Pollution Prevention Conditions

In accordance with Section 304(e) and 402(a)(2) of the CWA as amended, 33 U.S.C. §§ 1251 et seq., and consistent with the policy of the Pollution Prevention Act of 1990, 42 U.S.C. §§ 13101-13109, the permittee must develop and implement a Best Management Practices (BMP) plan incorporating pollution prevention measures. This part does not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. A BMP plan developed as a requirement of a previous NPDES permit will satisfy the requirements of this part if it addresses practices to reduce the likelihood of spills or other releases of oil or oil contaminated water, water treatment chemicals, cleaning chemicals, and biocides that may enter waters of the United States. References which may be used in developing the plan are the BMP provisions found at 40 C.F.R. Section 122.44(k) and accompanying guidance for developing and implementing BMPs.

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I. Definitions

- a. The term "**pollutants**" refers to conventional, non-conventional and toxic pollutants, as appropriate for the NPDES storm water program and toxic pollutants.
- b. **Conventional pollutants** are: biochemical oxygen demand (BOD), suspended solids, pH, fecal coliform bacteria, and oil and grease.
- c. **Non-conventional pollutants** are those which are not defined as conventional or toxic, such as phosphorus, nitrogen, or ammonia. (Ref: 40 C.F.R. Section 122, Appendix D, Table IV)
- d. For purposes of this part, **Toxic pollutants** include, but are not limited to: i) any toxic substance listed in Section 307(a)(1) of the CWA and any hazardous substance listed in Section 311 of the CWA, and ii) any substance (that is not also a conventional or non-conventional pollutant) for which EPA has published an acute or chronic toxicity criterion, or that is a pesticide regulated by the FIFRA.
- e. "**Pollution prevention**" and "**waste minimization**" refer to the first two categories of EPA's preferred hazardous waste management strategy: first, source reduction and then, recycling.
- f. "**Recycle/Reuse**" is defined as the minimization of waste generation by recovering and reprocessing usable products that might otherwise become waste; or the reuse or reprocessing of usable waste products in place of the original stock, or for other purposes such as material recovery, material regeneration, or energy production.

- g. **"Source reduction"** means any practice which: i) reduces the amount of any pollutant entering a waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and ii) reduces the hazards to public health and the environment associated with the release of such pollutant. The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. It does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a pollutant through a process or activity which itself is not integral to, or previously considered necessary for, the production of a product or the providing of a service.
- h. **"BMP3"** means a Best Management Practices/Pollution Prevention Plan incorporating the requirements of 40 C.F.R. Section 122.44(k), plus pollution prevention techniques, except where other existing programs are deemed equivalent by the permittee. The permittee shall certify the equivalency of the other referenced programs.
- i. **"Waste Minimization Assessment"** means a systematic planned procedure with the objective of identifying ways to reduce or eliminate waste.
- j. The term **"material"** refers to chemicals or chemical products used in any plant operation (i.e., caustic soda, hydrazine, degreasing agents, paint solvents, etc.). It does not include lumber, boxes, packing materials, etc.

2. Best Management Practices/Pollution Prevention Plan

The permittee shall develop and implement a BMP3 plan for the facility which is the source of wastewater discharges covered by this permit. The plan shall be directed toward reducing those pollutants of concern which discharge, or could discharge, to surface waters and shall be prepared in accordance with good engineering and good housekeeping practices. For the purposes of this permit, pollutants of concern shall be limited to toxic pollutants, as defined above, known to the discharger. The plan shall address all activities which could or do contribute these pollutants to the surface water discharge, including process, treatment, and ancillary activities. Any available BMP plan for storm water discharges shall be attached to and become a component of the BMP3 plan.

3. Signatory Authority and Management Responsibilities

A copy of the plan shall be retained at the facility and shall be made available to the permit issuing authority upon request. The BMP3 plan shall contain a written statement from corporate or plant management indicating management's commitment to the goals of the BMP3 program. Such statements shall be publicized or made known to all facility employees. Training shall be provided for the individuals responsible for implementing the BMP3 plan.

4. BMP3 Plan Requirements

The following requirements may be incorporated by reference from existing facility procedures:

- a. name and description of facility, a map illustrating the location of the facility and adjacent receiving waters, and other maps, plot plans or drawings, as necessary;
- b. overall objectives (both short-term and long-term) and scope of the plan, towards reduction of pollutants, anticipated dates of achievement of reduction, and a description of means for achieving each reduction goal;
- c. a description of practices involving preventive maintenance, housekeeping, recordkeeping, inspections, and plant security;

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- d. a description of a waste minimization assessment (WMA) plan for this facility, to determine actions that could be taken to reduce waste loadings and chemical losses to all wastewater streams, without compromising production efficiency or jeopardizing operations. The plan shall address both short-term and long-term opportunities for minimizing waste generation at this facility, particularly for high volume and/or high toxicity components of wastewater streams. Initially, the WMA plan should focus primarily on actions that could be implemented quickly, thereby realizing tangible benefits to surface water quality. Long term goals and actions pertaining to waste reduction shall include investigation of the feasibility of eliminating toxic chemical use, instituting process changes, raw material replacements, etc. At minimum, the WMA plan should include the following items:

(i) Plant Water Balance - The WMA plan shall include an overall plant water balance, as well as internal water balances, as necessary. This information shall be used to determine any opportunities for water conservation or reuse/recycling and to determine if and where leakages might occur.

(ii) Materials and Risk Assessment - A materials and risk assessment shall be developed and shall include the following:

- (1) identification of the types and quantities of materials used at the facility;
- (2) identification of the location and types of materials management activities which occur at the facility;

(3) an evaluation of the following aspects of materials compatibility: containment and storage practices for chemicals, container compatibility, chemical mixing procedures; potential mixing or compatibility problems; and specific prohibitions regarding mixing of chemicals;

(4) technical information on human health and ecological effects of toxic or hazardous chemicals presently used or manufactured (including by-products produced) or planned for future use or production; and

(5) analyses of chemical use and waste generation, including input parameters for all pollutants, overall plant material balances and as necessary, internal process balances for all pollutants. (When actual measurements of the quantity of a chemical entering a wastewater stream are not readily available, reasonable estimates should be made based on best engineering judgment.) The analyses should address reasons for using particular chemicals, and/or measures or estimates of the actual and potential chemical discharges via wastewater, wastewater sludge, air, solid waste, or hazardous waste media.

(iii) Pollutant Reduction Methods - The WMA plan shall include, at a minimum, the following means of reducing pollutant discharges in wastewater streams or of otherwise minimizing wastes:

(1) process related source reduction measures, including any or all of the following, as appropriate: improved process controls; reduction in use of toxic or hazardous materials; chemical modifications and/or material purification; chemical substitution employing non-toxic or less toxic alternatives; and equipment upgrades or modifications or changes in equipment use;

(2) housekeeping/operational changes, including waste stream segregation, inventory control, spill and leak prevention, equipment maintenance, and employee training in areas of pollution prevention, good housekeeping, and spill prevention & response;

(3) in-process recycling, on-site recycling, and/or off-site recycling of materials;

(4) following all source reduction and recycling practices, wastewater treatment process changes, including the use of new or improved treatment methods, such that treatment degradation products are less toxic to aquatic or human life; and

(5) other means, as agreed upon by the permit issuing authority and the permittee.

- (iv) Practices which reduce pollutant loading in wastewater discharges with a consequent increase in solid hazardous waste generation, decrease in air quality, or adverse affect to groundwater shall not be considered waste reduction for the purposes of this assessment planning.

5. Best Management Practices and Pollution Prevention Committee:

A Best Management Practices and Pollution Prevention Committee (Committee) should be established to direct or assist in the implementation of the BMP3 plan. The Committee should be comprised of individuals within the plant organization who are responsible for developing, implementing, monitoring of success, and revision of the BMP3 plan. The activities and responsibilities of the Committee should address all aspects of the facility's BMP3 plan. The scope of responsibilities of the Committee should be described in the plan.

6. Employee Training

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Employee training programs shall inform appropriate personnel of the components and goals of the BMP3 plan and shall describe employee responsibilities for implementing the plan. Training shall address topics such as good housekeeping, materials management, recordkeeping and reporting, spill prevention and response, as well as specific waste reduction practices to be employed. The plan shall identify periodic dates for such training.

7. Plan Development & Implementation

The BMP3 plan shall be developed or updated within 3 months and implemented 6 months after the effective date of this permit, unless any later dates are specified by the Director. In cases of facilities that were not previously required to have a BMP plan, the plan must be developed within 6 months after the effective date of the permit and implemented within 18 months after the effective date of the permit.

8. Plan Review & Modification

If following review by the Director, or authorized representative, the BMP3 plan is determined insufficient, he/she may notify the permittee that the BMP3 plan does not meet one or more of the minimum requirements of this Part. Upon such notification from the Director, or authorized representative, the permittee shall amend the plan and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have 30 days after such notification to make the changes necessary.

The permittee shall modify the BMP3 plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to waters of the United States or if the plan proves to be ineffective in achieving the general objectives of reducing pollutants in wastewater or storm water discharges. Modifications to the plan may be reviewed by EPA in the same manner as described above.

D. Macroinvertebrate Assessment

1. The permittee shall conduct one macroinvertebrate assessment on Blue Hill Creek and on Long Cane Creek downstream from the discharge location during July, August, or September of each calendar year.
2. The permittee shall submit a study plan for EPA review based on the following document:

EPA publication entitled, "Revision to Rapid Bioassessment Protocols for Use in Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish," by M.T. Barbour, J. Gerritsen, B.D. Snyder, and J.B. Stribling (EPA 841-B-99-002).
3. The study plan shall be submitted to EPA for review within 60 days of the effective date of the permit. Any EPA comments must be considered prior to commencement of actual sampling efforts. An explanation of any deviation from EPA comments must ~~be~~ **DRAFT** submitted with the sampling results.
4. Results of a given instream assessment must be submitted to the EPA within 90 days of completion of the sampling.

PART IV
Acute and Chronic Whole Effluent Toxicity Testing Program

As required by Part I of this permit, the permittee shall initiate the series of tests described below beginning in January 2006 to evaluate acute and chronic whole effluent toxicity of the discharge from outfall 001. All test species, procedures, and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013 (October 2002), or the most current edition. The control and dilution water will be moderately hard water as described in EPA-821-R-02-013, Section 7, or the most current edition. A standard reference toxicant quality assurance chronic toxicity test shall be conducted concurrently with each species used in the toxicity tests and the results submitted with the discharge monitoring report (DMR). Alternatively, if monthly QA/QC reference toxicant tests are conducted, these results must be submitted with the DMR. ~~Any deviation~~ **DRAFT** from the bioassay procedures outlined or cited herein shall be submitted in writing to the EPA for review and approval prior to use.

1. a. The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction test and a fathead minnow, Pimephales promelas, Larval Survival and Growth test. All tests shall be conducted using a control (0% effluent) and the following dilution concentrations: for Tier 1 - 100%, 85%, 63%, 42%, and 21%; for Tier 2 - 100%, 88%, 66%, 44%, and 22%; and for Tier 3 - 100%, 89%, 66%, 44%, and 22%. The measured chronic endpoint will be the inhibition concentration causing 25% reduction in survival, reproduction, and/or growth (IC₂₅) of the test organisms. The IC₂₅ shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of Ceriodaphnia dubia and Pimephales promelas larvae, as appropriate, used to initiate the test. The measured acute endpoint will be the percent mortality in the 100% concentration at 48 hours.
- b. For each set of tests conducted, a 24 hr. composite sample of final effluent shall be collected and used per the sampling schedule discussed in EPA-821-R-02-013, Section 8.3, or the most current edition.
- c. For either species, if control mortality exceeds 10% by 48 hours or 20% mortality thereafter, the test(s) for that species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% by 48 hours or 20% thereafter for either species. If, in any separate test, 100% mortality occurs prior to the end of the test, and control mortality is 10% or less if that time is prior to 48 hours or 20% or less thereafter, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable acute and/or chronic toxicity.

Each test must meet the test acceptability criteria for each species as defined in EPA-821-R-02-013, Section 13.12 and Section 11.12, respectively, or the most current edition. Additionally, all test results must be evaluated and reported for concentration-response relationship based on "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 C.F.R. Part 136)", EPA/821/B-00/004 (2000), or the most current edition. If the required concentration-response review fails to yield a valid relationship per EPA/821/B-00/004 (or the most current edition), that test shall be repeated. Any test initiated but terminated prior to completion must be reported with a complete explanation for the termination.

2. a. Monitoring shall be conducted quarterly until eighteen months from the permit effective date. After that date, monitoring shall be conducted once every two months and such tests shall be referred to as "routine" tests. If the results from any six consecutive "routine" tests for a test species show no violations of any limit expressed in Item 3.a below, then the monitoring frequency can be reduced to once every six months thereafter for the duration of the permit for that species. Otherwise, the sampling frequency shall continue once every two months for that species.
 - b. Results from all tests shall be reported according to EPA-821-R-02-013, Section 10, or the most current edition. For all quarterly testing, the actual IC_{25} result obtained shall be reported directly on the DMR. For all subsequent "routine" and additional tests, all results shall be recorded and submitted on the DMR in the following manner: For Tier 1, if the monthly average IC_{25} of a test species is less than or equal to 85% effluent, " $\leq 85\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 85% effluent, ">85%" shall be entered. For Tier 2, if the monthly average IC_{25} of a test species is less than or equal to 88% effluent, " $\leq 88\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 88% effluent, ">88%" shall be entered. For Tier 3, if the monthly average IC_{25} of a test species is less than or equal to 89% effluent, " $\leq 89\%$ " shall be entered on the DMR for that species. If the monthly average IC_{25} of a test species is greater than 89% effluent, ">89%" shall be entered. For the 100% effluent concentration in all tests at all Tiers, the percent mortality at 48 hours in each test shall also be separately entered on the DMR for each species. All individual test results for a given month shall be submitted as an attachment to the DMR.
3. a. For all "routine" and additional tests: For Tier 1, a monthly average IC_{25} of less than or equal to 85% effluent will be a violation of the monthly average chronic WET limit of this permit. For Tier 2, a monthly average IC_{25} of less than or equal to 88% effluent will be a violation of the monthly average chronic WET limit of this permit. For Tier 3, a monthly average IC_{25} of less than or equal to 89% effluent will be a violation of the monthly average chronic WET limit of this permit. For any test at any Tier, mortalities of 50% or higher in 100% effluent at 48 hours will be a violation of the daily maximum acute WET limit of this permit.

- b. If an IC_{25} of less than or equal to 85% effluent for Tier 1/an IC_{25} of less than or equal to 88% effluent for Tier 2/an IC_{25} of less than or equal to 89% effluent for Tier 3 is found in a "routine" test, the permittee shall conduct two valid additional tests on each species indicating the violation and report each individual IC_{25} obtained. For any test at any Tier, if mortality of 50% or higher in 100% effluent is found at 48 hours, the permittee shall conduct two valid additional 48-hour acute tests on each species indicating the violation and report each individual LC_{50} obtained.
- c. For Tier 1, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 85%, 63%, 42%, and 21%. For Tier 2, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 88%, 66%, 44%, and 22%. For Tier 3, the first valid additional test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 89%, 66%, 44%, and 22%. The dilution series may be modified in the second valid test to more accurately identify the toxicity, such that, if possible, at least two dilutions above (not to exceed 100% effluent) and two dilutions below the receiving waste concentration and a control (0% effluent) are run.
- d. For each additional test, the sample collection requirements and the test acceptability criteria and concentration-response relationships specified in sections 1.b and c. above, respectively, must be met for it to be considered valid. The first additional test shall begin within one week of the end of the "routine" test, and shall be conducted weekly thereafter until two additional valid tests are completed.

INDUSTRIAL FACILITY FACT SHEET

APPLICATION FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
TO WATERS OF THE UNITED STATES

Application No.: SC0000353

Application Date: February 3, 2005

Permit Writer: Marshall Hyatt

1. Synopsis of Application

A. Name and Address of Applicant

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Milliken and Company
Post Office Box 1926, M-482
Spartanburg, South Carolina 29304

For:

Abbeville Facility
601 Brooks Street
Abbeville, Abbeville County, South Carolina 29620

B. Type of Facility

Dyeing and finishing of woven fabrics made from synthetic fabrics and package dyeing of synthetic fibers. Standard Industrial Classification Codes 2262 and 2269.

C. Production Capacity of Facility (2002-2004 average)

Total production - average of 51,700 lbs/day

D. Applicant's Receiving Water

Blue Hill Creek
Latitude: 34° 10' 30" N Longitude: 82° 22' 30" W

See Attachment A for a sketch showing the location of the discharge.

The receiving stream is on South Carolina's Clean Water Act (CWA) § 303(d) list for fecal coliforms and turbidity. Total maximum daily loads have not yet been developed. Based on coordination with EPA's Drinking Water Section, no drinking water intakes are located immediately downstream of this discharge.

E. Description of Wastewater Treatment Facilities

All wastewater is treated via screening, activated sludge, clarification, and post aeration. Sludge is treated via aerobic digestion and belt sludge press and then disposed to a brick manufacturer. Sanitary wastewater is treated by the City of Abbeville treatment facility.

F. Description of Discharge (as reported in application)

Outfall Serial No. 001 - Process Wastewater, Utility Water, and Stormwater

Long-Term Average Flow, MGD - 0.551

Maximum Daily Flow, MGD - 1.823

Pollutants which are present in significant quantities or which are subject to effluent limitations are as follows:

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Effluent Characteristic	Reported Data	
	Maximum Daily	Maximum 30-Day Avg
Biochemical Oxygen Demand, 5-day, mg/l	26	16
Total Suspended Solids, mg/l	123	84.3
Chemical Oxygen Demand, mg/l	459	376.2
Sulfide, mg/l	< 0.1	< 0.1
Phenols, mg/l	< 0.01	< 0.01
Color, standard units	439	94.7
Total Copper, mg/l	0.039	0.1
Total Zinc, mg/l	0.29	0.181
Dissolved Oxygen, mg/l	Not Reported	Not Reported
Temperature, °C.	16 (min)	29.6 (max)
pH, Standard Units	6.95 (min)	8.3 (max)
Ammonia (as N), mg/l	11.6	11.6
Total Chromium, mg/l	< 0.05	< 0.05
Total Mercury, mg/l	Not Reported	<0.0002

2. Proposed Effluent Limitations

Serial 001 - Process Wastewater, Utility Water, and Stormwater

PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 1):

	<u>Monthly Avg.</u> Report	<u>Daily Maximum</u> Report
Flow, MGD		
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (64)	Report (128)
(Nov-Feb)	Report (130)	Report (260)
Total Suspended Solids (TSS), lbs/day	478.4	956.9
Chemical Oxygen Demand, lbs/day	2533	5067
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)
Total Sulfide, lbs/day	5.2	10.3
Total Phenols, lbs/day	2.6	5.2
Total Chromium, lbs/day	2.6	5.2
Dissolved Oxygen (DO)	DRAFT min. of 6.0 mg/l from Mar-Oct; 5.0 mg/l from Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Total Hardness, mg/l as CaCO ₃ (upstream)	Report	Report
Total Hardness, mg/l as CaCO ₃ (effluent)	Report	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	196	392
(Nov-Feb)	397	794
Total Recoverable Copper, mg/l (interim)	Report	Report
(final)	0.010	0.012
Chronic Whole Effluent Toxicity (WET), IC ₂₅ (interim)	Report	---
(final)	> 85%	---
Acute Whole Effluent Toxicity	---	<50% mortality in 100% effluent at 48 hrs

PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 2):

	<u>Monthly Avg.</u>	<u>Daily Maximum</u>
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (83)	Report (166)
(Nov-Feb)	Report (164)	Report (328)
Total Suspended Solids (TSS), lbs/day	570.1	1140.3
Chemical Oxygen Demand, lbs/day	3038	6076
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)
Total Sulfide, lbs/day	6.2	12.4
Total Phenols, lbs/day	3.1	6.2
Total Chromium, lbs/day	3.1	6.2
Dissolved Oxygen (DO)	min. of 6.0 mg/l from Mar-Oct; 5.0 mg/l from Nov-Feb	
pH, standard units (SU)	6.0 - 8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Total Hardness, mg/l as CaCO ₃ (upstream)	Report	Report
Total Hardness, mg/l as CaCO ₃ (effluent)	Report	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	255	510
(Nov-Feb)	504	1008
Total Recoverable Copper, mg/l (interim)	Report	Report
(final)	0.010	0.012
Chronic Whole Effluent Toxicity (WET), IC ₅₀	≥ 88%	---
Acute Whole Effluent Toxicity	---	<50% mortality in 100% effluent at 48 hrs

PARAMETERS

DISCHARGE LIMITATIONS

Proposed Final Limits (Tier 3):

	<u>Monthly Avg.</u>	<u>Daily Maximum</u>
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-Day (BOD ₅), mg/l (lbs/day) (March-Oct)	Report (90)	Report (180)
(Nov-Feb)	Report (178)	Report (356)
Total Suspended Solids (TSS), lbs/day	650.2	1300.5
Chemical Oxygen Demand, lbs/day	3479	6958
Total Ammonia (NH ₃ -N), mg/l (lbs/day)	Report (Report)	Report (Report)
Total Sulfide, lbs/day	7.1	14.2
Total Phenols, lbs/day	3.5	7.1
Total Chromium, lbs/day	3.5	7.1
Dissolved Oxygen (DO)	min. of 6.0 mg/l from Mar-Oct; 5.0 mg/l from Nov-Feb	
pH, standard units (SU)	6.0-8.5	
Total Recoverable Copper, mg/l	0.010	0.012
Temperature, °C. (upstream of discharge)	Report	Report
Temperature, °C. (effluent)	Report	Report
Temperature, °C. (downstream of discharge)	Report	Report
Temperature, °C. (downstream - upstream)	Calculate for each sampling	
Color, ADMI (upstream of discharge) for apparent and true color	Report	Report
Color, ADMI (effluent)	Report	Report
Color, ADMI (downstream of discharge) for apparent and true color	Report	Report
Color, ADMI (downstream - upstream) for apparent and true color	Calculate for each sampling	
Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l	Report	Report
Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l	Report	Report
Total Recoverable Mercury, ng/l	---	Report
Total Hardness, mg/l as CaCO ₃ (upstream)	Report	Report
Total Hardness, mg/l as CaCO ₃ (effluent)	Report	Report
Ultimate Oxygen Demand, lbs/day (Mar-Oct)	276	552
(Nov-Feb)	548	1096
Total Recoverable Copper, mg/l (interim)	Report	Report
(final)	0.010	0.012
Chronic Whole Effluent Toxicity (WET), IC ₅₀ ≥ 89%	---	
Acute Whole Effluent Toxicity	---	<50% mortality in 100% effluent at 48 hrs

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3. Basis for Final Effluent Limits and Permit Conditions

The permit conditions and limitations were taken from the following sources:

- The previous NPDES permit (issued March 29, 1996, effective May 1, 1996, modified October 1, 1998, and expired April 30, 2001)
- The Clean Water Act (CWA)
- Title 40, Code of Federal Regulations (C.F.R) Parts 122 and 410
- South Carolina Water Classifications and Standards, (R.61-68), June 25, 2004
- Draft permit and fact sheet rationale prepared by the South Carolina Department of Health and Environmental Control, (DHEC), dated July 13, 2004
- CORMIX modeling information provided with the permittee's 2005 permit application
- Discharge Monitoring Report (DMR) chronic WET data for August 1996- March 2005
- DMR flow data from January 2000-January 2005
- February 8, 2005 submittal of production data as confidential business information by the applicant
- April 6, 2005 letter from the DHEC General Counsel regarding mixing zones
- March 3, 1997-January 17, 2005 letters/reports submitted by/on behalf of Milliken to DHEC for its toxicity reduction/identification efforts in response to the chronic toxicity observed
- May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation
- June 24, 2005 DHEC reasonable potential (RP) spreadsheet analyses
- August 5, 2005 and August 19, 2005 letters from Milliken

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All monitoring frequencies are based on the previous NPDES permit and/or the Best Professional Judgment (BPJ) of the permit writer. Based on evaluation of the flow data from January 2003 to January 2005 which represent current operating conditions, as well as CORMIX modeling information, and a March 17, 2005 site visit to the facility, it is the BPJ of the permit writer that credit for chronic dilution of 85% for Tier 1 (current) production of dyed fabrics and yarns can be given at the discharge point based on the outfall location in the middle of the receiving stream and the expected narrowness of the receiving stream and the effluent-dominated nature of the discharge at lowflow conditions. The 85% dilution corresponds to a Tier 1 average flow of 0.551 MGD. Based on an evaluation of the flow data from January 2000 to January 2003, it is also the BPJ of the permit writer that credit for chronic dilution of 88% for Tier 2 production and 89% for Tier 3 production can be given. The 88% dilution corresponds to a Tier 2 average flow of 0.744 MGD, while the 89% dilution equates to a Tier 3 average flow of 0.82 MGD. Authority for EPA to give credit for mixing zones is provided by an April 6, 2005 letter from the DHEC General Counsel.

For effluent guidelines-based parameters, Tier 1 (current production) is represented by a total production level of 51,700 lbs/day; Tier 2 is represented by a total production level of 62,000 lbs/day, and Tier 3 is represented by a total production level of 71,000 lbs/day. Tier 2 levels are based on a 20% increase in Tier 1 levels. Tier 3 levels are based on the maximum production allowed under the current NPDES permit, rather than a 20% increase in Tier 2 levels. If higher production levels are requested, an antidegradation analysis will need to be submitted. The provisions of permit Item I.A.8 regarding the applicability and notification requirements for a given Tier are based on 40 C.F.R. Section 122.45(b)(2)(ii).

Proposed Permit Conditions and Justification:

Parameter: Flow, MGD
Proposed Condition: Monitor only

Justification: The requirement to monitor flow is consistent with CWA §§ 308(a) and 402(a)(2).

Parameter: Biochemical Oxygen Demand (5-Day) (BOD₅), mg/l (lbs/day)
Proposed Condition: Monthly Average - Tier 1 - Report (64 lbs/day Mar-Oct; 130 lbs/day Nov-Feb)
Tier 2 - Report (83 lbs/day Mar-Oct; 164 lbs/day Nov-Feb)
Tier 3 - Report (90 lbs/day Mar-Oct; 178 lbs/day Nov-Feb)

Daily Maximum - Tier 1 - Report (128 lbs/day Mar-Oct; 260 lbs/day Nov-Feb)
Tier 2 - Report (166 lbs/day Mar-Oct; 328 lbs/day Nov-Feb)
Tier 3 - Report (180 lbs/day Mar-Oct; 356 lbs/day Nov-Feb)

Justification: Based on Best Professional Judgment (BPJ) of the permit writer,

Utility wastewater = 0.11 MGD

Monthly Average: (0.11 MGD) (10 mg/l) (8.34) = 9.2 lbs/day

Daily Maximum: (0.11 MGD) (20 mg/l) (8.34) = 18.3 lbs/day

Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42):

Tier 1 (3.3 lbs/1000 lbs production) (51,700 lbs/day production) = 170.6 lbs/day
Monthly Average:

Tier 1 (6.6 lbs/1000 lbs production) (51,700 lbs/day production) = 341.2 lbs/day
Daily Maximum

Total: Monthly Average - (9.2 lbs/day) + (170.6 lbs/day) = 179.8 lbs/day

Daily Maximum - (18.3 lbs/day) + (341.2 lbs/day) = 359.5 lbs/day

Previous Permit: Monthly Average - 95 lbs/day (March - October)
153 lbs/day (November - February)

Daily Maximum - 50 mg/l, 190 lbs/day (March - October)
50 mg/l, 306 lbs/day (November - February)

For each Tier, the BOD₅ limits needed to meet instream DO criteria contained in the May 18, 2005 DHEC ammonia and ultimate oxygen demand (UOD) evaluation are more stringent than those cited above based on the previous permit's water quality-based mass limits or the technology-based mass limits. Because they are more stringent, the monthly average and daily maximum BOD₅ limits in the May 18, 2005 DHEC evaluation will be used directly as the permit limits. After evaluating monitoring data from the January 2002-May 2005 period, it is the BPJ of the permit writer that the facility can meet the draft limits and that no compliance schedule is needed. Based on an August 19, 2005 letter from the facility, a review of daily maximum concentration data for the period January 2002-May 2005 showed no reasonable potential to exceed the limit of 50 mg/l from the previous permit. Therefore, that concentration limit will not be retained.

Parameter: Total Suspended Solids (TSS), (lbs/day)
Proposed Condition: Monthly Average - Tier 1 total - 478.4 lbs/day
 Tier 2 total - 570.1 lbs/day
 Tier 3 total - 650.2 lbs/day

Daily Maximum - Tier 1 total - 956.9 lbs/day
 Tier 2 total - 1140.3 lbs/day
 Tier 3 total - 1300.5 lbs/day

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Justification: Based on BPJ of the permit writer,
 utility wastewater average flow = 0.11 MGD

Monthly Average: (0.11 MGD) (20 mg/l) (8.34) = 18.3 lbs/day

Daily Maximum: (0.11 MGD) (40 mg/l) (8.34) = 36.7 lbs/day

Textile Mills Point Source Category,
 Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42):

Monthly Average: (8.9 lbs/1000 lbs production) (51,700 lbs/day production) = 460.1 lbs/day

Daily Maximum: (17.8 lbs/1000 lbs production) (51,700 lbs/day production) = 920.2 lbs/day

Tier 1 Total: Monthly Average - 18.3 lb/s/day + 460.1 lbs/day = 478.4 lbs/day
 Daily Maximum - 36.7 lbs/day + 920.2 lbs/day = 956.9 lbs/day

Tier 2: Monthly Average: (8.9 lbs/1000 lbs production) (62,000 lbs/day production) = 551.8 lbs/day

Daily Maximum: (17.8 lbs/1000 lbs production) (62,000 lbs/day production) = 1103.6 lbs/day

Tier 2 Total: Monthly Average - 18.3 lb/s/day + 551.8 lbs/day = 570.1 lbs/day
 Daily Maximum - 36.7 lbs/day + 1103.6 lbs/day = 1140.3 lbs/day

Tier 3: Monthly Average: $(8.9 \text{ lbs}/1000 \text{ lbs production}) (71,000 \text{ lbs/day production}) = 631.9 \text{ lbs/day}$
Daily Maximum: $(17.8 \text{ lbs}/1000 \text{ lbs production}) (71,000 \text{ lbs/day production}) = 1263.8 \text{ lbs/day}$
Tier 3 Total: Monthly Average - $18.3 \text{ lbs/day} + 631.9 \text{ lbs/day} = 650.2 \text{ lbs/day}$
Daily Maximum - $36.7 \text{ lbs/day} + 1263.8 \text{ lbs/day} = 1300.5 \text{ lbs/day}$

Parameter: Chemical Oxygen Demand, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 2533 lbs/day
Tier 2 - 3038 lbs/day
Tier 3 - 3479 lbs/day

Daily Maximum - Tier 1 - 5067 lbs/day
Tier 2 - 6076 lbs/day
Tier 3 - 6958 lbs/day

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Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a), (b), and (c)):

The February 3, 2005 permit application indicates that roughly 10% of total production is synthetic woven fabrics, simple processing and thus, 40 C.F.R. 410.43(b) applies. The application also indicates that roughly 90% of total production is synthetic woven fabrics, complex processing and thus, 40 C.F.R. 410.43(c) applies. Based on the BPJ of the permit writer, these proportions will be used to calculate the draft permit limits.

Tier 1: Monthly Average: $\{(30 + 10 \text{ lbs}/1000 \text{ lbs production}) (.1) + (30 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.9)\} (51,700 \text{ lbs production}) = 2533 \text{ lbs/day}$
Daily Maximum: $\{(60 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.1) + (60 + 40 \text{ lbs}/1000 \text{ lbs production}) (0.9)\} (51,700 \text{ lbs production}) = 5067 \text{ lbs/day}$
Tier 2: Monthly Average: $\{(30 + 10 \text{ lbs}/1000 \text{ lbs production}) (.1) + (30 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.9)\} (62,000 \text{ lbs production}) = 3038 \text{ lbs/day}$
Daily Maximum: $\{(60 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.1) + (60 + 40 \text{ lbs}/1000 \text{ lbs production}) (0.9)\} (62,000 \text{ lbs production}) = 6076 \text{ lbs/day}$
Tier 3: Monthly Average: $\{(30 + 10 \text{ lbs}/1000 \text{ lbs production}) (.1) + (30 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.9)\} (71,000 \text{ lbs production}) = 3479 \text{ lbs/day}$
Daily Maximum: $\{(60 + 20 \text{ lbs}/1000 \text{ lbs production}) (0.1) + (60 + 40 \text{ lbs}/1000 \text{ lbs production}) (0.9)\} (71,000 \text{ lbs production}) = 6958 \text{ lbs/day}$

Parameter: Ammonia-Nitrogen, mg/l (lbs/day)
Proposed Condition: Monthly Average - for Tiers 1, 2, and 3: Report (Report)
Daily Maximum - for Tiers 1, 2, and 3: Report (Report)

Justification:

Based on information provided in August 5 and August 19, 2005 letters from the applicant, use of urea at the facility ended in approximately February 2002. An evaluation of effluent data from March 2002-May 2005 thus appears representative of current conditions. Use of a maximum effluent value of 1.144 mg/l from this period indicates that there is no reasonable potential to exceed applicable South Carolina water quality criteria. As ammonia effluent information is needed to assess compliance with the UOD limits, monitoring only for this parameter will continue as in the current NPDES permit.

Parameter: Total Sulfide, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

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Daily Maximum - Tier 1 - 10.3 lbs/day
Tier 2 - 12.4 lbs/day
Tier 3 - 14.2 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a)):

Tier 1: Monthly Average: (0.10 lbs/1000 lbs production) (51,700 lbs/day production) = 5.2 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (51,700 lbs/day production) = 10.3 lbs/day

Tier 2: Monthly Average: (0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (62,000 lbs/day production) = 12.4 lbs/day

Tier 3: Monthly Average: (0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Daily Maximum: (0.20 lbs/1000 lbs production) (71,000 lbs/day production) = 14.2 lbs/day

Parameter: Total Phenols, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 2.6 lbs/day
Tier 2 - 3.1 lbs/day
Tier 3 - 3.5 lbs/day

Daily Maximum - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a));

Tier 1: Monthly Average: (0.05 lbs/1000 lbs production) (51,700 lbs/day
production) = 2.6 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (51,700 lbs/day
production) = 5.2 lbs/day

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Tier 2: Monthly Average: (0.05 lbs/1000 lbs production) (62,000 lbs/day
production) = 3.1 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (62,000 lbs/day
production) = 6.2 lbs/day

Tier 3: Monthly Average: (0.05 lbs/1000 lbs production) (71,000 lbs/day
production) = 3.5 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (71,000 lbs/day
production) = 7.1 lbs/day

Parameter: Total Chromium, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 2.6 lbs/day
Tier 2 - 3.1 lbs/day
Tier 3 - 3.5 lbs/day

Daily Maximum - Tier 1 - 5.2 lbs/day
Tier 2 - 6.2 lbs/day
Tier 3 - 7.1 lbs/day

Justification: Textile Mills Point Source Category,
Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.43(a));

Tier 1: Monthly Average: (0.05 lbs/1000 lbs production) (51,700 lbs/day
production) = 2.6 lbs/day

Daily Maximum: (0.10 lbs/1000 lbs production) (51,700 lbs/day
production) = 5.2 lbs/day

Tier 2:	Monthly Average:	(0.05 lbs/1000 lbs production) (62,000 lbs/day production) = 3.1 lbs/day
	Daily Maximum:	(0.10 lbs/1000 lbs production) (62,000 lbs/day production) = 6.2 lbs/day
Tier 3:	Monthly Average:	(0.05 lbs/1000 lbs production) (71,000 lbs/day production) = 3.5 lbs/day
	Daily Maximum:	(0.10 lbs/1000 lbs production) (71,000 lbs/day production) = 7.1 lbs/day

Parameter: Dissolved Oxygen (DO), mg/l

Proposed Condition: shall not be less than 6.0 during Mar-Oct; 5.0 during Nov- Feb

Justification: The effluent limitation is based on a DHEC May 18, 2005 ammonia evaluation and the anti-backsliding provisions of ~~DRAFT~~ Section 122.44(l).

Parameter: pH, Standard Units

Proposed Condition: 6.0-8.5

Justification: Textile Mills Point Source Category, Woven Fabric Finishing Subcategory, Subpart D (40 C.F.R. Part 410.42): 6.0 - 9.0

Current Permit: 6.0 - 8.5

Based on the BPJ of the permit writer, since the current permit's water-quality based limits are more stringent than the technology-based limits prescribed above, are being attained, and meet the state water quality criteria found in SC Water Classification and Standards R. 61-68.G.10.f, they will be retained in the draft permit due to the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: Temperature, °C.

Proposed Condition: Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample
Downstream of Discharge - Report each individual sample
(Downstream - Upstream) - Calculate for each sampling

Justification:

Because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), upstream, downstream, and effluent sampling are being required under the authority of CWA §§ 308(a) and 402(a)(2) to assess whether the facility may have the RP to cause, or contribute to, exceedances of South Carolina's freshwater stream criteria found at SC Rule 61-68.E.12.a. Once/week sampling for one year will provide sufficient data to make this determination. If

Parameter: Color, ADMI
Proposed Condition: For both true and apparent color:
Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample.
Downstream of Discharge - Report each individual sample
(Downstream - Upstream) - Calculate for each sampling

Justification:

The February 3, 2005 permit application reports a long-term average value of 94.7 standard units and a daily maximum value of 439 standard units, based on 319 measurements. Due to these elevated values and because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), the facility may be discharging color levels that have the RP to interfere with classified water uses or existing water uses and thus violate South Carolina's narrative criterion at Rule 61-68.E.5.c. The authority for such upstream, downstream, and effluent true and apparent color monitoring to assess RP is provided by CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. In balancing the cost of the number of samples taken with assessing the variability of the effluent, it is the BPJ of the permit writer that once/week sampling for the first full April-October period after the permit effective date is sufficient to assess RP during critical lowflow conditions. If data indicate there is RP, the permit will be modified to include appropriate limits. The authority to ultimately require numeric limits to maintain and protect a narrative color water quality criterion is provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (vi), and (vii)(A), and 122.44(d)(5). Authority for such is also provided in a December 1, 1986 decision of the Asheville North Carolina Division of US District Court (Civ. No. A-C-86-26) and a June 24, 1988 decision of the Fourth Circuit US Court of Appeals (No. 87-3529).

Parameter: Anionic Surfactants as Methylene Blue Active Substances (MBAS), mg/l
Proposed Condition: Monthly Average - Report
Daily Maximum - Report

Justification:

The March 29, 1996 current NPDES permit requires monthly chronic WET monitoring of 89.4% effluent using Ceriodaphnia dubia reproduction and survival as the endpoints. A given test is considered a failure if there is a statistically significant difference at the 95% confidence level in Ceriodaphnia reproduction or survival between a control and 89.4% effluent, which was the instream waste concentration at lowflow conditions. A review of the DMR data for the period April 1996-March 2005 shows 107/108 chronic WET test failures. If any test fails, a "1" must be reported on the DMR and a toxicity reduction evaluation (TRE) plan must be submitted to the permitting authority within 60 days of notification of test results.

For each chronic WET failure cited above, various monthly TRE plans submitted by the facility for the period March 3, 1997-January 17, 2005 are available to EPA. An October 3, 1997 submittal concludes "The toxicity identification phase of the [November 1996] study has been completed and the results from the study indicate that high surfactant loading into the Abbeville Plant wastewater treatment facility was the major contributor to effluent toxicity during the study period." This submittal also states "Surfactants are introduced at multiple areas at the Abbeville Plant." Multiple subsequent TRE monthly plans by the facility, including the January 17, 2005 submittal, contain the statement "A Toxicity Identification Evaluation ("TIE"), completed in May, 1997, indicated that a major contributor to toxicity was the presence of surface-active agents (surfactants) in the wastewater discharge." Periodic TRE plans from February 28, 2001 to January 17, 2005 contain the statement that "*Wherever possible* [emphasis added], significant reductions or complete elimination of the surfactants has occurred. Replacement of these surfactants has not produced any noticeable toxicity result." However, only a few of these TRE plans quantified the levels of surfactants discharged, so the extent of reduction or the variability of the levels currently discharged is unknown.

Because the effluent continues to be toxic, it is the BPJ of the permit writer that surfactants may continue to contribute to ongoing chronic toxicity observed at the plant and that monitoring is needed to verify existing discharge levels and document any future changes or improvements in the amounts discharged. The authority for such monitoring is CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and (4) and 122.48. ^{DRAFT} Monitoring for anionic surfactants shall be conducted by Method 5540 C, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. It is the BPJ of the permit writer that for six months after the permit effective date, monitoring shall be conducted once/week and thereafter, once/month.

Parameter: Nonionic Surfactants as Cobalt Thiocyanate Active Substances (CTAS), mg/l
Proposed Condition: Monthly Average - Report; Daily Maximum - Report

Justification: See justification for anionic surfactants as MBAS above. Monitoring for nonionic surfactants shall be conducted by Method 5540 D, Standard Methods for the Examination of Water and Wastewater, 20 ed., 1998. In an August 5, 2005 letter, Milliken stated that no cationic surfactants are used at the Abbeville facility, so no monitoring for that category will be required.

Parameter: Total Mercury, ng/l
Proposed Condition: Daily Maximum - Report

Justification:

The 0.0002 mg/l detection level reported in the February 3, 2005 permit application appears to be based on EPA Method 245.1 and is not as sensitive as that obtained with EPA Method 1631E (0.000005 mg/l). Because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), quarterly sampling using EPA Method 1631E is being required to assess whether the discharge has the RP to cause, or contribute to, excursions of South Carolina's mercury aquatic life criteria. The monitoring is required under the authority of CWA §§ 308(a) and 402(a)(2) and 40 C.F.R. Sections 122.41(j)(1) and 122.48. If data indicate there is RP,

Parameter: Total Hardness, mg/l as CaCO₃
Proposed Condition: Upstream of Discharge - Report each individual sample
Effluent - Report each individual sample

Justification:

Because the toxicity of total recoverable copper is influenced by the level of total hardness that is present and because the discharge constitutes a large part of the receiving stream during many parts of the year (the facility's instream waste concentration is 85%, 88%, and 89% at critical lowflow conditions for Tiers 1, 2, and 3, respectively), upstream and effluent sampling are being required under the authority of CWA §§ 308(a) and 402(a)(2) to assess whether the facility may have the RP to cause, or contribute to, exceedances of South Carolina's freshwater stream criteria found at SC Rule 61-68.E.12.a. Based on the BPJ of the permit writer, sampling shall be conducted once/week for one year after the permit effective date, concurrent with temperature and copper sampling. The data will be evaluated to determine, if appropriate, a long-term average downstream total hardness level at low flow conditions. In turn, that information may be used to modify the total recoverable copper limits.

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Parameter: Ultimate Oxygen Demand, lbs/day
Proposed Condition: Monthly Average - Tier 1 - 196 lbs/day (Mar-Oct); 397 lbs/day (Nov-Feb)
Tier 2 - 255 lbs/day (Mar-Oct); 504 lbs/day (Nov-Feb)
Tier 3 - 276 lbs/day (Mar-Oct); 548 lbs/day (Nov-Feb)

Daily Maximum - Tier 1 - 392 lbs/day (Mar-Oct); 794 lbs/day (Nov-Feb)
Tier 2 - 510 lbs/day (Mar-Oct); 1008 lbs/day (Nov-Feb)
Tier 3 - 552 lbs/day (Mar-Oct); 1096 lbs/day (Nov-Feb)

Justification:

Because the amounts of BOD₅ and ammonia that are discharged can vary and impact dissolved oxygen water quality criteria, it is the BPJ of the permit writer that limits for the parameter ultimate oxygen demand were appropriate. The monthly average limits above are obtained from the May 18, 2005 DHEC ammonia and UOD evaluation and assume that the long-term average total ammonia level for the period March 2002 - May 2005 is being discharged. Because the draft daily maximum BOD₅ and ammonia permit limits are based on multiplying the corresponding monthly average limits by a factor of two, it is the BPJ of the permit writer that the UOD daily maximum limits should also be based on multiplying the corresponding monthly average limits by a factor of two.

Floating Solids, Visible Foam, and Visible Sheen

The permit conditions prohibiting floating solids and visible foam in other than trace amounts and prohibiting a visible sheen are consistent with the previous NPDES permit and the anti-backsliding provisions of 40 C.F.R. Section 122.44(l).

Parameter: Total Recoverable Copper, mg/l
Proposed Condition: interim: Report monthly average and daily maximum
final: Tier 1 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum
Tier 2 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum
Tier 3 - 0.010 mg/l monthly average, 0.012 mg/l daily maximum

Justification:

The February 3, 2005 permit application reports total copper levels of 0.339 mg/l as a daily maximum, 0.1 mg/l as a maximum 30-day value, and a long-term average of 0.02 mg/l, based on 319 samples. See the June 24, 2005 DHEC reasonable potential analyses in Attachment B. Based on those analyses, RP to cause, or contribute to, exceedances of South Carolina's acute and chronic copper criteria at Rule 61.68 exists for Tiers 1, 2, and 3. The authority for a copper water quality-based limit is provided by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as ~~DRAR~~ Sections 122.44(d)(1)(i), (ii), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.d, E.14.a.2, and E.14.c.1. The monthly average limits for each Tier above are intended to meet applicable SC chronic copper criteria instream at lowflow conditions, while the daily maximum limits above are intended to meet applicable SC acute copper criteria at the end of the pipe.

In assessing RP for the facility's discharge to cause, or contribute to, excursions of SC's acute and chronic copper criteria, EPA accounted for: 1.A) existing controls on point sources via: 1) the screening, activated sludge wastewater treatment, clarification, and post aeration provided to the facility's effluent; and 2) the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions and the nearest point source downstream of the discharge is the City of Abbeville wastewater, two miles downstream; 1.B) existing controls on nonpoint sources of pollution by assuming that background copper concentrations are zero at lowflow conditions; 2) variability of the effluent through the 319 samples cited in the permittee's February 3, 2005 permit application; and 3) dilution of the effluent in the receiving stream by giving credit for lowflow conditions and assuming background lowflows are not toxic.

The permittee is pursuing a variance for this parameter from DHEC. If adopted, it must also be approved by EPA to be used for CWA purposes. Because the final result of those processes will not be known for some time, the permit is being drafted to reflect current SC water quality requirements. See Fact Sheet Item 5 for compliance schedule rationale. The permit includes a reopener in the event a modification is needed to implement any variance that is ultimately adopted and approved.

Parameter: Chronic Whole Effluent Toxicity (WET), IC₂₅

Proposed Condition: interim: Report monthly average and daily maximum

final: Tier 1 - > 85%

Tier 2 - > 88%

Tier 3 - > 89%

Justification:

The March 29, 1996 current NPDES permit for this facility required final monthly chronic WET monitoring of 89.4% effluent using Ceriodaphnia dubia reproduction and survival as the endpoints. A given test is considered a failure if there is a statistically significant difference at the 95% confidence level in Ceriodaphnia reproduction or survival between a control and 89.4% effluent, which was the instream waste concentration at lowflow conditions. If any test fails, a "1" must be reported on the DMR and a toxicity reduction evaluation plan must be submitted to the permitting authority within 60 days of notification of test results.

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A review of the DMR data for the period April 1996-March 2005 shows 107/108 chronic WET test failures. Based on these data, EPA has determined that this facility has RP to cause, or contribute to, excursions of South Carolina's narrative water quality criterion cited below (Rule 61-68.E.5.d):

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except classified uses within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life."

Thus, a chronic WET permit limit is authorized and required by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(i), (v), and (vii)(A), and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.c, E.5.d, and E.14.c.10.

In assessing RP for the facility's discharge to cause, or contribute to, excursions of SC's narrative criteria cited above, EPA accounted for: 1.A) existing controls on point sources via: 1) the screening, activated sludge wastewater treatment, clarification, and post aeration provided to the facility's effluent; and 2) the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions and the nearest point source downstream of the discharge is the City of Abbeville wastewater plant, two miles downstream; 1.B) existing controls on nonpoint sources of pollution by assuming their effect is negligible at background lowflow conditions; 2) variability of the effluent through the 106 Ceriodaphnia chronic pass/fail tests cited above; 3) dilution of the effluent in the receiving stream by giving credit for lowflow conditions and assuming background lowflows are not toxic; and 4) species sensitivity through the 108 Ceriodaphnia pass/fail chronic tests cited above and two fathead minnow chronic tests based on samples collected on December 14, 2004 and January 11, 2005 as reported in the February 3, 2005 permit application.

Because use of multiple test species with different sensitivities can more effectively characterize exposure to different pollutants and effluent variability, EPA believes the combined use of two test species to assess impacts on reproduction and growth will better maintain and protect South Carolina's surface waters at all times from substances harmful to aquatic life, as specified in SC Rule 61-68.E.5.d. EPA is thus requiring use of Ceriodaphnia dubia and Pimephales promelas (fathead minnow) as chronic WET test species for 40 C.F.R. Section 136 test methods to assess the reproductive and growth endpoints in this permit. Use of these two WET test species is consistent with past Regional practice. Authority to require two test species to assess chronic WET reproductive and growth endpoints is provided by CWA §§ 301(b)(1)(C), 308(a), and 402(a)(2), as well as 40 C.F.R. Sections 122.44(j)(1), (j)(4), and 122.48(a) and (b). Use of two WET test species is also consistent with the definitions of "aquatic toxicity test", "biological monitoring", "chronic", "propagation", and "whole effluent toxicity" at SC Rules 61-68.B.9, B.19, B.21, B.48, and B.62, respectively, and with SC Rules 61-68.E.14.c.10 and 61-68.E.17. See Fact Sheet Item 5 for compliance schedule rationale.

The chronic WET methods required in this permit were promulgated by EPA on October 16, 1995 as Part 136 methods. EPA's 1995 promulgation of these methods was upheld in a December 10, 2004 decision by the D.C. Circuit U.S. Court of Appeals (No. 96-1062). Authority to use 40 C.F.R. Part 136 chronic WET methods with reproductive and growth endpoints to assess compliance with NPDES chronic WET permit limits is provided by CWA §§ 308(a) and 402(a)(2), as well as 40 C.F.R. Section 122.41(j)(4) and SC Rules 61-68.E.14.c.10 and 17.

The permittee is pursuing a variance for this parameter from DHEC. If adopted, it must also be approved by EPA to be used for CWA purposes. Because the final result of those processes will not be known for some time, the permit is being drafted to reflect current SC water quality requirements. See Fact Sheet Item 5 for compliance schedule rationale. The permit includes a reopener in the event a modification is needed to implement any variance that is ultimately adopted and approved.

Parameter: Acute WET:
Proposed Condition: < 50% mortality in 100% effluent in 48 hours

Justification:

Imposition of a chronic WET monthly average limit without a corresponding daily maximum limit to protect against acutely toxic effects may lead to an excursion of South Carolina's narrative water quality criterion cited below (Rule 61-68.E.5.d):

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses (except classified uses within mixing zones as described in this regulation), existing water uses, or which are harmful to human, animal, plant, or aquatic life."

Also, compliance with a chronic WET monthly average limit alone may not guarantee that acutely toxic conditions would not occur on a given day. Thus, an acute WET permit limit at the end of the pipe is authorized and required by CWA §§ 301(b)(1)(C) and 402(a)(1), as well as 40 C.F.R. Sections 122.44(d)(1)(vii)(A) and 122.44(d)(5). Authority is also provided by SC Rules 61-68.E.1, E.4.a, E.5.c, E.5.d, and E.14.c.10.

Although no facility-specific acute WET data are available, EPA's March 1991 "Technical Support Document for Water Quality-based Toxics Control" does provide guidance on assessing RP for the need for permit limits without effluent monitoring data for a given facility and the need to take into account, where appropriate, the factors and requirements of 40 C.F.R. Section 122.44(d)(1)(ii).

Regarding dilution, because the facility's instream waste concentration is 85%, 88%, and 89% at lowflow conditions for Tiers 1, 2, and 3, respectively, and thus accounts for the majority of the receiving stream, there is a higher potential for toxic effect due to the low amount of available dilution. Also, the position of the outfall in the middle of the approximately 15-foot wide, shallow receiving stream limits the ability to provide safe passage to aquatic organisms at lowflow conditions. These factors support the need for a daily maximum acute WET permit limit applied at the end of the pipe.

Regarding existing controls on point sources of pollution, the only point source upstream of the discharge is a water treatment facility with an intermittent discharge of filter backwash water that is deemed not to be present during most lowflow conditions; the nearest point source downstream of the discharge is the City of Abbeville wastewater plant, two miles downstream. Because the facility is a textile facility, it is considered to be a primary industrial category by EPA and of principal toxicity concern. Also, the daily maximum values for aluminum (1.25 mg/l) and copper (0.339 mg/l) reported in the permittee's February 3, 2005 permit application exceed EPA's and/or South Carolina's corresponding acute aquatic life criteria (aluminum - 0.75 mg/l; copper - 0.012 mg/l). In addition, the 107/108 chronic WET test failures cited above are indicative of a toxic discharge. These factors also support the need for a daily maximum acute WET permit limit applied at the end of the pipe.

Regarding existing controls on nonpoint sources of pollution, their effect is assumed to be negligible at background lowflow conditions.

Based on the above factors and determinations, it is the BPJ of the permit writer that the discharge also has the RP to cause, or contribute to, excursions of South Carolina's Rule 61-68.E.5.d due to acute toxicity. Thus, an acute WET limit at the end of the pipe is also authorized and required by 40 C.F.R. Sections 122.44(d)(1)(i), (ii), and (v).

Because use of multiple test species with different sensitivities can more effectively characterize exposure to different pollutants and effluent variability, EPA believes the combined use of two test species to assess impacts on survival will better maintain and protect South Carolina's surface waters at all times from substances harmful to aquatic life, as specified in SC Rule 61-68.E.5.d above. EPA is thus using the results from Ceriodaphnia dubia and Pimephales promelas (fathead minnow) in the

chronic WET tests to assess the survival endpoint at 48 hours in this permit. Use of these two WET test species is consistent with past Regional practice. Authority to require two test species to assess the acute WET survival endpoint is provided by CWA §§ 301(b)(1)(C), 308(a), and 402(a)(2), as well as 40 C.F.R. Sections 122.44(j)(1), (j)(4), and 122.48(a) and (b). Use of two WET test species is also consistent with the definitions of "acute", "aquatic toxicity test", "biological monitoring", "propagation", and "whole effluent toxicity" at SC Rules 61-68.B.3, B. 9, B.19, B.48, and B.62, respectively, and with SC Rules 61-68.E.14.c.10 and E.17. The use of two WET species is also consistent with the definition for "Freshwaters" found at SC Rule 61-68.G.10. Authority to use results from 40 C.F.R. Part 136 chronic WET methods to assess compliance with the survival endpoint for an NPDES permit acute WET limit is provided by CWA §§ 308(a) and 402(a)(2), as well as 40 C.F.R. Section 122.41(j)(4), and SC Rules 61-68.E.14.c.10 and 17.

Best Management Practices/Pollution Prevention Conditions:

The requirements in Part III.C are based on §§ 304(e) and 402(a)(2) of the CWA and are consistent with the policy of the Pollution Prevention Act of 1990. The ~~conditions~~ are intended to also use best management practices (BMP) to control plant site runoff, spillage, or leaks and drainage from raw material storage areas that may contribute significant amounts of toxic pollutants to navigable waters. These conditions do not require the permittee to incorporate pollution prevention measures that would jeopardize efficient operation or result in an unreasonable economic burden. A BMP plan developed as a requirement of the previous NPDES permit for this facility will satisfy the requirements of this part if it addresses practices to reduce the likelihood of spills or other releases of oil or oil contaminated water, water treatment chemicals, cleaning chemicals, and biocides that may enter waters of the United States. These conditions do not apply to storm water BMP provisions already required under a multi-sector general permit.

Macroinvertebrate Assessment:

Results from these assessments will aid in determining whether this discharge is complying with: 1) South Carolina's narrative criterion at Rule 61-68.E.5.c:

"All ground waters and surface waters of the State shall at all times, regardless of flow, be free from sewage, industrial, or other waste which produce taste or odor or change the existing color or physical, chemical, or biological conditions in the receiving waters or aquifers to such a degree as to create a nuisance, or interfere with classified water uses (except classified uses within mixing zones as described in this regulation) or existing water uses.";

2) SC Rules 61-68.C.3 and 7, regarding protection of all uses and existing and classified uses of downstream waters; and 3) SC Rule 61-68.F.1.c., "the objective of maintaining and improving all surface waters to a level that provides for the survival and propagation of a balanced indigenous aquatic community." The required assessment is consistent with the definitions of "biological assessment" and "biological monitoring" at SC Rules 61-68.B.17 and 19, respectively - results from the assessment will indicate compliance with water quality standards and document water quality trends. Authority for such monitoring is also provided by CWA §§ 308(a) and 402(a)(2), 40 C.F.R. Sections 122.43 and 122.48(a), as well as SC Rules 61-68.E.1, 4.a, 17.b, and F.1.d. It is the BPJ of the permit writer that

conducting one assessment/year during critical lowflow conditions is sufficient to assess compliance with the SC Rules cited above. The permit may be modified to change the sampling frequency if a variance for chronic WET and/or copper is adopted by SC and approved by EPA.

Antimony and Zinc:

The March 29, 1996 current NPDES permit includes concentration limits for antimony and mass limits for zinc. The fact sheet for that permit indicates that these limits are water quality-based. A review of the June 24, 2005 DHEC RP spreadsheet analyses indicates no RP for either antimony or zinc to cause, or contribute to, exceedances of SC's aquatic life criteria. Therefore, based on the BPJ of the permit writer, these limits will not be retained in the draft permit.

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4. Requested Variances or Alternatives to Required Standards

None.

5. Effective Date of Proposed Effluent Limits and Compliance Schedule

- For all parameters except those specified below, the permittee shall achieve compliance with the effluent limitations immediately upon the permit effective date.

For total recoverable copper and chronic WET, the previous permit required monitoring only. Based on the rationale provided above, there is RP for both parameters to exceed State water quality criteria and limits are required. Because this is the first time such limits are being applied to this facility and because compliance cannot be achieved immediately, the facility is eligible for a compliance schedule. It is the BPJ of the permit writer that a compliance schedule of 21 months can be given to implement these limits. This is consistent with 40 C.F.R. Section 122.47(a)(1), where compliance is required as soon as possible.

6. State Certification Requirements

State certification of the proposed permit will be deemed waived if not provided within 60 days of EPA's request, per 40 C.F.R. Section 124.53(c)(3).

7. Discussion of Previous NPDES Permit Conditions

The NPDES permit (issued March 29, 1996, effective May 1, 1996, modified October 1, 1998, and expired April 30, 2001) contained the following final permit conditions:

Tier 1 - 51,000 lbs/day of woven finished fabric production at flowrate of 0.668 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	— (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	— (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	455	910
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	2550	5100
Total Chromium, lbs/day	2.55	5.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.746	1.491
Sulfide, lbs/day	5.6	10.2
Phenols, lbs/day	2.55	5.10
Zinc, lbs/day	1.97	2.15
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

Tier 2 - 61,000 lbs/day of woven finished fabric production at flowrate of 0.744 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	544	1090
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	3050	6100
Total Chromium, lbs/day	3.05	6.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.736	1.472
Sulfide, lbs/day	6.1	12.2
Phenols, lbs/day	3.05	6.10
Zinc, (lbs/day)	2.17	2.37
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

Tier 3 - 71,000 lbs/day of woven finished fabric production at flowrate of 0.820 MGD

Parameters	Discharge Limitations	
	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), March-October	--- (95)	50 (190)
Biochemical Oxygen Demand 5-day (BOD ₅), mg/l (lbs/day), November-February	--- (153)	50 (306)
Total Suspended Solids (TSS), lbs/day	633	1266
Ammonia as N, mg/l	Report	Report
Chemical Oxygen Demand (COD), lbs/day	3550	7100
Total Chromium, lbs/day	3.55	7.10
Copper, lbs/day	Report	Report
Antimony, mg/l	0.728	1.456
Sulfide, lbs/day	7.1	14.2
Phenols, lbs/day	3.55	7.10
Zinc, lbs/day	2.37	2.59
Dissolved Oxygen, mg/l, March-October	minimum of 6.0	
Dissolved Oxygen, mg/l, November-February	minimum of 5.0	
pH, SU	6.0 to 8.5	
Chronic Whole Effluent Toxicity	Report Daily Maximum	

8. EPA Contact

Additional Information concerning the permit may be obtained at the address and during the hours noted in Section 9 from :

Ms. Ann Brown
Public Notice Coordinator
404-562-9288

9. The Administrative Record, including application, draft permit, fact sheet, public notice (after release), comments received, and additional information is available by writing the EPA, Region 4, or for review and copying at 61 Forsyth St., SW, Atlanta, GA 30303-8960, between the hours of 8:15 A.M. and 4:30 P.M., Monday Through Friday. Copies will be provided at a minimal charge per page.

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10. Proposed Schedule for Permit Issuance

Draft Permit to Applicant	June 28, 2005
Request CWA § 401 Certification	September 15, 2005
Public Notice Date	September 15, 2005
Proposed Issuance Date	December 1, 2005
Proposed Effective Date	January 1, 2006

11. Procedures for the Formulation of Final Determinations

a. Comment Period

The Environmental Protection Agency proposes to issue an NPDES permit to this applicant subject to the aforementioned effluent limitations and special conditions. These determinations are tentative and open to comment from the public.

Interested persons are invited to submit written comments on the draft permit to the following address:

Water Management Division
Environmental Protection Agency
Sam Nunn Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960
ATTN: Ann Brown, Public Notice Coordinator

All persons, including applicants, who believe any condition of a draft permit is inappropriate or that the Director's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). Any supporting materials which are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consist of State or Federal statutes and regulations, EPA documents of general applicability, or other generally available reference materials. Commenters shall make supporting materials not already included in the administrative record available to EPA as directed by the Regional Administrator. (A comment period longer than 30 days may be necessary to give commenters a reasonable opportunity to comply with the requirements of this section. Additional time shall be granted as per 40 C.F.R. Section 124.10 to the extent that a commenter who requests additional time demonstrates the need for such time.)

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All comments received within thirty (30) days following the date of public notice, or if the public comment period is extended, by the end of the public comment period, will be considered in the formulation of final determinations with regard to proposed permit issuance.

b. Public Hearing

The EPA Regional Administrator will hold a public hearing if there is a significant degree of public interest in a proposed permit or group of permits, or may hold a public hearing, at his discretion, if useful information and data may be obtained thereby. Public Notice of such a hearing will be circulated at least thirty days prior to the hearing.

c. Issuance of the Permit

After consideration of all written comments and of the requirements and policies in the CWA and appropriate regulations, and, if a public hearing is held, after consideration of all comments, statements and data presented at the hearing, the EPA Regional Administrator will make determinations regarding the permit issuance. Under 40 C.F.R. Section 124.14, the Regional Administrator may reopen the public comment period if this could expedite the decision making process. If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning the permit, the Regional Administrator may prepare a new draft permit, a revised fact sheet or statement of basis, and reopen the public comment period limited to those substantial new questions that caused the reopening.

After the close of the public comment period on a draft permit, the Regional Administrator shall issue a final permit decision, including a response to comments. The Regional Administrator will so notify the applicant, all persons submitting written comments, all persons that have requested notice of the final permit decision, and, if a public hearing was held, all persons participating in the hearing.

d. Appeal of NPDES Permits

Within 30 days after an NPDES final permit decision has been issued, any person who filed comments on that draft permit or participated in the public hearing may petition the Environmental Appeals Board (EAB) to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The 30-day period within which a person may request review under this section begins with the service of notice of the Regional Administrator's action unless a later date is specified in that notice. The petition shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by the NPDES regulations and when appropriate, a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

Further information regarding the appeal of NPDES permits may be found under 40 C.F.R. Section 124.19.

e. Stays of Contested Permit Conditions

- (1) If an appeal for review of an NPDES permit decision is timely filed, the effect of the contested permit conditions shall be stayed and shall not be subject to judicial review pending final agency action. Uncontested permit conditions shall be stayed only until the date specified in paragraph (2) of this section below. If the permit involves a new source, new discharger, or a recommencing discharger, the applicant shall be without a permit for the proposed new source or discharger pending final agency action.
- (2) Uncontested conditions which are not severable from those contested shall be stayed together with the contested conditions. The Regional Administrator shall identify the stayed provisions of permits for existing facilities. All other provisions of the permit for the existing facility, become fully effective and enforceable 30 days after the date of the notification.

- (3) The Regional Administrator shall, as soon as possible after receiving notification from the EAB of the filing of a petition for review, notify the EAB, the applicant, and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit as of the date specified in paragraph (2) of this section. For NPDES permits, the notice shall comply with the requirements of 40 C.F.R. Section 124.60(b).

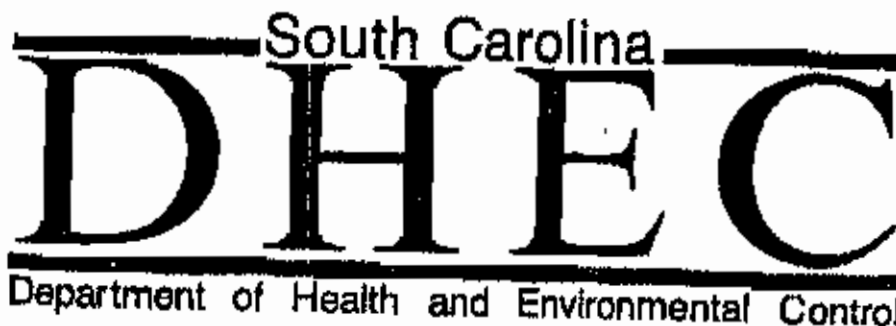
Any facility holding an existing NPDES permit must, to the extent conditions of any new permit are stayed under this section, comply with the conditions of the existing permit which correspond to the stayed conditions, unless compliance with the existing conditions would be technologically incompatible with compliance with other conditions of the new permit which have not been stayed.

Further information regarding the effectiveness of the ~~NPDES~~ **DRAFT** permits may be found under 40 C.F.R. Sections 124.16 and 124.60.



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EXHIBIT D



**THE SOUTH CAROLINA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL CONTROL TOXIC CONTROL
STRATEGY FOR WASTEWATER DISCHARGES**

Draft October 1990

DRAFT

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DRAFT

I. PURPOSE AND SCOPE

This document presents the strategy by which the South Carolina Department of Health and Environmental Control (SCDHEC) will control the discharge of toxics from a point source into surface waters of the State.

II. AUTHORITY

South Carolina Pollution Control Act

The South Carolina Department of Health and Environmental Control's (DHEC) authority to require permits to discharge to the State's waters and the derivation of water quality standards for waters of the State are specified in South Carolina's Pollution Control Act (Title 48, Chapter 1 of the South Carolina Code of Laws, 1976, as amended). Federal authority for the issuance of discharge permits is established under Section 303 and Section 402 of the Federal Clean Water Act.

Water Quality Standards (Regulation 61-68)

South Carolina's Water Quality Standards state that all surface waters shall at all times be free from toxic substances attributable to a wastewater discharge in concentrations or combinations which are harmful to human, animal, plant or aquatic life except as provided by a mixing zone.

National Pollutant Discharge Elimination System Permits (Regulation 61-9)

The South Carolina National Pollutant Discharge Elimination System Permit (NPDES) Regulation requires that prior to any discharge of wastewater into waters of the State, the owner/operator must apply to and obtain from DHEC a NPDES permit. In the case of each permit issued, appropriate limitations will be derived in order to provide for the protection of aquatic communities and human health.

III. NPDES PERMITTING STRATEGY : WHOLE-EFFLUENT TOXICITY

All industrial and municipal NPDES permits, both Major and Minor, will be evaluated to determine the need for appropriate chemical-specific limitations, conventional pollutant limitations and whole effluent toxicity requirements. Chemical-specific limitations for conventional and non-conventional wastestream constituents have been and will continue to be placed in NPDES permits. The Department will place a pass/fail limitation for whole effluent toxicity (WET) on all major NPDES permits (unless determined by the Department to be unnecessary), minor NPDES permits with complex wastewaters, and minor municipalities as appropriate. The Department may place a limitation for whole effluent toxicity on any other NPDES permit if deemed necessary.

As existing NPDES permits are reissued, whole effluent toxicity monitoring and reporting requirement will be placed on the permit and will require a frequency of once per month for the first year unless determined by the Department that a lesser monitoring and reporting frequency is appropriate. The permit will also specify that if a permittee fails a test during that year, the permittee must submit a toxicity evaluation plan to the Bureau of Water Pollution Control's Enforcement Section within sixty (60) days. This requirement, if appropriate, reissued permits will allow for the screening of a permittees waste for whole-effluent toxicity and, if toxicity occurs, require that the permittee take corrective action. Once in compliance, a permit limitation will be established in the permit.

If no failures occur during the one (1) year period of required screening, a limitation for whole effluent toxicity monitoring will become effective, and the Department may reduce the frequency of sampling if deemed appropriate.

If sufficient whole effluent toxicity testing information exists to

determine that an existing NPDES discharger can meet a whole effluent toxicity limitation, the Department may place a whole effluent toxicity limitation at the time of reissuance without providing for a screening process in the permit. If data exists indicating that a permittee can not pass a whole effluent toxicity test, a schedule of compliance shall be incorporated into NPDES permit along with a compliance data for achieving a whole effluent toxicity limit.

It is also the Department's intent to place the above biological monitoring requirements in appropriate permit modifications to existing permits.

All NPDES permits issued to new facilities will be evaluated to determine if whole effluent toxicity testing is necessary. If deemed necessary, the permit for a new facility will include a whole effluent toxicity limit and no screening period will be provided.

IV. NPDES PERMIT LIMIT DERIVATION FOR TOXICS

NPDES permit applications and other effluent specific data will be evaluated for chemical-specific toxic constituents (both aquatic life and human health) and whole effluent toxicity to determine the need for permit specific limitations and/or monitoring requirements.

A. Chemical Specific Approach for Toxics

Each pollutant identified in the NPDES permit application with the potential to be toxic will be evaluated for aquatic and human health considerations. This evaluation will be based on the State Water Quality Classifications & Standards (Regulation 61-68), National Water Quality Criteria, and any other published information for specific pollutants for which the Environmental Protection Agency has not developed national criteria. The limit of detection in an NPDES permit application shall be evaluated to determine the lowest

achievable detection limit as indicated by the analytical method ~~used~~ used. Also, it must be shown that analyses were performed by a DHEC certified laboratory. If a numeric detection limit is not provided, the permittee will be asked to submit the numeric level of detection achieved in the analysis of that pollutant.

1. Aquatic Life

Numeric criteria for all surface waters have been adopted by the State of South Carolina for toxic pollutants for which the Environmental Protection Agency (EPA) has published national criteria to protect aquatic life pursuant to Section 304(a) of the Federal Clean Water Act including ammonia and chlorine. The parameter and the numeric criteria are listed in Appendix A.

a.1. Application for National Criteria (S.C. Water Quality Standards) to Protect Aquatic Life in South Carolina.

- (1) The not-to-be exceeded value for national criteria published in 1980 or the one-hour average value for national criteria published in 1985 or later shall be used as an acute toxicity number for calculating effluent limitations.
- (2) The 24-hour average for national criteria published in 1980 or the four-day average for national criteria published in 1985 or later shall be used as a chronic toxicity number for calculating effluent limitations.
- (3) If metals concentrations for national criteria are hardness-dependent; the chronic and acute concentrations shall be based on 50 mg/l hardness if the

ambient hardness is less than 50 mg/l. Concentrations shall be based on the actual mixed stream hardness if it is greater than 50 mg/l.

- (4) If separate national criteria are given for fresh and salt waters, they shall be applied as appropriate.
- (5) If the State develops site-specific criteria for any substances for which EPA had developed national criteria, the site-specific criteria will supersede the national criteria.

a.ii. Application of Published Toxicity Information to Protect Aquatic Life

The Department may use the following scenario if appropriate:

- (1) If only an acute toxicity concentration for a particular constituent is given as an LC_{50} , the LC_{50} will be divided by 100 for an acceptable instream concentration in order to protect against chronic toxicity effects.
- (2) If a chronic toxicity concentration for a particular constituent is given, it will be divided by 10 for an acceptable instream concentration in order to protect against chronic toxicity.
- (3) If both acute and chronic information is given, the limit based on the chronic criterion shall be used.

b. Derivation of Effluent Limits

- (1) The aquatic-life-based effluent limits for the NPDES permit will be based on 7Q10 flows unless otherwise determined by the Department (such as consideration of tidal dilution).
- (2) S.C. Water Quality Standards (National criteria) for substances listed in Appendix A will be used by the Department to derive NPDES permit effluent limits for new and existing wastewater discharges except as provided for in (4) and (5) below.
- (3) The effluent (end of the pipe) limit for a particular pollutant will be derived from mass based calculations for allowable instream concentrations of that particular pollutant according to the following equation:

$$\text{Effluent limit} = \frac{\text{Stream 7Q10} + \text{Design Flow (if appropriate)}}{\text{Design Flow}} \times \text{Allowable Instream Concentration}$$

Note: The above equation assumes a non-detectable amount of the constituent in the receiving stream.

- (4) When the derived effluent limit is below the limits of analytical detectability for a substance, either the derived effluent limit will include an accompanying statement in the permit that the detection limit using specified analytical methods will be considered as being in compliance with the limit or an effluent limit based on limits of detectability may be established containing requirements for biological assessments of effluent

toxicity. Additionally, if naturally occurring instream concentrations for a substance are higher than the derived limit, the Department may establish permit limits at a level higher than the derived limit, but no higher than the natural background concentration. In such cases, the Department may require effluent toxicity tests and/or instream monitoring.

- (5) ~~Site-specific permit effluent limits and alternate~~ criteria less stringent than those derived in accordance with Sections b.(2) and (4) above may be derived where it is demonstrated that such limits and criteria will maintain classified and existing uses, adequate opportunity for public participation in such derivation process has occurred, and the effluent will not cause criteria for human health to be exceeded. Where a site-specific permit effluent limit and alternate criterion has been derived, such derivation shall be subject to EPA review as appropriate. At a minimum, the opportunity for public input in ~~derivation of a site-specific permit effluent limit~~ and alternate criterion will be provided via public notice in NPDES permit notices.

c. Site-Specific Permit Effluent Limits and Alternate Criteria.

The following information must be supplied to the Department for evaluation of a site-specific permit

effluent limit and alternate criteria for acute and chronic aquatic life protection. It should be noted that alternate criteria shall not be allowed above a human health standard/criteria.

- (1) An evaluation of criteria documents to determine appropriateness of any proposed alternate criteria to a specific site. For example, an evaluation of the species utilized in developing the criteria number and its relevance to state waters, or an evaluation of criteria test method utilized versus testing methods required by the permit (i.e., acid soluble versus total metal analysis).
- (2) Since chemical-specific limits are derived from a broad base of toxicity information, it should be based on data from some minimum number of species/trophic levels to insure an adequate representation of the aquatic community. Therefore, algae, macroinvertebrates, and fish should be represented by Selenastrum capricornatum, Ceriodaphnia dubia, and Pimephales promelas, respectively. A minimum of eleven definitive chronic toxicity tests should be conducted (including the IWC) with each species to determine the NOEC, or the 5% inhibition concentration (IC5). Additional tests may be necessary if test results are variable. A sample must be taken to determine the concentration of each parameter for each toxicity test performed.

- (3) Instream assessments, if deemed appropriate by the Department are to be provided as well as any other site specific data which may be available in the published or unpublished literature.
- (4) Determination of site-specific pollutant(s) of concern are to be provided along with proposed new site-specific permit effluent limits and alternate standard. Justification must be given for each proposed new effluent limit.

If a site-specific permit effluent limit is acceptable to the Department, the following shall be placed in the NPDES permit to ensure that classified and existing uses are maintained:

- (1) At a minimum, monthly whole effluent toxicity testing with selected sensitive species and an appropriate whole effluent toxicity limitation.
- (2) At a minimum, quarterly macroinvertebrate studies and/or other aquatic community studies at specified monitoring frequencies.

2. Human Health

- (a) Proposed State ambient water quality standards to protect human health, which have been approved by the Board of the South Carolina Department of Health and Environmental Control, are listed in Appendix B.

These proposed standards will be applied to develop permit effluent limitations using average annual flows or average tidal dilutions, at the receiving waters, whichever is appropriate. The Department will consider

new or revised EPA criteria for adoption as standards by South Carolina when published in final form by EPA. When the derived effluent limit for human health protection is below the limits of analytical detectability for a substance, an accompanying statement in the permit will indicate that the measurement and reporting of the substance below the detection limit using approved analytical methods will be considered as being in compliance with the limit. Additionally, if the natural instream concentration for a substance is higher than the derived limit, the Department may establish permit limits at a level higher than the derived limit, but no higher than the instream natural conditions at flow conditions described above.

- (b) The human health criteria/standard proposed do not preclude the Department from considering health effects of other pollutants or from considering new or revised EPA criteria when developing effluent conditions.
- (c) The Department may require biological monitoring in NPDES permits to determine if any bioaccumulative effects occurs as a result of the presence of specific pollutants in a wastewater discharge.
- (d) A list of proposed State water quality standards based on organoleptic data (prevention of undesirable taste and odor), are listed in Appendix C. For those substances which have both proposed human health and organoleptic proposed standards, the more stringent of the two will be used for the purposes of derivation of

effluent limits. All other applications of these proposed standards stated in (a), (b) and (c) above, will also apply.

B. Biological Monitoring Approach for Toxics

Since the chemical-specific approach of establishing effluent limits for wastewater discharges does not address all specific chemicals and/or possible chemical interactions, a more comprehensive testing requirement such as biological monitoring is needed for complex wastewaters.

There are several different types of biological monitoring techniques that are currently being utilized.

*Whole Effluent Toxicity Testing

- Acute toxicity testing
- Chronic toxicity testing

*Instream Assessment

- Benthic macroinvertebrate
- Other communities

*Bioaccumulation Assessment

- Finfish or other aquatic organism tissue

1. Whole Effluent Toxicity Testing

a. Acute toxicity testing

The South Carolina Water Classifications and Standards identified that no instream acute toxicity is allowed. In order to ensure that a permitted wastewater discharge is in compliance with this requirement (assuming complete mix cannot be attained, i.e. by diffusing) the following test will be required.

A pass/fail 48-hour static acute test shall be conducted comparing a control and 100% effluent. The test shall be

conducted using Ceriodaphnia dubia as the test organism and in accordance with the most recent "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA/600/4-85/013) and "South Carolina Procedures for Pass/Fail Modifications of the Ceriodaphnia 48 hour Acute Toxicity Test and Ceriodaphnia Survival and Reproduction Test" (SCDHEC, May 1989). The raw data and results shall be submitted in accordance with Part I.(C)(3) of the permit for each test. If the test results indicate a significant difference in Ceriodaphnia dubia survival between the control and 100% waste concentration at the 95% confidence level ($p=0.05$), the test shall be deemed a failure.

The Department may specify other acute methods and test organisms if deemed appropriate.

b. Chronic toxicity test

Based on the South Carolina Pollution Control Act and South Carolina Water Classification and Standards, no chronic toxicity will be allowed instream after the discharged effluent has completely mixed with the dischargers receiving stream. In order to ensure that a permitted wastewater discharge is in compliance with this provision, an effluent specific instream waste concentration (IWC) will be determined using the following equation:

$$IWC = \frac{\text{Design Flow (100)}}{\text{River 7Q10} + \text{Design Flows}}$$

The permit will then require that the effluent quality be sufficient to demonstrate an absence of chronic toxicity effects by conducting pass/fail chronic toxicity tests using

a Ceriodaphnia dubia 3 brood survival and reproduction toxicity test comparing a control with an instream waste concentration.

The test shall be conducted in accordance with the most recent "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA/600/5-89/01) and "South Carolina Procedures for Pass/Fail Modifications of the Ceriodaphnia 48 hour Acute Toxicity Test and Ceriodaphnia Survival and Reproduction Test" (SCDHEC, May 1989). The raw data and results shall be submitted to the Department in accordance with Part I.(C)(3) of the permit for each test. If the test results indicate a significant difference in Ceriodaphnia dubia reproduction or survival between the control and instream waste concentration at the 95% confidence level ($p=0.05$), the test shall be deemed a failure.

The Department may specify other chronic testing methods and test organisms if deemed appropriate.

2. **Instream Assessment**

Instream assessments used to detect biological impacts due to point discharges should follow the most recent "Biological Field and Laboratory Methods for Measuring the Quality of Surface Waters and Effluents" (EPA-670/4-73-001) as guidance for writing proposed biological studies. The proposed study must be submitted to DHEC for review and approval prior to implementation. Instream assessments will be required in NPDES permits where deemed appropriate.

3. **Bioaccumulation Assessment**

Bioaccumulation assessments will be utilized for dischargers

for which there may be a concern for the accumulation of constituents in tissues of aquatic organisms. The prime determining factor in requiring bioaccumulative testing will be to allow for the evaluation of the accumulation of chemical specific pollutants in tissues and the potential human health impacts due to the presence of those pollutants.

Bioaccumulation assessment proposals must be submitted to DHEC for review and approval prior to implementation.

4. Laboratory Certification

All biological and chemical analytical work performed in order to meet the requirements of the NPDES permit must be done by a Department-certified laboratory.

C. Other Permit Limit Derivation Considerations

In deriving chemical-specific limitations, the permit writer shall review the NPDES permit application and establish permit limitations based on the most stringent of the two values providing for the protection of aquatic life and human health. However, as a rule of thumb, if the derived limitation is greater than that of the reported amount in the NPDES application by 50% for at least 4 analysis or 100 to 200% for a single analysis, no limitation will be required.

As noted earlier, to make sure that Water Quality Standards are met with respect to the whole effluent, acute and/or chronic toxicity testing will be required in all major industrial & municipal NPDES permits (unless determined otherwise by the Department as not necessary) as well as minor NPDES permits with complex effluents and minor municipalities as appropriate. The type of whole effluent testing will be based on whether or not the facility discharges

wastewater by way of a diffuser or not and the instream waste concentration (IWC) of the discharge wastewater.

The presence or absence of an instream diffuser for the discharge of wastewater from a facility and the corresponding IWC of discharged wastewater will affect the type of effluent toxicity testing required according to the following table:

Whole Effluent Toxicity Required

Diffuser	NT	C	C	C
No Diffuser	A	A	A&C	C
IWC	0%	1%	10%	80% 100%

NT = no toxicity testing required
 A = acute toxicity testing
 C = chronic toxicity testing

In the case of a facility without a diffuser that has an IWC of less than 10%, only an acute toxicity test will be required, because a 10 to 1 Acute/Chronic Ratio is predicted to be exceeded after dilution. When the acute/chronic ratio becomes less than 10 to 1, both acute and chronic toxicity testing will be necessary unless an appropriate diffuser is in place. As the IWC approaches 80%, there will be four times as much wastewater as stream flow and instantaneous mixing will be assumed. This condition will result in a requirement for chronic toxicity testing only. If a diffuser is in place and the instream waste concentration is less than 1% no toxicity testing will be required, unless otherwise deemed appropriate by the Department.

The test organism specified for use in whole effluent acute and chronic toxicity testing is Ceriodaphnia dubia. If the

Department determines that a more sensitive species for a particular effluent is appropriate, that species may become the required test organism. If the permittee wishes to use an alternate species, the permittee must demonstrate that the alternate species is of equal or greater sensitivity to the permittees effluent than that required by the Department.

Instream assessments will be utilized where whole effluent toxicity testing is not appropriate. (Example, if the discharge is stormwater.)

V. STATE MIXING ZONE STRATEGY

The Water Quality Standards allow for the establishment of a mixing zone in which one or more specified water quality standards or classified uses are not applicable. The following stipulations will be taken into account when establishing a mixing zone: (1) the size of the mixing zone shall be kept to a minimum and may be determined on an individual-project basis considering biological, chemical, engineering, hydrological and physical factors; (2) mixing zones shall not be acutely toxic to aquatic organisms, shall allow safe passage of aquatic organisms, and shall allow for the protection and propagation of a balanced indigenous population of aquatic organisms in and on the water body; (3) the mixing zone size shall be based on critical flow conditions; and (4) the mixing zone shall not be an area of waste treatment and it shall not interfere with or impair existing recreational uses, existing drinking water supply uses, existing industrial or agricultural uses, or existing classified shellfish harvesting uses.

If the permittee does not install a full length diffuser, then by design they are not obtaining the benefit of nor will they receive allowance for full instream flow at 7Q10 conditions. Only that portion

of stream flow which passes over the diffuser at 7Q10 conditions will be considered by the Department in dilution calculations.

VI. TOXICITY EVALUATION PLAN

In order to appropriately address any unacceptable toxicity detected through required toxicity testing, NPDES permits requiring whole effluent toxicity testing will stipulate that as soon as a toxicity test failure occurs in the whole effluent toxicity screening process, a Toxicity Evaluation Plan must be submitted by the permittee to the Department within sixty (60) days of notification to the Department of test results and is to include a compliance schedule describing when each phase will be initiated and completed as well as when the preliminary engineering report and final plans and specifications will be submitted. Toxicity evaluation plans can take several forms, however, the following is a listing of the topics recommended for inclusion in a draft toxicity evaluation plan for submittal to the Department.

Toxicity Evaluation Plan

Preliminary Review

- *Facility Housekeeping Evaluation
- *Chemical Use Evaluation
- *Treatment System Performance Evaluation

Phase I: Toxicity Characterization

- *Initial toxicity tests to determine the variability of the observed toxicity and estimate the LC_{50} .
- *Baseline toxicity tests for comparison to characterization test results.
- *Characterization tests to classify toxicant

Phase II: Toxicity Identification

- *Toxicity tests to identify ammonia
- *Tests and analyses to identify cationic metals
- *Fractionation and GC/MS to identify non-polar organic compounds

Phase III: Toxicity Confirmation

- *Correlation approach
- *Species sensitivity approach
- *Spiking approach
- *Mass balance approach

Toxicity Reduction

- *Preliminary Engineering Report
- *Final Plans and Specifications
- *Compliance with Biological Limitations

EPA has prepared documents which present recommendations on approaching toxicity evaluations and reductions which can be used as guides in preparing and implementing toxicity evaluation plans. Document references will be provided to the permittee upon request.

APPENDIX A

S.C. Aquatic Life Standards/Criteria
(allowable instream concentrations)

COMPOUNDS	FRESHWATER		SALTWATER	
	CRITERION MAXIMUM CONC. (ug/l)	CRITERION CONTINUOUS CONC. (ug/l)	CRITERION MAXIMUM CONC. (ug/l)	CRITERION CONTINUOUS CONC. (ug/l)
Arsenic	360 III	190 III	69 III	36 III
Cadmium (II)	1.79	0.66	43	9.3
Chromium (III)	984	117	-	-
Chromium (VI)	16	11	1100	50
Copper	9.2	6.5	2.9	2.9
Lead	34	1.3	140	5.6
Mercury	2.40	0.012	2.1	0.025
Nickel	789	88	75	8.3
Selenium	260	35	-	-
Silver	1.23	-	2.3	-
Zinc	65	59	95	86
Cyanide	22	5.2	1	
Pentachlorophenol (pH)	5.5	3.5	13	7.9
Aldrin	4		1.3	
Chlordane	2.4	0.0043	0.09	0.004
4-4' DDT	1.1	0.001	0.13	0.001
Dieldrin	1.0	0.0019	0.71	0.0019
a-Endosulfan	0.22	0.056	0.034	0.0087
Endrin	0.18	0.0023	0.037	0.0023
Heptachlor	0.52	0.0038	0.053	0.0036
PCB-1242 (PCB)		0.014		0.03
PCB-1254 (PCB)		0.014		0.03
PCB-1221 (PCB)		0.014		0.03
PCB-1232 (PCB)		0.014		0.03
PCB-1248 (PCB)		0.014		0.03
Ammonia	*	*	*	*
Chlorine (TRC)	19	11	13	7.5

*Reference P885-227114 (NTISH)
50FR 39784, Jul. 29, 1983

APPENDIX B

Appendix B

WATER QUALITY CRITERIA FOR PROTECTION OF HUMAN HEALTH
(all values are in ug/l unless otherwise noted)

PRIORITY POLLUTANTS

Arsimony	4308
Arsenic	1.4
Beryllium	1.17
Cadmium	10
Chromium (III)	673077
Chromium (VI)	50
Lead	50
Mercury	0.153
Nickel	4584
Selenium	10
Silver	50
Thallium	48
Cyanide	200
Asbestos	30000 f/l
2,3,7,8-TCDD-Dioxin	1.2 ppq
Acrolein	780
Acrylonitrile	6.65
Benzene	5
Bromoform	100
Carbon tetrachloride	5
Chlorobenzene	488
Chlorodibromomethane	100
2-Chloroethylvinyl Ether	176
Chloroform	100
Dichlorobromomethane	100
1,2-Dichloroethane	5
1,1-Dichloroethylene	7
1,3-Dichloropropylene (Cis & Trans)	1691
Ethylbenzene	28718
Methyl Bromide	4708
Methyl Chloride	4708

PRIORITY POLLUTANTS

Methylene Chloride	15780
1,1,2,2-Tetrachloroethane	108
Tetrachloroethylene	88.5
Toluene	301941
1,2-Trans-Dichloroethylene	136319
1,1,1-Trichloroethane	200
1,1,2-Trichloroethane	419.9
Trichloroethylene	5
Vinyl Chloride	2
2,4-Dichlorophenol	3090
2-Methyl-4,6-Dinitrophenol	765
2,4-Dinitrophenol	14264
Pentachlorophenol	1010
Phenol	3500
2,4,6-Trichlorophenol	36
Acenaphthylene	0.311
Anthracene	0.311
Benzidine	0.00535
Benzo(a)Anthracene	0.311
Benzo(a)Pyrene	0.311
3,4-Benzofluoranthene	0.311
Benzo(ghi)Perylene	0.311
Benzo(k)Fluoranthene	0.311
Bis(2-Chloroethyl)Ether	14.2
Bis(2-Chloroisopropyl)Ether	174400
Bis(2-Ethylhexyl)Phthalate	59.2
Butylbenzyl Phthalate	5202
Chrysene	0.311
Dibenzo(a,h)Anthracene	0.311
1,2-Dichlorobenzene	17432
1,3-Dichlorobenzene	2600
1,4-Dichlorobenzene	75

f/l: Number of fibers per liter of water - based on consumption of water only.
ppq: parts per quadrillion

PRIORITY POLLUTANTS

3,3-Dichlorobenzidine	0.2
Diethyl Phthalate	118019
Dimethyl Phthalate	2900000
Di-n-Butyl Phthalate	12100
2,4-Dinitrotoluene	91
1,2-Diphenylhydrazine	5.4
Fluoranthene	54
Fluorene	0.311
Hexachlorobenzene	0.0074
Hexachlorobutadiene	497
Hexachlorocyclopentadiene	206
Hexachloroethane	88.5
Indeno(1,2,3-cd)Pyrene	0.311
Isophorone	491746
Nitrobenzene	1863
N-Nitrosodimethylamine	81.2
N-Nitrosodi-n-Propylamine	85.5
N-Nitrosodiphenylamine	162
Phenanthrene	0.311
Pyrene	0.311
Aldrin	0.0136
a-BHC	0.131
b-BHC	0.46
g-BHC	0.625
Chlordane	0.00588
4-4'-DDT	0.0059
Dieldrin	0.00144
a-Endosulfan	1.99
b-Endosulfan	1.99
Endrin	0.2

PRIORITY POLLUTANTS

Heptachlor	0.00214
Heptachlor Epoxide	0.001
PCB-1242	0.00045
PCB-1254	0.00045
PCB-1221	0.00045
PCB-1232	0.00045
PCB-1248	0.00045
PCB-1260	0.00045
PCB-1016	0.00045
Toxaphene	0.0075

Appendix C

WATER QUALITY CRITERIA BASED ON ORGANOLEPTIC DATA
(Prevention of Undesirable Taste and Odor)
(all values are in ug/l unless otherwise noted)

PRIORITY POLLUTANTS

Copper	1000
Zinc	5000
Chlorobenzene	20
2-Chlorophenol	0.1
2,4-Dichlorophenol	0.3
2,4-Dimethylphenol	400
3-Methyl-4-Chlorophenol	3000
Pentachlorophenol	30
Phenol	300
Acenaphthene	20
Hexachlorocyclopentadiene	1

Appendix D

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

I. During the period beginning on (See Part III., Special Condition #7) of this Permit and lasting through the effective date the permittee is authorized to discharge from outfall(s) serial number(s) 001:

Such discharge shall be limited and monitored by the permittee as specified below:

	<u>EFFLUENT CHARACTERISTICS</u>		<u>DISCHARGE LIMITATIONS</u>		<u>MONITORING REQUIREMENTS</u>	
	<u>kg/day (lbs/day)</u> <u>Monthly</u> <u>Average</u>	<u>Daily</u> <u>Max.</u>	<u>Other Units (Specify)</u> <u>Monthly</u> <u>Average</u>	<u>Daily</u> <u>Max.</u>	<u>Measurement</u> <u>Frequency</u>	<u>Sample</u> <u>Type</u>
(1) Biological Monitoring (Whole Effluent Acute Toxicity Testing)	-	-	-	0 (1)	1/month (1)	Grab
(2) Biological Monitoring (Whole Effluent Chronic Toxicity Testing)	-	-	-	0 (2)	1/month (2)	(2)

- (1) See Part III., Special Condition #5 a,b,c,d,e
- (2) See Part III., Special Condition #6 a,b,c,d,e

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at or near the discharge, but prior to mixing with the receiving stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through (See Part III., Special Condition #7) the permittee is authorized to discharge from outfall(s) serial number(s) 001:

Such discharge shall be limited and monitored by the permittee as specified below:

	<u>EFFLUENT CHARACTERISTICS</u>		<u>DISCHARGE LIMITATIONS</u>		<u>MONITORING REQUIREMENTS</u>	
	<u>kg/day (lbs/day)</u> Monthly Average	<u>kg/day (lbs/day)</u> Daily Max.	<u>Other Units (Specify)</u> Monthly Average	<u>kg/day (lbs/day)</u> Daily Max.	<u>Measurement Frequency</u>	<u>Sample Type</u>
Biological Monitoring (Whole Effluent Acute Toxicity Testing)	-	-	-	-	MR (1)	1/month (1) Grab
Biological Monitoring (Whole Effluent Chronic Toxicity Testing)	-	-	-	-	MR (2)	1/month (2) (2)

- (1) See Part III., Special Condition #5 a,b,d,e
- (2) See Part III., Special Condition #6 a,b,d,e

MR = Monitor and Report

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at or near the discharge, but prior to mixing with the receiving stream.

Acute Toxicity Language

5. (a) On a monthly basis, a 48 hour static acute toxicity test shall be conducted using a control and 100% effluent. The test shall be conducted using Ceriodaphnia dubia as the test organism and in accordance with the most recent "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA/600/4-85/013) and "South Carolina Procedures for Pass/Fail Modifications of the Ceriodaphnia 48 hour Acute Toxicity Test and Ceriodaphnia Survival and Reproduction Test" (SCDHEC, May 1989). The raw data and results shall be submitted in accordance with Part I.(C)(3) of the permit for each monthly test. The test must be performed by a DHEC certified laboratory.
 - (b) If the test results indicate a significant difference in Ceriodaphnia dubia survival between the control and 100% waste concentration at the 95% confidence level ($p=0.05$), the test shall be deemed a failure.
 - (c) If a test fails, a toxicity evaluation plan shall be submitted to the Enforcement Section of the Bureau of Water Pollution Control within sixty (60) days of notification to the Department of test results.
 - (d) The permittee must indicate on the discharge monitoring report forms whether the test passes or fails. If the test fails, the number "1" shall be placed on the form, if the test passes, the number "0" shall be placed on the form.
 - (e) Twelve consecutive acceptable months of toxicity testing results may result in quarterly testing in lieu of monthly tests at the Departments discretion.
6. After twelve consecutive months of "passed" toxicity testing results, the Department may terminate the screening process and impose a limitation. Page _____ of the permit shall become effective and page _____ shall expire on the first day of the month after the Department informs the permittee in writing.

Chronic Toxicity Language

- 6.(a) On a monthly basis, a three-brood chronic toxicity test shall be conducted using a control and the instream waste concentration (IWC) of _____ . The test shall be conducted using Ceriodaphnia dubia as the test organism and in accordance with the most recent "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA/600/5-89/01) and "South Carolina Procedures for Pass/Fail Modifications of the Ceriodaphnia 48 hour Acute Toxicity Test and Ceriodaphnia Survival and Reproduction Test" (SCDHEC, May 1989). The raw data and results shall be submitted in accordance with Part I.(C)(3) of the permit for each monthly test. The test must be performed by a DHEC certified laboratory.
- (b) If the test results indicate a significant difference in Ceriodaphnia dubia survival and/or reproduction between the control and instream waste concentration at the 95% confidence level ($p=0.05$), the test shall be deemed a failure.
- (c) If a test fails, a toxicity evaluation plan shall be submitted to the Enforcement Section of the Bureau of Water Pollution Control within sixty (60) days of notification to the Department of test results.
- (d) The permittee must indicate on the discharge monitoring report forms whether the test passes or fails. If the test fails, the number "1" shall be placed on the form, if the test passes, the number "0" shall be placed on the form.
- (e) Twelve consecutive acceptable months of toxicity testing results may result in quarterly testing in lieu of monthly tests at the Department's discretion.
7. After twelve consecutive months of "passed" toxicity testing results, the Department may terminate the screening process and impose a limitation. Page _____ of the permit shall become effective and page _____ shall expire on the first day of the month after the Department informs the permittee in writing.
- 8.(a) On a monthly basis, a 48-hour static acute toxicity test shall be conducted using a control and 100% effluent. The test shall be conducted using Mysidopsis bahia as the test organism and in accordance with the most recent "Methods for Measuring and Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA/600/4-85/013). The raw data and results shall be submitted to the Department in accordance with Part I(C)(3) of this permit for each monthly test. The test must be performed by a DHEC certified laboratory.
- (b) If the test results indicate a significant difference in Mysidopsis bahia survival between the control and 100% waste concentration at the 95% confidence level ($p=0.05$), the test shall be deemed a failure.
- (c) If a test fails, a toxicity evaluation plan shall be submitted to the Enforcement Section of the Bureau of Water Pollution Control within sixty (60) days of notification to the Department of test results.

- (d) The permittee must indicate on the discharge monitoring report forms whether the test passed or failed. If the test failed, the number "1" shall be placed on the form. If the test passed, the number "0" shall be placed on the form.
 - (e) Twelve consecutive acceptable months of toxicity testing results may result in quarterly testing in lieu of monthly tests.
9. After twelve consecutive months of "passed" toxicity testing results, the Department may terminate the screening process and impose a limitation. Page 9 of the permit shall become effective and Page 8 shall expire on the first day of the month after the Department informs the permittee in writing.