



Georgia-Pacific Corporation
Consumer Products

100 Mill Supply Road
P. O. Box 3333
Crossett, AR 71635
(870) 567-8000
(870) 364-9076 fax
www.gp.com

November 15, 2007

Mr. Dennis Benson
NPDES Enforcement Section
Arkansas Department of Environmental Quality
P.O. Box 8913
Little Rock, AR 72219-8913

Reference: Georgia-Pacific Corporation: Crossett Paper Operations
NPDES Permit # **AR0001210**

Dear Mr. Benson:

Georgia-Pacific Corporation is pleased to submit this application to modify permit AR0001210 and to update chloroform monitoring from the three bleach plant lines at the Crossett Paper Operations. G-P currently has data meeting chloroform certification requirements as defined in 40 CFR 430.02(f) and is seeking to combine both the renewal and acceptance of the chloroform certification option in one action. Therefore, enclosed please find the permit modification application with relevant attachments including information supporting the chloroform certification.

If you have any questions or need additional information, please call me at (870) 567-8144.

Sincerely,

A handwritten signature in cursive script that reads 'James W. Cutbirth'.

James W. Cutbirth
Environmental Services Superintendent
Georgia-Pacific Crossett Paper Operations

Arkansas Department of Environmental Quality
NPDES PERMIT APPLICATION
FORM 1

INSTRUCTIONS:

1. This form should be **typed or printed in ink**. If insufficient space is available to address any item please continue on an attached sheet of paper.
2. Please complete the following Section (s):

Sections	A	B	C	D	E	F	G	H	I
POTW	X	X	X	X					X
Industrial User	X	X	X	X	X	X	X		X
Construction Permit Only	X	X	*	X				X	X
Modification	X	X	X	X	X	*	*		X
All Other Applicants	X	X	X	X	X				X

* As necessary

3. If you need help on SIC or NNAICS go to www.osha.gov/oshstats/sicser.html
4. If you have any questions about this form you may call NPDES Section at 501-682-0622 or go to www.adeq.state.ar.us/water . You may also contact :

Department	Information in Regard to	Telephone #
Arkansas Department of Health	Water Supply	501-661-2623
Department of Interior	USGS Hydrologic Unit Codes and Area Map	501-296-1877

5. Use the following information for Section B:

Scale of Map Information: 1:250,000 (1"=20,833') 1:62,500 (1"=5,208') 1:63,000 (1"=5,250') 1:25,000 (1"=2,083')
1:20,000 (1"=1,667') 1:63,500 (1"=5,292') 1:24,000 (1"=2,000') 1:63,360 (1"=5,280') unknown
Method is used information: 1 - Address Mapping 2 - Aerial Photo w/ Ground Control 3 - Cadastral Survey
4 - State Plan Coord. System Conv. 5 - Township-Section-Rng Sys. Conv
6 - UTM Coordinates Conversion 7 - Raw Photo Extraction 8 - GPS Survey
9 - LORAN-C Navigation Device A - Map Interpolation B - Navigation Quality GPS
C - Remote Sensing D - ZIP Code Centroid U - Unknown
Datum of the Map Information: 1 - North American Datum 1927 ; 2 - North American Datum 1983 ; U - Unknown
Technical Accuracy information: 1 - nearest 10th of a second ; 2 -nearest second; 3 -nearest 10 seconds; 4 -30 seconds;
5 -nearest minute; 6 -nearest 10 minutes; 7 -nearest 30 minutes; 8 -nearest degree

6. The following EPA Forms in addition to Form 1 is required for processing your application:

Form 2A - Municipal Dischargers
Form 2C - Existing Manufacturing, Commercial, Mining, and Silvicultural Operations
Form 2D - New Sources and New Dischargers Application for Permit to Discharge Process Wastewater
Form 2F - Application for Permit to Discharge Storm Water Discharges Associated With Industrial Activity
Form 2E - Facilities Which Do Not Discharge Process Wastewater (i.e. Domestic, Non contact cooling water)

**NPDES PERMIT APPLICATION
FORM 1**

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION
POST OFFICE BOX 8913
LITTLE ROCK, AR 72219
www.adeq.state.ar.us/water

PURPOSE OF THIS APPLICATION

- INITIAL PERMIT APPLICATION FOR NEW FACILITY
- INITIAL PERMIT APPLICATION FOR EXISTING FACILITY
-
- MODIFICATION OF EXISTING PERMIT
- REISSUANCE (RENEWAL) OF EXISTING PERMIT
- MODIFICATION AND CONSTRUCTION OF EXISTING PERMIT
- CONSTRUCTION PERMIT
-

SECTION A- GENERAL INFORMATION

1. Facility Name: Georgia-Pacific LLC (Crossett Paper Operations)
2. Legal Applicant Name (If the applicant is different from the above): _____
3. Operator name: Rachel Childress / Jim Cutbirth License number: 008956 / 008958 class of wastewater operator:
Industrial License
4. Is the operator identified in number 3 above, the owner of the facility? Yes No
5. NPDES Permit Number (If Applicable): AR0001210
6. NPDES General Permit Number (If Applicable): ARG
7. NPDES General Storm Water Permit Number (If Applicable): ARR00A776
8. Does your facility hold any other permits which are not listed above? Yes No
9. Permit Numbers and/or names of any permits issued by ADEQ or EPA for an activity located in Arkansas that is presently held by the applicant or its parent or subsidiary corporation:

<u>Permit Name</u>	<u>Permit Number</u>	<u>Held by</u>
Operating Air Permit	597-AOP-R11	GEORGIA PACIFIC COOPERATION, CROSSETT
Hazardous Waste	ARD035466648	GEORGIA PACIFIC COOPERATION, CROSSETT

	270-S3N-R2	GEORGIA PACIFIC COOPERATION, CROSSETT
Solid Waste Disposal Facility		
Solid Waste Disposal Facility	292-S3N	GEORGIA PACIFIC COOPERATION, CROSSETT
Water NPDES Storm runoff	ARR00A776	GEORGIA PACIFIC COOPERATION, CROSSETT

10. Driving directions to the facility with respect to known landmarks:
On the North side of Highway 82 West in Crossett, AR

11. Give a driving direction to the wastewater treatment plant:

Going west on Highway 82 from the papermill, go approximately 1 mile before turning left onto Texas avenue. Go approximately 2 miles and turn right. Proceed until you hit a T in the road noting where the primary clarifier is located.

12. Facility Physical Location: (Attach a map with location marked; street, route no. or other specific identifier)

Street: 100 Mill Supply Road

City: Crossett County: Ashley State: AR Zip: 71635

13. Facility Mailing Address for permit, DMR, and Invoice (Street or Post Office Box):

Name: James W Cutbirth Title: Supt. Environmental Services

Street: 100 Mill Supply Road P.O. Box 3333

City: Crossett State: AR Zip: 71635

E-mail address: james.cutbirth@gapac.com Fax: 870-364-9076

14. Neighboring States Within 20 Miles of the permitted facility (Check all that apply):

Oklahoma Missouri Tennessee Louisiana Texas Mississippi

15. Type of ownership: Public Private State Federal Other

16. Indicate applicable Standard Industrial Classification (SIC) Codes and NAICS codes for primary processes

2621,2611,2631, SIC Facility Activity under this SIC or NAICS: The business produces a variety of paper, towel, 2436/2439, tissue, paperboard, and pulp products. Wastewater is also received from three adjoining G-P 2821/2861/2869 Operations (plywood, stud mill, Chemical (urea formaldehyde).

NAICS

17. Design Flow: 100 MGD Highest Monthly Average of the last two years Flow: 47.9 MGD

18. Is Outfall equipped with a diffuser? Yes No

19. Responsible Official (as described on the last page of this application):

Name: Dickinson Karen R. Title: VP - MFG
 Address: 100 Mill supply Road Phone Number: (870) 567-8305
 E-mail: karen.dickinson@gapac.com
 Address:
 City: Crossett State: Arkansas Zip: 71635

20. Designated Facility Contact (as describe on the last page of this application):

Name: Karen Dickinson Title: VP - MFG
 Address: 100 Mill supply Road Phone Number: (870) 567-8305
 E-mail: karen.dickinson@gapac.com
 Address:
 City: Crossett State: Arkansas Zip: 71635

21. Name, address and telephone number of consulting engineer firm (If none, so state):

Contact Name:	None		
Company Name:	None		
Address:		Phone Number:	
E-mail Address:			
City:		State:	
		Zip:	

SECTION B: FACILITY AND OUTFALL INFORMATION

1. Facility Location (All information must be based on front door (Gate) of the facility):

Lat: 33 ° 08 ' 30 " Long: 91 ° 58 ' 12 " Section: 18 Township: 175
 Range: 8w County: Ashley Nearest Town: Crossett USGS Hydrologic Unit Code: 8040202
 What map scale is used? 1:24,000 What Method is used? A-Map interpolation Indicate Technical Accuracy 4-30seconds
 What map datum is used? 1-North America Datum 1927 Where is the collection point? 2-Front door of facility

2. Outfall monitoring Location:

Outfall No. 001 :

Latitude: 33 ° 06 ' 45 " Longitude: 92 ° 02 ' 17 "
 USGS Hydrologic Unit Code: 8040202 What map scale is used? 1:24,000 What Method is used? A-Map interpolation
 Indicate Technical Accuracy 4-30 seconds What map datum is used? I-north America Datum 1927 Where is the collection point?
 Name of Receiving Stream (i.e. an unnamed tributary of Mill Creek, thence into Mill Creek; thence into Arkansas River):
 Thence to Mossy Lake

Outfall No. 002 :

Lat: 33 ° 02 ' 00 " Long: 92 ° 04 ' 24 "
 USGS Hydrologic Unit Code: 8040202 What map scale is used? 1:24,000 What Method is used? A-Map interpolation
 Indicate Technical Accuracy 4-30 seconds What map datum is used? I-north America Datum 1927 Where is the collection point?
 Name of Receiving Stream (i.e. an unnamed tributary of Mill Creek, thence into Mill Creek; thence into Arkansas River):
 Thence to Mossy Lake

3. Outfall Location (If the location of end of the pipe (Discharge point) is different from the above monitoring location

Outfall No. _____ :

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

Outfall No. _____:

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

Outfall No. _____:

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

4. Type of Treatment system (Included all components of treatment system and Attach the process flow diagram):

Primary treatment by clarifier and settling basins. Equalization by a surge basin.

Biological treatment by an aerated stabilization basin(ASB) and Mossy Lake.

5. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current: Flow Metering	<input checked="" type="checkbox"/> Yes	Type _____ CONTINUOUS _____	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Sampling Equipment	<input checked="" type="checkbox"/> Yes	Type _____ AUTOMATIC _____	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Planned: Flow Metering	<input type="checkbox"/> Yes	Type _____	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Sampling Equipment	<input type="checkbox"/> Yes	Type _____	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

If yes, please indicate the present or future location of this equipment on the sewer schematic and describe the equipment below

The automatic sampling equipment and continuous flow metering equipment are located at the locations P1,P2 and P3 locations on the Sewer schematic

6. Is the proposed or existing facility located above the 100-year flood level? Yes No

NOTE: FEMA Map must be included with this application. Maps can be ordered at www.fema.gov.

If "No", what measures are (or will be) used to protect the facilities? All storm water associated with the GP Crossett mill flows to the WWTP.

7. Population 6097

SECTION C – WASTE STORAGE AND DISPOSAL INFORMATION

1. Sludge Disposal Method (Check as many as are applicable):

Landfill

Landfill Site Name North Landfill ADEQ Solid Waste Permit No. 292-S3N

Land Application ADEQ State Permit No. _____

Method of sludge treatment _____

What is the estimated amount of sludge generated at the treatment facility?

Dry metric Ton/ per year _____ Gallon/Acres per year _____

List all the land application sites with the following information:

Field Number	New/Old	Range	Township	Section	Total Acres	Available Acres	Crop Cover	Loading Rate
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

Septic tank Arkansas Department of Health Permit No.: _____

Distribution and Marketing : Facility receiving sludge: _____

Name: _____ Address: _____
 City: _____ State: _____ Zip: _____ Phone: _____
 Rail: Pipe: Other: _____

Subsurface Disposal (Lagooning)

Location of lagoon _____ How old is the lagoon? _____
 Surface are of lagoon: _____ Acre Depth: _____ Ft Does lagoon have a liner? Yes No

Incineration : Location of incinerator _____

Other (Provide complete description) Land application to the sludge pond.

SECTION D - WATER SUPPLY

Water Sources (check as many as are applicable):

Private Well - Distance from Discharge point: Within 5 miles Within 50 miles

Municipal Water Utility (Specify City): _____

Distance from Discharge point: Within 5 miles Within 50 miles

Surface Water- Name of Surface Water Source: GP Lake/Saline river

Distance from Discharge point: Within 5 miles Within 50 miles

Lat: 33 ° 15 ' 075 " Long: 92 ° 02 ' 554 "

Other (Specify): _____

Distance from Discharge point: Within 5 miles Within 50 miles

SECTION E: FINANCIAL ASSURANCE AND DISCLOSURE FORM

1. Act 336 of 1995 provides for financial assurance requirements for permitting common sewage systems. Arkansas Code 8-5-703 (a)(1)-The Department of Pollution Control and Ecology shall not permit or register any common sewage system serving two(2) or more occupied lots, residences, businesses, or other discernible occupied init without the applicant first demonstrating to the department its financial ability to cover the costs of operating and maintaining the system for a period of five (5) years.

Please provide **financial assurance** in order to shows that the facility is able to cover the costs of operating and maintaining the treatment system for the next five years.

The minimal financial assurance may be demonstrated to the department (Arkansas Code 8-5-703(a)(2)):

- A. By obtaining insurance;
- B. By passing a financial test;
- C. By obtaining a letter of credit;
- D. By obtaining a surety bond;
- E. By obtaining a trust fund or escrow account;
- F. Through the use of a combination of insurance, financial test, letter of credit, surety bond, trust fund, or escrow account.

2. Disclosure Statement:

Arkansas Code Annotated Section 8-1-106 requires that all applicants for the issuance, or transfer of any permit, license, certification or operational authority issued by the Arkansas Department of Environmental Quality (ADEQ) file a disclosure statement with their applications. The filing of a disclosure statement is mandatory. No application can be considered complete without one. The form may be obtained from ADEQ web site at:

http://www.adeg.state.ar.us/disclosure_stmt.pdf

Declaration of No Changes:

The violation history, experience and credentials, involvement in current or pending environmental lawsuits, civil and criminal, have not changed since the last Disclosure Statement I filed with ADEQ on (Date of last disclosure unknown) (Date of submittal).

Not required /applicable per ADEQ guidance

Signature of Individual or Authorized Representative of Firm or Legal Entity

The following statement must be completed for Declaration of No Changes.

VERIFICATION AND ACKNOWLEDGEMENT - Not required/applicable per ADEQ guidance

The Applicant agrees to provide any other information the director of the Arkansas Department of Environmental Quality may require at any time to comply with the provisions of the Disclosure Law and any regulations promulgated thereto. The Applicant further agrees to provide the Arkansas Department of Environmental Quality with any changes, modifications, deletions, additions or amendments to any part of this Disclosure Statement as they occur by filing an amended Disclosure Statement.

DELIBERATE FALSIFICATION OR OMISSION OF RELEVANT INFORMATION FROM DISCLOSURE STATEMENTS SHALL BE GROUNDS FOR CIVIL OR CRIMINAL ENFORCEMENT ACTION OR ADMINISTRATIVE DENIAL OF A PERMIT, LICENSE, CERTIFICATION OR OPERATIONAL AUTHORIZATION.

State of _____

County of _____

I, _____, swear and affirm that the information contained in the previous Disclosure Statement is true and correct to the best of my knowledge, information and belief.

APPLICANT SIGNATURE: _____

COMPANY TITLE: _____

Date _____

SUBSCRIBED AND SWORN TO BEFORE ME THIS DAY _____ OF _____ 20

NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

SECTION F – INDUSTRIAL ACTIVITY

1. Does an effluent guidelines limitation promulgated by EPA (<http://www.epa.gov/epacfr40/chapt-I.info/chi-toc.htm>) under Section 304 of the Clean Water Act (CWA) apply to your facility?

YES (Answer questions 2 and 3) NO

2. What Part of 40 CFR? 122

3. What Subpart (s) ? 44(d) _____

4. Give a brief description of all operations at this facility including primary products or services (attach additional sheets if necessary):

Attachment enclosed

5. Production: (projected for new facilities)

Product(s) Manufactured (Brand name)	Last 12 Months		Highest Production Year of Last 5 Years	
	lbs/day		lbs/day	
	Highest Month	Days of Operation	Monthly Average	Days of Operation

SECTION G -- WASTEWATER DISCHARGE INFORMATION

Facilities that checked "Yes" in question 1 of Section F are considered Categorical Industrial Users and should skip to question 2.

1. **For Non-Categorical Users Only:** List average wastewater discharge, maximum discharge, and type of discharge (batch, continuous, or both), for each plant process. Include the reference number from the process flow schematic (reference Figure 1) that corresponds to each process. [New facilities should provide estimates for each discharge.]

No.	Process Description	Average Flow (GPD)	Maximum Flow (GPD)	Type of Discharge (batch, continuous, none)

3. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current: Flow Metering	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Sampling Equipment	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Planned: Flow Metering	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Sampling Equipment	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

If yes, please indicate the present or future location of this equipment on the sewer schematic and describe the equipment below:

The automatic sampling equipment and continuous flow metering equipment are located at the locations P1,P2 and P3 locations on
Sewer schematic

4. Are any process changes or expansions planned during the next three years that could alter wastewater volumes or characteristics?

Yes No (If no, skip Question 5)

5. Briefly describe these changes and their effects on the wastewater volume and characteristics

SECTION H - TECHNICAL INFORMATION

Technical information to support this application shall be furnished in appropriate detail to understand the project. Information in this Part is required for obtaining a **construction permit** or for **modification** of the treatment/disposal system.

1. Describe the process for wastewater treatment. Include the types control equipment to be installed along with their methods of operation and control efficiency.

Not required

2. One set of construction plans and specifications, approved (Signed and stamped) by a **Professional Engineer (PE) registered in Arkansas** must be submitted as follows:

- a. The plans must show flow rates in addition to pertinent dimensions so that detention times, overflow rates, and loadings per acre, etc. can be calculated.
- b. Specifications and complete design calculations.
- c. All treated wastewater discharges should have a flow measuring device such as a weir or Parshall flume installed. Where there is a significant difference between the flow rates of the raw and treated wastewater, a flow measuring device should be provided both before and after treatment.

3. If this application includes a construction permit disturbing five or more acres, a storm water construction permit must be obtained by submitting a notice of intent (NOI) to ADEQ.

SECTION I: SIGNATORY REQUIREMENTS

The information contained in this form must be certified by a responsible official as defined in the "signatory requirements for permit applications" (40 CFR 122.22).

Responsible official is defined as follows:

Corporation, a principal officer of at least the level of vice president

Partnership, a general partner

Sole proprietorship: the proprietor

Municipal, state, federal, or other public facility: principal executive officer, or ranking elected official.

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. I further certify under penalty of law that all analyses reported as less than detectable in this application or attachments thereto were performed using the EPA approved test method having the lowest detection limit for the substance tested.

Signature of responsible official:

Karen Dickinson

Date: 11/15/07

Printed name of responsible official:

Karen R. Dickinson

Official title of responsible official:

Vice-President, Manufacturing

Telephone Number 870-567-8305

By signature in Section I above, the applicant certifies that the named individual is qualified as print below to act as a duly authorized representative under the provisions of 40 CFR 122.22(b). (NOTE: If no duly authorized representative is designated in this section, the Department considers the applicant to be the responsible official for the facility and only reports, etc., signed by the applicant will be accepted by the Department).

Cognizant Official (Duly Authorized Representative)

40 CFR 122.22(b) states that all reports required by the permit, or other information requested by the Director, shall be signed by the applicant (or person authorized by the applicant) or by a duly authorized representative of that person. A person is duly authorized representative only if:

- (1) the authorization is made in writing by the applicant (or person authorized by the applicant);
- (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity responsibility, or an individual or position having overall responsibility for environmental matters for the company.

The applicant hereby designates the following person as a cognizant official, or duly authorized representative, for signing reports, etc., including Discharge Monitoring Reports (DMR) required by the permit, and other information requested by the Director:

NAME (first, last)

TITLE

TELEPHONE

Chloroform Concentration based on Monthly Average

Month	1A, lbs/day		1B, lbs/day		L2, lbs/day
Jan-05	0.52		0.62		0.86
Feb-05	0.52		0.77		1.00
Mar-05	0.55		0.78		1.14
Apr-05	0.43		0.61		0.93
May-05	0.54		0.45		1.14
Jun-05	0.40		0.50		1.30
Jul-05	0.43		0.50		1.07
Aug-05	0.42		0.45		1.23
Sep-05	0.55		0.51		1.55
Oct-05	0.54		0.59		1.29
Nov-05	0.52		0.60		1.38
Dec-05	0.41		0.54		1.17
Jan-06	0.52		0.59		1.03
Feb-06	0.49		0.46		0.94
Mar-06	0.56		0.53		1.25
Apr-06	0.56		0.55		0.93
May-06	0.36		0.44		0.67
Jun-06	0.63		0.68		0.97
Jul-06	0.68		0.71		0.89
Aug-06	1.09		0.74		0.90
Sep-06	0.74		0.62		0.84
Oct-06	0.61		0.65		0.90
Nov-06	0.57		0.73		1.01
Dec-06	0.52		0.74		0.90
Jan-07	0.47		0.63		0.81
Feb-07	0.78		1.05		1.22
Mar-07	0.79		1.22		1.01
Apr-07	0.78		1.11		1.16
May-07	0.61		1.18		1.02
Jun-07	0.25		0.84		0.67
Jul-07	0.71		1.06		0.92
Aug-07	0.70		1.05		1.07
Sep-07	0.51		0.95		0.79
Oct-07	0.65		0.82		0.80

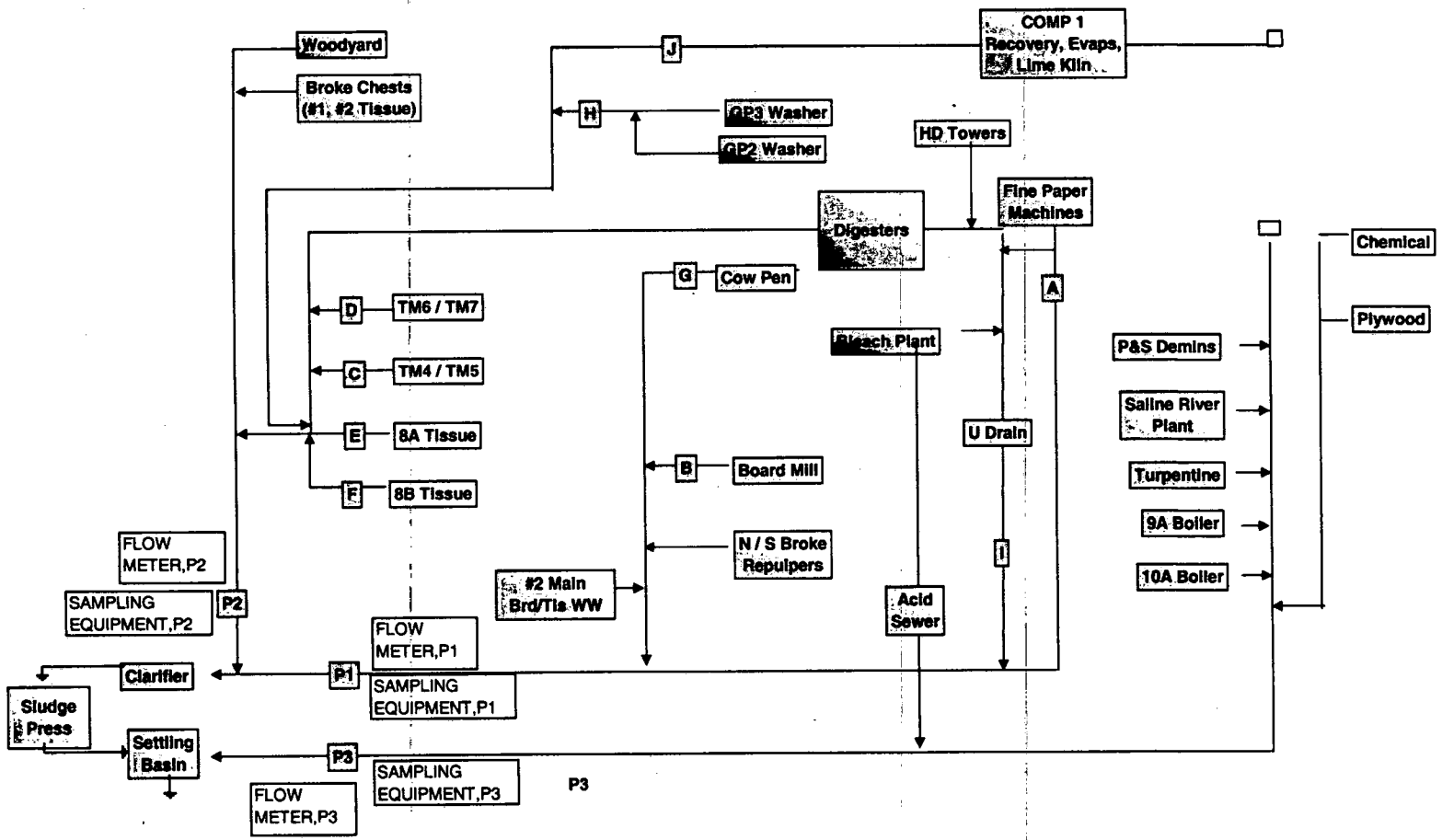
Chloroform Concentration on each sample date

	1A, lbs/day		1B, lbs/day		L2, lbs/day
1/2/2005	0.62		0.74		0.91
1/9/2005	0.57		0.73		1.25
1/16/2005	0.43		0.51		0.76
1/23/2005	0.49		0.53		0.70
1/30/2005	0.50		0.59		0.68
2/6/2005	0.63		0.83		1.23
2/13/2005	0.37		0.67		0.89
2/20/2005	0.53		0.67		0.97
2/27/2005	0.56		0.91		0.92
3/6/2005	0.54		0.73		0.96
3/13/2005	0.66		0.96		1.55
3/20/2005	0.33		0.61		1.01
3/27/2005	0.68		0.81		1.06
4/3/2005	0.51		0.66		0.93
4/10/2005	0.45		0.76		1.25
4/17/2005	0.48		0.60		0.91
4/24/2005	0.30		0.42		0.61
5/1/2005	0.63		0.69		1.11
5/8/2005	0.70		0.57		1.12
5/15/2005	0.50		0.10		1.25
5/22/2005	0.50		0.49		1.35
5/29/2005	0.37		0.40		0.88
6/5/2005	0.31		0.35		1.00
6/12/2005	0.45		0.55		2.04
6/19/2005	0.31		0.40		1.05
6/26/2005	0.54		0.70		1.12
7/7/2005	0.20		0.24		0.91
7/10/2005	0.38		0.50		0.92
7/17/2005	0.57		0.75		1.22
7/24/2005	0.54		0.52		1.26
7/31/2005	0.47		0.48		1.03
8/7/2005	0.40		0.39		0.77
8/14/2005	0.41		0.42		1.47
8/21/2005	0.51		0.58		1.40
8/28/2005	0.37		0.42		1.28
9/4/2005	0.53		0.50		1.78
9/12/2005	0.51		0.56		1.56
9/18/2005	0.62		0.56		1.56
9/25/2005	0.53		0.42		1.32
10/7/2005	0.43		0.43		1.29
10/9/2005	0.42		0.41		1.37
10/16/2005	0.62		0.75		1.33
10/23/2005	0.60		0.58		1.07
10/30/2005	0.63		0.75		1.36
11/6/2005	0.56		0.55		1.27
11/13/2005	0.57		0.58		1.33
11/20/2005	0.52		0.66		1.44
11/27/2005	0.43		0.59		1.46
12/4/2005	0.48		0.60		1.12

12/11/2005	0.40	0.54	1.02
12/18/2005	0.37	0.43	1.10
12/25/2005	0.39	0.59	1.46
1/1/2006	0.48	0.56	1.10
1/8/2006	0.60	0.67	1.28
1/15/2006	0.53	0.65	1.07
1/22/2006	0.41	0.46	0.77
1/29/2006	0.58	0.63	0.95
2/8/2006	0.46	0.51	1.05
2/12/2006	0.52	0.50	0.96
2/20/2006	0.47	0.31	0.60
2/26/2006	0.50	0.54	1.13
3/7/2006	0.74	0.70	1.64
3/12/2006	0.50	0.64	1.27
3/19/2006	0.62	0.53	1.24
3/26/2006	0.40	0.28	0.84
4/2/2006	0.79	0.82	1.47
4/9/2006	0.56	0.46	0.84
4/16/2006	0.54	0.62	0.93
4/23/2006	0.51	0.43	0.84
4/30/2006	0.40	0.39	0.57
5/7/2006	0.35	0.45	0.64
5/21/2006	0.35	0.42	0.69
5/28/2006	0.37	0.49	0.47
5/29/2006	0.37	0.40	0.88
6/4/2006	0.45	0.37	0.45
6/11/2006	0.78	0.86	1.22
6/18/2006	0.64	0.74	1.24
6/25/2006	0.66	0.76	0.95
7/2/2006	0.68	0.62	0.86
7/9/2006	0.96	1.02	1.27
7/16/2006	0.57	0.60	0.85
7/23/2006	0.65	0.80	0.82
7/30/2006	0.52	0.49	0.66
8/6/2006	0.77	1.06	1.23
8/13/2006	0.68	0.82	1.19
8/20/2006	2.34	0.59	0.57
8/27/2006	0.56	0.50	0.63
9/3/2006	0.76	0.56	0.92
9/10/2006	0.70	0.66	0.89
9/17/2006	0.89	0.75	0.86
9/24/2006	0.60	0.50	0.70
10/1/2006	0.72	0.69	0.77
10/8/2006	0.53	0.51	0.74
10/15/2006	0.69	0.65	0.82
10/22/2006	0.39	0.39	0.68
10/29/2006	0.70	0.99	1.51
11/5/2006	0.72	0.86	0.69
11/12/2006	0.59	0.61	1.03
11/19/2006	0.59	0.93	1.17
11/26/2006	0.37	0.51	1.15
12/3/2006	0.72	0.78	1.17

12/10/2006	0.65	0.81	1.25
12/17/2006	0.69	1.08	1.02
12/24/2006	0.31	0.51	0.64
12/31/2006	0.43	0.58	0.66
1/7/2007	0.30	0.44	0.65
1/15/2007	0.54	0.65	0.66
1/22/2007	0.55	0.72	1.03
1/29/2007	0.49	0.71	0.88
2/4/2007	0.59	0.70	0.77
2/12/2007	0.84	0.98	1.34
2/19/2007	0.71	1.16	1.15
2/27/2007	0.97	1.37	1.64
3/4/2007	0.73	1.03	1.27
3/12/2007	0.88	1.06	1.02
3/19/2007	0.86	1.18	1.07
3/27/2007	0.69	1.61	0.66
4/1/2007	0.69	0.88	0.90
4/11/2007	0.85	1.21	1.03
4/16/2007	0.79	1.22	1.23
4/23/2007	0.86	1.02	1.28
4/30/2007	0.69	1.22	1.35
5/12/2007	0.51	0.80	0.96
5/14/2007	0.61	1.10	0.99
5/21/2007	0.70	1.69	1.26
5/27/2007	0.62	1.14	0.88
6/16/2007	0.00	1.04	0.58
6/20/2007	0.43	0.79	0.68
6/24/2007	0.33	0.68	0.76
7/1/2007	0.48	0.90	0.72
7/8/2007	0.49	0.93	0.85
7/15/2007	0.97	1.06	0.79
7/22/2007	0.58	1.01	0.80
7/28/2007	1.01	1.38	1.44
8/6/2007	0.79	1.67	1.45
8/13/2007	0.64	0.91	1.02
8/19/2007	0.60	0.80	0.90
8/26/2007	0.78	0.81	0.90
9/2/2007	0.64	0.74	0.83
9/10/2007	0.60	0.75	0.81
9/19/2007	0.44	1.05	0.65
9/23/2007	0.48	1.56	0.70
9/30/2007	0.41	0.63	0.98
10/7/2007	0.56	0.75	0.86
10/14/2007	0.76	1.20	0.79
10/21/2007	0.62	0.71	0.82
10/28/2007	0.65	0.60	0.71

SEWER SCHEMATIC OF THE MILL



Process Description

Chips are received at the Mill by truck and rail. Upon unloading, the chips are pneumatically blown to the distribution tower and are then dropped onto the chip piles. Round logs are also received at the facility. After storage, the logs are transported to the debarking drums for bark removal. The debarked logs are fed to the chipper and the produced chips are then conveyed to the chip piles. The chips from the chip piles are screened prior to entering the chip silos. Rejected chips from the screening are burned in the Mill's combination boiler. The removed bark is pneumatically sent to bark piles for storage and eventual use in the Mill's boilers.

The chips from the silos are conveyed to the Mill's thirteen batch digesters. The function of the digesters is to cook the chips using white liquor, black liquor, and the steam from the boilers. In the digestion process, these products are combined and cooked at a set pressure and temperature until the quality pulp is obtained. At the end of each "cook", the blow valves at the bottom of the digesters are opened, with the resulting pressure forcing the pulp mass through a blow line into one of the two blow tanks.

The blow tanks are at atmospheric pressure and the contents of the digesters enter the blow tanks tangentially at the top. When the chips hit the lower pressure in the tank, the liquor and water flash, blowing the chips apart to produce the pulp fibers. The vapors from the blow tanks are sent to the blow heat condensing system, where non-condensable gases (NCGs) are removed. The steam vapors are condensed in the accumulator. The accumulator water is sent to the stripper and returned to the washers as cleaned condensate. Knots (e.g. undercooked wood chips, irregularly shaped or overly thick pieces of wood, etc.) are removed with the use of vibrating knotters/screens.

The pulp is washed to remove spent cooking chemicals. The Mill has two horizontal washers. In the washers, the wash water and pulp move in counter current directions. The washed pulp is passed through screening and cleaning stages which remove debris from the stock. After screening, the pulp passes through the decker system, which thickens the pulp for storage in high density storage chests.

The unbleached Kraft pulp is taken from the high density storage chests for further processing in the bleach plant. The bleaching process removes the remaining lignin and Kraft color from the unbleached pulp. Bleaching is performed in several stages using chlorine dioxide, caustic soda, oxygen, and hydrogen peroxide.

Recovery describes the set of operations that recovers the spent cooking chemicals for reuse in the digesters. The recovery process utilizes a multi-effect evaporator to concentrate weak black liquor. The concentrated black liquor is burned in the Mill's recovery furnace. The spent chemicals leave the recovery furnace from the bottom in a molten form and enter the smelt dissolving tanks. The causticizing operation reacts molten inorganic salts from the smelt dissolving tanks with weak wash water to form green liquor. This green liquor is then treated with slaked lime to form white liquor. The white liquor is then ready for use as the main cooking liquor in the digesters.

The facility, in order to accommodate production levels, may export black liquor to another mill with excess recovery capacity in exchange for white or green liquor. The

'liquor-swapping' is considered routine and normal for the industry, and equipment needed for the exchange has been present since the facility has been built.

Paper products are currently manufactured on eight paper machines and two paper extruding machines. The paper machines include two fine paper machines, one board paper machine, and five tissue machines. Each machine has its own stock preparation, head box, wire section, press section, dryer sections, coater section, calendar stacks, reel, and drum winder. The two fine paper machines produce a variety of products including but not limited to bond, envelope, tablet, and copier paper.

Tissue and towel converting includes the operations involved with converting large parent rolls of tissue/towel from the machines into finished product. This includes rewinding onto smaller sized rolls, folding, printing, cutting, packaging, and shipping.

The two extruding machines receive board from the board paper machine and from outside board customers and apply a polymer coating. Rolls of board are loaded onto an unwind stand before passing through a calendar stack, where they are subjected to burners which flame seal the board. An extruded poly sheet is then pressed together with the board.

pH of Chlorine Dioxide Bleaching Stage

	1A,pH		1B,pH		L2,pH
1/1/05	2.49		2.61		2.15
1/2/05	2.79		2.66		2.07
1/3/05	2.72		2.55		2.10
1/4/05	2.60		2.51		1.97
1/5/05	2.47		2.66		2.04
1/6/05	2.62		2.59		2.07
1/7/05	2.70		2.61		2.08
1/8/05	2.88		2.82		2.02
1/9/05	2.76		2.59		2.07
1/10/05	2.61		2.63		2.08
1/11/05	2.76		3.10		2.19
1/12/05	2.74		2.71		2.09
1/13/05	2.61		2.59		2.06
1/14/05	2.74		2.73		2.05
1/15/05	2.71		2.83		2.01
1/16/05	2.87		2.86		2.01
1/17/05	2.83		2.81		1.70
1/18/05	2.64		2.64		1.99
1/19/05	2.70		2.61		1.88
1/20/05	2.53		2.60		2.07
1/21/05	2.63		2.81		2.01
1/22/05	2.68		2.63		1.99
1/23/05	2.92		2.72		1.91
1/24/05	2.55		2.74		2.03
1/25/05	2.52		2.75		2.01
1/26/05	2.47		2.56		2.08
1/27/05	2.62		2.73		2.19
1/28/05	2.57		2.84		2.07
1/29/05	2.60		2.70		2.09
1/30/05	2.58		2.69		2.00
1/31/05	2.66		2.78		1.91
2/1/05	2.62		2.65		2.03
2/2/05	2.71		2.78		2.17
2/3/05	2.70		2.69		2.18
2/4/05	2.63		2.55		2.13
2/5/05	2.59		2.87		1.78
2/6/05	2.68		2.74		1.86
2/7/05	2.53		2.60		2.08
2/8/05	2.48		2.38		2.17
2/9/05	2.60		2.78		2.01
2/10/05	2.52		2.73		2.02
2/11/05	2.53		2.50		2.00
2/12/05	2.49		2.54		2.01
2/13/05	2.46		2.71		2.10
2/14/05	2.51		2.71		2.02
2/15/05	2.50		2.52		1.87
2/16/05	2.50		2.76		1.77
2/17/05	2.59		2.61		1.87
2/18/05	2.69		2.84		2.06

2/19/05	2.70
2/20/05	2.85
2/21/05	2.40
2/22/05	2.54
2/23/05	2.49
2/24/05	2.64
2/25/05	2.78
2/26/05	2.60
2/27/05	2.55
2/28/05	2.72
3/1/05	2.66
3/2/05	2.58
3/3/05	2.52
3/4/05	2.39
3/5/05	2.55
3/6/05	2.57
3/7/05	2.50
3/8/05	2.68
3/9/05	2.63
3/10/05	2.80
3/11/05	2.59
3/12/05	2.51
3/13/05	2.56
3/14/05	2.60
3/15/05	2.56
3/16/05	2.63
3/17/05	2.96
3/18/05	2.89
3/19/05	2.55
3/20/05	2.67
3/21/05	2.54
3/22/05	2.57
3/23/05	2.59
3/24/05	2.54
3/25/05	2.52
3/26/05	2.69
3/27/05	2.87
3/28/05	2.82
3/29/05	2.62
3/30/05	2.54
3/31/05	2.93
4/1/05	2.51
4/2/05	2.52
4/3/05	2.51
4/4/05	2.52
4/5/05	2.46
4/6/05	2.55
4/7/05	2.59
4/8/05	2.55
4/9/05	2.54
4/10/05	2.64
4/11/05	2.60

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4/13/05	2.66
4/14/05	2.45
4/15/05	2.54
4/16/05	2.59
4/17/05	2.63
4/18/05	2.61
4/19/05	2.53
4/20/05	2.47
4/21/05	2.50
4/22/05	2.58
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4/28/05	2.56
4/29/05	2.35
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5/15/05	2.45
5/16/05	2.60
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7/17/05	2.62
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9/17/05	2.70
9/18/05	2.64
9/19/05	2.60
9/20/05	2.56
9/21/05	2.60
9/22/05	2.64
9/23/05	2.68
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11/6/06	2.78
11/7/06	2.81
11/8/06	2.78
11/9/06	2.76
11/10/06	2.87
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11/12/06	2.91
11/13/06	2.77
11/14/06	2.88
11/15/06	2.76
11/16/06	2.78
11/17/06	2.85
11/18/06	2.89
11/19/06	2.93
11/20/06	2.95
11/21/06	3.03
11/22/06	2.97
11/23/06	2.92
11/24/06	3.01
11/25/06	3.07
11/26/06	2.96
11/27/06	2.46
11/28/06	2.50
11/29/06	2.51
11/30/06	2.54
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12/2/06	2.86
12/3/06	2.79
12/4/06	2.89
12/5/06	2.91
12/6/06	2.73
12/7/06	2.70
12/8/06	2.14
12/9/06	2.38
12/10/06	2.56
12/11/06	2.60
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12/13/06	2.72
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12/15/06	2.68
12/16/06	2.48
12/17/06	2.55
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12/19/06	2.81
12/20/06	2.51
12/21/06	2.59
12/22/06	2.61
12/23/06	2.78
12/24/06	2.63
12/25/06	2.89
12/26/06	2.89

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1/9/07	2.72
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1/16/07	3.06
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2/15/07	2.21
2/16/07	2.36

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4/5/07	2.75
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4/7/07	2.38
4/8/07	2.39
4/9/07	2.46

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4/12/07	2.66
4/13/07	2.68
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5/28/07	2.80
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5/31/07	2.40

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6/1/07	2.23
6/2/07	2.51
6/3/07	2.40
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6/6/07	2.40
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6/13/07	2.14
6/14/07	2.10
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6/16/07	2.10
6/17/07	2.25
6/18/07	2.71
6/19/07	2.52
6/20/07	2.52
6/21/07	2.50
6/22/07	2.31
6/23/07	2.41
6/24/07	2.53
6/25/07	2.82
6/26/07	2.65
6/27/07	2.40
6/28/07	2.49
6/29/07	2.32
6/30/07	2.33
7/1/07	2.35
7/2/07	2.54
7/3/07	2.45
7/4/07	2.29
7/5/07	2.35
7/6/07	2.35
7/7/07	2.43
7/8/07	2.64
7/9/07	2.57
7/10/07	2.36
7/11/07	2.50
7/12/07	2.18
7/13/07	2.40
7/14/07	2.38
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7/17/07	2.71
7/18/07	2.77
7/19/07	2.58
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7/21/07	2.61
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7/23/07	2.57
7/24/07	2.35
7/25/07	2.69
7/26/07	2.52
7/27/07	2.32
7/28/07	2.40
7/29/07	2.66
7/30/07	2.70
7/31/07	2.61
8/1/07	2.54
8/2/07	2.44
8/3/07	2.61
8/4/07	2.80
8/5/07	2.82
8/6/07	2.77
8/7/07	2.53
8/8/07	2.41
8/9/07	2.46
8/10/07	2.39
8/11/07	2.37
8/12/07	2.75
8/13/07	2.67
8/14/07	2.52
8/15/07	2.53
8/16/07	2.67
8/17/07	2.51
8/18/07	2.57
8/19/07	2.55
8/20/07	2.61
8/21/07	2.72
8/22/07	2.52
8/23/07	2.48
8/24/07	2.61
8/25/07	2.52
8/26/07	2.62
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8/28/07	2.16
8/29/07	2.09
8/30/07	2.49
8/31/07	2.79
9/1/07	2.81
9/2/07	2.65
9/3/07	2.67
9/4/07	2.70
9/5/07	2.76
9/6/07	2.88
9/7/07	2.84
9/8/07	2.74
9/9/07	2.43
9/10/07	2.89
9/11/07	2.80
9/12/07	2.86

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9/14/07	2.68
9/15/07	2.65
9/16/07	2.78
9/17/07	2.74
9/18/07	2.53
9/19/07	2.61
9/20/07	2.57
9/21/07	2.64
9/22/07	2.22
9/23/07	2.18
9/24/07	2.19
9/25/07	2.44
9/26/07	2.76
9/27/07	2.80
9/28/07	2.59
9/29/07	2.87
9/30/07	3.47
10/1/07	3.53
10/2/07	2.25
10/3/07	2.84
10/4/07	2.55
10/5/07	2.62
10/6/07	2.74
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10/9/07	2.23
10/10/07	2.37
10/11/07	2.43
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10/16/07	2.53
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Kappa factor

	1A Kappa Factor	1B Kappa Factor	L2 Kappa Factor
1/1/05	0.18	0.17	0.24
1/2/05	0.17	0.19	0.24
1/3/05	0.17	0.19	0.24
1/4/05	0.19	0.21	0.23
1/5/05	0.20	0.19	0.23
1/6/05	0.20	0.19	0.24
1/7/05	0.19	0.19	0.25
1/8/05	0.15	0.16	0.24
1/9/05	0.16	0.19	0.23
1/10/05	0.18	0.20	0.24
1/11/05	0.18	0.18	0.26
1/12/05	0.17	0.17	0.24
1/13/05	0.16	0.18	0.23
1/14/05	0.16	0.18	0.24
1/15/05	0.18	0.21	0.24
1/16/05	0.18	0.20	0.24
1/17/05	0.17	0.18	0.18
1/18/05	0.16	0.16	0.24
1/19/05	0.17	0.19	0.26
1/20/05	0.16	0.17	0.26
1/21/05	0.17	0.17	0.26
1/22/05	0.17	0.18	0.27
1/23/05	0.15	0.18	0.23
1/24/05	0.16	0.17	0.24
1/25/05	0.16	0.18	0.22
1/26/05	0.17	0.18	0.28
1/27/05	0.17	0.19	0.24
1/28/05	0.17	0.16	0.26
1/29/05	0.16	0.18	0.27
1/30/05	0.16	0.17	0.29
1/31/05	0.15	0.16	0.27
2/1/05	0.16	0.16	0.26
2/2/05	0.16	0.17	0.26
2/3/05	0.17	0.17	0.25
2/4/05	0.17	0.21	0.27
2/5/05	0.19	0.16	0.28
2/6/05	0.18	0.18	0.27
2/7/05	0.19	0.19	0.28
2/8/05	0.21	0.22	0.28
2/9/05	0.19	0.18	0.28
2/10/05	0.17	0.09	0.27
2/11/05	0.15	0.19	0.27
2/12/05	0.17	0.19	0.31
2/13/05	0.20	0.17	0.29
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2/15/05	0.19	0.20	0.31
2/16/05	0.17	0.17	0.29
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2/18/05	0.18	0.18	0.30

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4/9/05	0.17
4/10/05	0.17
4/11/05	0.16

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6/2/05	0.22

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11/5/05	0.21

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11/30/05	0.20
12/1/05	0.17
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12/28/05	0.18	0.17	0.30
12/29/05	0.18	0.23	0.31
12/30/05	0.23	0.21	0.30
12/31/05	No Data	No Data	No Data
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1/2/06	No Data	No Data	No Data
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1/4/06	0.19	0.21	-1.03
1/5/06	0.20	0.21	0.26
1/6/06	0.21	0.20	0.26
1/7/06	0.21	0.23	0.28
1/8/06	0.20	0.21	-1.14
1/9/06	0.16	0.20	0.28
1/10/06	0.18	0.19	0.25
1/11/06	0.19	0.22	0.25
1/12/06	0.21	0.27	-1.62
1/13/06	0.17	0.15	-0.22
1/14/06	0.18	0.18	-0.52
1/15/06	0.19	0.20	-0.01
1/16/06	0.19	0.21	0.28
1/17/06	0.19	0.20	0.13
1/18/06	0.20	0.22	0.25
1/19/06	0.20	0.20	0.27
1/20/06	0.17	0.16	0.27
1/21/06	0.16	0.16	0.28
1/22/06	0.23	0.18	0.27
1/23/06	0.14	0.14	0.28
1/24/06	0.14	0.18	0.29
1/25/06	0.17	0.19	0.27
1/26/06	0.19	0.19	0.28
1/27/06	0.23	0.20	0.70
1/28/06	0.20	0.19	0.26
1/29/06	0.18	0.18	0.28
1/30/06	0.17	0.17	0.28
1/31/06	0.19	0.20	0.28
2/1/06	0.19	0.19	0.28
2/2/06	0.17	0.17	0.27
2/3/06	0.17	0.18	0.26
2/4/06	0.18	0.18	0.29
2/5/06	0.19	0.20	0.29
2/6/06	0.19	0.20	0.28
2/7/06	0.20	0.24	0.28
2/8/06	0.20	0.21	0.29
2/9/06	0.16	0.16	0.29
2/10/06	0.17	0.17	0.28
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2/14/06	0.18	0.17	0.26
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2/16/06	0.18	0.18	0.24
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5/31/06	0.20
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6/6/06	0.20	0.19	0.22
6/7/06	0.20	0.19	0.19
6/8/06	0.19	0.19	0.21
6/9/06	0.20	0.17	0.22
6/10/06	0.22	0.21	0.22
6/11/06	0.21	0.20	0.23
6/12/06	0.20	0.18	0.21
6/13/06	0.20	0.19	0.23
6/14/06	0.19	0.17	0.24
6/15/06	0.18	0.15	0.22
6/16/06	0.20	0.19	0.23
6/17/06	0.21	0.21	0.25
6/18/06	0.20	0.18	0.21
6/19/06	0.20	0.19	0.21
6/20/06	0.19	0.17	0.22
6/21/06	0.18	0.16	0.23
6/22/06	0.18	0.17	0.22
6/23/06	0.21	No Data	0.21
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6/27/06	0.20	0.19	0.22
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6/30/06	0.21	0.19	0.21
7/1/06	0.21	0.22	0.22
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7/4/06	0.22	0.20	0.23
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7/7/06	0.20	0.17	0.21
7/8/06	0.21	0.20	0.23
7/9/06	0.20	0.19	0.22
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7/20/06	0.21	0.23	0.22
7/21/06	0.21	0.19	0.24
7/22/06	0.20	0.19	0.23
7/23/06	0.20	0.18	0.23

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9/13/06	0.19

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9/17/06	0.19	0.20	0.21
9/18/06	0.19	0.18	0.21
9/19/06	0.18	0.20	0.22
9/20/06	0.19	0.17	0.21
9/21/06	0.19	0.19	0.22
9/22/06	0.19	0.19	0.22
9/23/06	0.21	0.17	0.22
9/24/06	0.21	0.20	0.22
9/25/06	0.19	0.19	0.21
9/26/06	0.19	0.19	0.21
9/27/06	0.19	0.15	0.21
9/28/06	0.18	0.24	0.20
9/29/06	0.19	0.19	0.21
9/30/06	0.19	0.16	0.20
10/1/06	0.17	0.14	0.19
10/2/06	0.19	0.18	0.21
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10/4/06	0.21	0.19	0.20
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10/9/06	0.18	0.17	0.21
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10/11/06	0.18	0.16	0.18
10/12/06	0.19	0.17	0.20
10/13/06	0.18	0.16	0.20
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10/22/06	0.18	0.15	0.20
10/23/06	0.19	0.20	0.22
10/24/06	0.22	0.21	0.22
10/25/06	0.22	0.20	0.20
10/26/06	0.22	0.19	0.19
10/27/06	0.19	0.17	0.20
10/28/06	0.21	0.16	0.20
10/29/06	0.18	0.16	0.20
10/30/06	0.17	0.16	0.19
10/31/06	0.18	0.17	0.19
11/1/06	0.19	0.18	0.18
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11/4/06	0.18	0.17	0.20

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12/28/06	0.20	0.20	0.22
12/29/06	0.21	0.21	0.20
12/30/06	0.21	0.20	0.15
12/31/06	0.19	0.18	0.21
1/1/07	0.19	0.18	0.21
1/2/07	0.19	0.17	0.21
1/3/07	0.19	0.19	0.20
1/4/07	0.19	0.19	-0.09
1/5/07	0.18	0.17	0.19
1/6/07	0.18	0.19	0.21
1/7/07	0.19	0.17	0.21
1/8/07	0.19	0.20	0.19
1/9/07	0.18	0.19	0.19
1/10/07	0.19	0.18	0.23
1/11/07	0.18	0.19	0.01
1/12/07	0.20	0.19	0.15
1/13/07	0.19	0.17	0.20
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1/15/07	0.17	0.16	0.19
1/16/07	0.19	0.18	0.19
1/17/07	0.20	0.22	0.19
1/18/07	0.19	0.18	0.08
1/19/07	0.18	0.16	0.20
1/20/07	0.18	0.19	0.21
1/21/07	0.18	0.17	0.21
1/22/07	0.18	0.18	0.21
1/23/07	0.17	0.19	0.21
1/24/07	0.18	0.18	0.19
1/25/07	0.18	0.19	0.20
1/26/07	0.19	0.19	0.20
1/27/07	0.20	0.18	0.20
1/28/07	0.18	0.16	0.20
1/29/07	0.19	0.17	0.11
1/30/07	0.20	0.19	0.19
1/31/07	0.20	0.19	0.19
2/1/07	0.21	0.17	0.20
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2/8/07	0.22	0.21	0.21
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2/10/07	0.18	0.14	-0.04
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2/12/07	0.18	0.16	0.22
2/13/07	0.19	0.16	0.20
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2/15/07	0.24	0.18	-0.14
2/16/07	0.23	0.22	0.20

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-0.40
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4/11/07	0.18
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6/6/07	No Data
6/7/07	No Data
6/8/07	No Data
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6/14/07	No Data
6/15/07	No Data
6/16/07	No Data
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6/18/07	0.14
6/19/07	0.13
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6/21/07	0.13
6/22/07	0.12
6/23/07	0.08
6/24/07	0.14
6/25/07	0.16
6/26/07	0.17
6/27/07	0.19
6/28/07	0.18
6/29/07	0.22
6/30/07	0.20
7/1/07	0.18
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7/3/07	0.26
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7/15/07	0.16
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7/17/07	0.19
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7/20/07	0.19
7/21/07	0.18
7/22/07	0.19

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7/23/07	0.19
7/24/07	0.22
7/25/07	0.20
7/26/07	0.20
7/27/07	0.21
7/28/07	0.21
7/29/07	0.19
7/30/07	0.18
7/31/07	0.19
8/1/07	0.20
8/2/07	0.19
8/3/07	0.20
8/4/07	0.20
8/5/07	0.20
8/6/07	0.21
8/7/07	0.22
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8/28/07	0.30
8/29/07	0.19
8/30/07	0.21
8/31/07	0.17
9/1/07	0.18
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9/5/07	0.18
9/6/07	0.19
9/7/07	0.19
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9/9/07	0.19
9/10/07	0.20
9/11/07	0.20
9/12/07	0.19

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9/13/07	0.19	0.21	0.22
9/14/07	0.20	0.20	0.22
9/15/07	0.20	0.20	0.21
9/16/07	0.19	0.19	0.24
9/17/07	0.18	0.17	0.23
9/18/07	0.18	0.19	0.24
9/19/07	0.18	0.18	0.22
9/20/07	0.19	0.19	0.21
9/21/07	0.19	0.18	0.22
9/22/07	0.18	0.17	0.22
9/23/07	0.18	0.18	0.23
9/24/07	0.19	0.18	0.24
9/25/07	0.20	0.20	0.25
9/26/07	0.19	0.18	0.22
9/27/07	0.39	0.15	0.20
9/28/07	0.20	0.17	0.24
9/29/07	0.19	0.18	0.21
9/30/07	0.19	0.18	0.22
10/1/07	0.18	0.17	0.21
10/2/07	0.19	0.19	0.23
10/3/07	0.19	0.17	0.23
10/4/07	0.19	0.18	0.22
10/5/07	0.19	0.18	0.24
10/6/07	0.18	0.17	0.23
10/7/07	0.19	0.16	0.23
10/8/07	0.18	0.17	0.23
10/9/07	0.18	0.16	0.23
10/10/07	0.18	0.18	0.22
10/11/07	0.18	0.17	0.21
10/12/07	0.17	0.19	0.22
10/13/07	0.20	0.21	0.23
10/14/07	0.20	0.20	0.22
10/15/07	0.20	0.19	0.23
10/16/07	0.21	0.21	0.24
10/17/07	0.18	0.18	0.27
10/18/07	0.19	0.20	0.25
10/19/07	0.22	0.23	0.24
10/20/07	0.22	0.22	0.24
10/21/07	0.20	0.22	0.25
10/22/07	0.20	0.20	0.23
10/23/07	0.20	0.19	0.23
10/24/07	0.19	0.18	0.22
10/25/07	0.17	0.17	0.22
10/26/07	0.20	0.19	0.22
10/27/07	0.20	0.20	0.22
10/28/07	0.20	0.20	0.21
10/29/07	0.19	0.18	0.22
10/30/07	0.20	0.21	0.21
10/31/07	0.23	0.22	0.24

CIO2 Application Rate

	1A Total, lbs/ton		1B Total, lbs/ton		L2 Total, lbs/ton
1/1/05	35.9		55.2		77.1
1/2/05	37.3		59.2		76.5
1/3/05	39.7		59.8		74.5
1/4/05	41.8		63.5		74.2
1/5/05	40.2		60.3		70.6
1/6/05	39.2		59.2		78.0
1/7/05	36.6		56.7		72.8
1/8/05	34.1		57.1		72.6
1/9/05	36.0		60.7		70.0
1/10/05	41.0		60.2		69.8
1/11/05	39.5		63.6		71.3
1/12/05	37.4		61.5		82.2
1/13/05	33.2		55.4		77.6
1/14/05	37.7		58.3		82.8
1/15/05	35.3		58.4		75.6
1/16/05	40.1		62.4		79.7
1/17/05	38.0		58.0		68.6
1/18/05	36.7		56.5		82.1
1/19/05	39.5		61.4		84.5
1/20/05	36.3		56.8		89.1
1/21/05	37.8		57.8		92.5
1/22/05	38.0		57.1		88.5
1/23/05	36.4		56.9		85.5
1/24/05	37.6		57.3		79.0
1/25/05	39.0		59.9		84.7
1/26/05	39.6		58.8		84.6
1/27/05	38.3		57.4		70.0
1/28/05	36.0		55.2		82.6
1/29/05	35.8		56.9		87.7
1/30/05	36.8		56.0		87.6
1/31/05	36.9		56.5		83.3
2/1/05	36.9		55.0		73.6
2/2/05	36.4		57.7		72.0
2/3/05	37.3		57.4		75.3
2/4/05	38.4		61.2		84.2
2/5/05	39.5		54.2		88.4
2/6/05	39.4		58.1		83.1
2/7/05	39.3		59.5		84.5
2/8/05	42.9		60.6		79.3
2/9/05	37.0		53.3		82.2
2/10/05	37.2		58.1		84.4
2/11/05	38.2		56.2		89.3
2/12/05	40.4		58.2		95.4
2/13/05	41.1		55.6		90.6
2/14/05	38.6		52.2		90.8
2/15/05	42.3		58.0		91.0
2/16/05	37.5		53.2		92.1
2/17/05	44.2		59.3		99.8
2/18/05	40.3		56.1		94.3

2/19/05	38.9
2/20/05	37.8
2/21/05	40.0
2/22/05	39.0
2/23/05	40.6
2/24/05	37.3
2/25/05	40.8
2/26/05	43.0
2/27/05	40.4
2/28/05	40.2
3/1/05	41.3
3/2/05	44.5
3/3/05	46.4
3/4/05	40.8
3/5/05	38.7
3/6/05	39.0
3/7/05	39.7
3/8/05	41.3
3/9/05	41.7
3/10/05	39.1
3/11/05	38.8
3/12/05	35.2
3/13/05	37.9
3/14/05	39.1
3/15/05	40.7
3/16/05	37.7
3/17/05	41.7
3/18/05	51.1
3/19/05	44.7
3/20/05	37.6
3/21/05	38.7
3/22/05	43.1
3/23/05	39.1
3/24/05	41.0
3/25/05	40.6
3/26/05	39.8
3/27/05	40.8
3/28/05	39.3
3/29/05	44.4
3/30/05	43.8
3/31/05	40.9
4/1/05	42.8
4/2/05	43.2
4/3/05	35.5
4/4/05	46.2
4/5/05	46.1
4/6/05	39.0
4/7/05	43.1
4/8/05	44.2
4/9/05	41.1
4/10/05	43.4
4/11/05	41.9

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4/12/05	40.0
4/13/05	47.8
4/14/05	47.6
4/15/05	42.4
4/16/05	42.8
4/17/05	43.9
4/18/05	44.0
4/19/05	42.8
4/20/05	48.5
4/21/05	45.1
4/22/05	43.4
4/23/05	45.8
4/24/05	41.1
4/25/05	41.9
4/26/05	41.4
4/27/05	43.8
4/28/05	49.9
4/29/05	48.4
4/30/05	39.7
5/1/05	38.7
5/2/05	42.7
5/3/05	47.1
5/4/05	44.9
5/5/05	41.5
5/6/05	44.0
5/7/05	41.2
5/8/05	42.2
5/9/05	33.0
5/10/05	0.4
5/11/05	0.4
5/12/05	0.4
5/13/05	33.3
5/14/05	42.5
5/15/05	40.6
5/16/05	43.8
5/17/05	49.2
5/18/05	54.1
5/19/05	52.6
5/20/05	53.2
5/21/05	51.7
5/22/05	48.9
5/23/05	44.5
5/24/05	51.4
5/25/05	48.5
5/26/05	51.4
5/27/05	45.8
5/28/05	46.4
5/29/05	47.2
5/30/05	44.2
5/31/05	44.8
6/1/05	45.6
6/2/05	48.5

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6/4/05	41.3
6/5/05	42.2
6/6/05	39.6
6/7/05	41.1
6/8/05	42.6
6/9/05	40.7
6/10/05	40.5
6/11/05	42.0
6/12/05	40.2
6/13/05	39.4
6/14/05	41.6
6/15/05	32.5
6/16/05	36.5
6/17/05	38.7
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6/21/05	35.3
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6/23/05	40.2
6/24/05	39.3
6/25/05	39.0
6/26/05	38.2
6/27/05	38.1
6/28/05	37.0
6/29/05	39.8
6/30/05	41.2
7/1/05	40.5
7/2/05	43.6
7/3/05	41.4
7/4/05	42.3
7/5/05	43.1
7/6/05	40.7
7/7/05	37.4
7/8/05	34.7
7/9/05	33.3
7/10/05	37.6
7/11/05	38.1
7/12/05	35.6
7/13/05	36.1
7/14/05	36.9
7/15/05	34.1
7/16/05	34.5
7/17/05	34.1
7/18/05	33.5
7/19/05	36.9
7/20/05	34.8
7/21/05	34.4
7/22/05	34.9
7/23/05	43.2
7/24/05	31.5

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7/26/05	32.5
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7/31/05	36.7
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8/3/05	35.5
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8/5/05	31.7
8/6/05	33.5
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8/8/05	35.6
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8/10/05	34.8
8/11/05	35.5
8/12/05	35.9
8/13/05	33.8
8/14/05	30.5
8/15/05	29.4
8/16/05	9.6
8/17/05	40.7
8/18/05	40.0
8/19/05	39.8
8/20/05	35.9
8/21/05	32.1
8/22/05	33.0
8/23/05	34.7
8/24/05	36.7
8/25/05	37.7
8/26/05	38.0
8/27/05	33.2
8/28/05	33.2
8/29/05	35.6
8/30/05	34.5
8/31/05	35.0
9/1/05	34.7
9/2/05	33.3
9/3/05	32.6
9/4/05	31.5
9/5/05	32.5
9/6/05	34.3
9/7/05	31.3
9/8/05	31.6
9/9/05	31.8
9/10/05	33.5
9/11/05	33.6
9/12/05	31.9
9/13/05	32.4
9/14/05	31.9

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9/16/05	32.1	55.8	106.0
9/17/05	32.9	55.8	101.6
9/18/05	32.0	55.2	101.0
9/19/05	32.4	55.5	102.9
9/20/05	31.4	55.2	108.1
9/21/05	35.9	71.1	103.7
9/22/05	34.2	55.2	99.4
9/23/05	34.1	53.0	100.2
9/24/05	34.2	55.1	97.5
9/25/05	33.9	51.4	82.2
9/26/05	32.9	52.7	90.5
9/27/05	36.2	56.8	96.5
9/28/05	36.8	53.6	97.1
9/29/05	33.2	54.3	93.4
9/30/05	33.6	49.9	94.8
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10/2/05	33.3	49.8	92.3
10/3/05	34.5	57.0	92.8
10/4/05	36.8	53.5	104.8
10/5/05	36.9	54.1	97.0
10/6/05	34.9	51.2	107.2
10/7/05	33.2	47.0	91.2
10/8/05	34.9	52.1	102.4
10/9/05	32.7	48.6	101.5
10/10/05	34.0	53.9	97.1
10/11/05	34.7	53.4	96.3
10/12/05	34.3	53.9	82.4
10/13/05	34.7	54.5	96.6
10/14/05	34.5	49.4	100.1
10/15/05	34.0	52.5	94.3
10/16/05	33.2	51.8	93.1
10/17/05	31.3	50.5	95.7
10/18/05	33.8	56.2	97.6
10/19/05	45.7	52.8	101.8
10/20/05	33.8	51.4	96.2
10/21/05	29.9	47.5	91.3
10/22/05	31.3	51.4	91.5
10/23/05	32.0	52.7	90.9
10/24/05	32.5	51.5	93.6
10/25/05	34.8	57.4	98.7
10/26/05	35.2	57.7	96.6
10/27/05	32.7	56.3	99.6
10/28/05	33.5	57.8	101.3
10/29/05	35.1	60.1	108.6
10/30/05	32.7	57.0	101.3
10/31/05	32.3	53.7	113.5
11/1/05	32.4	56.8	103.0
11/2/05	32.8	55.3	102.2
11/3/05	33.6	61.1	105.2
11/4/05	34.3	56.6	96.6
11/5/05	35.0	57.0	102.2

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11/7/05	34.0
11/8/05	36.3
11/9/05	36.9
11/10/05	34.4
11/11/05	33.1
11/12/05	32.9
11/13/05	34.1
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11/15/05	32.3
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11/19/05	31.4
11/20/05	29.4
11/21/05	38.0
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11/23/05	35.4
11/24/05	34.0
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11/26/05	36.9
11/27/05	34.1
11/28/05	35.4
11/29/05	35.7
11/30/05	33.8
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12/2/05	33.5
12/3/05	30.5
12/4/05	32.5
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12/7/05	32.4
12/8/05	35.0
12/9/05	33.7
12/10/05	33.6
12/11/05	33.5
12/12/05	33.1
12/13/05	34.1
12/14/05	34.3
12/15/05	34.8
12/16/05	36.8
12/17/05	33.7
12/18/05	37.2
12/19/05	32.5
12/20/05	35.1
12/21/05	35.6
12/22/05	35.0
12/23/05	34.1
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12/25/05	31.3
12/26/05	31.7
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1/4/06	36.0
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1/7/06	38.8
1/8/06	37.1
1/9/06	32.2
1/10/06	34.5
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1/19/06	36.6
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1/22/06	54.1
1/23/06	28.3
1/24/06	30.7
1/25/06	34.3
1/26/06	34.2
1/27/06	41.8
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1/29/06	31.6
1/30/06	33.0
1/31/06	37.2
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2/3/06	32.9
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2/5/06	35.8
2/6/06	35.6
2/7/06	39.7
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2/9/06	30.5
2/10/06	30.6
2/11/06	31.5
2/12/06	34.8
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102.6
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89.1
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92.1

2/18/06	35.6
2/19/06	33.4
2/20/06	32.2
2/21/06	42.2
2/22/06	35.9
2/23/06	35.6
2/24/06	37.4
2/25/06	39.4
2/26/06	32.8
2/27/06	33.6
2/28/06	43.4
3/1/06	39.4
3/2/06	41.5
3/3/06	41.8
3/4/06	39.4
3/5/06	34.3
3/6/06	38.5
3/7/06	42.9
3/8/06	39.7
3/9/06	41.2
3/10/06	41.8
3/11/06	39.2
3/12/06	134.2
3/13/06	40.5
3/14/06	42.6
3/15/06	39.2
3/16/06	39.0
3/17/06	41.2
3/18/06	37.7
3/19/06	37.3
3/20/06	36.7
3/21/06	37.7
3/22/06	11.0
3/23/06	38.9
3/24/06	41.3
3/25/06	41.2
3/26/06	39.8
3/27/06	37.9
3/28/06	42.7
3/29/06	42.3
3/30/06	43.5
3/31/06	39.3
4/1/06	40.2
4/2/06	42.4
4/3/06	45.6
4/4/06	43.3
4/5/06	39.4
4/6/06	41.1
4/7/06	43.0
4/8/06	44.9
4/9/06	43.1
4/10/06	42.6

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79.2
76.9
86.0

4/11/06	39.6	51.0	82.2
4/12/06	39.3	50.2	78.5
4/13/06	38.2	50.9	75.1
4/14/06	38.4	49.5	70.5
4/15/06	40.7	58.5	79.1
4/16/06	41.5	51.3	73.0
4/17/06	41.9	55.9	77.1
4/18/06	42.8	53.7	86.3
4/19/06	43.6	57.0	83.3
4/20/06	43.2	56.1	87.4
4/21/06	43.2	57.5	81.3
4/22/06	38.6	50.8	81.7
4/23/06	38.4	57.2	77.1
4/24/06	38.3	52.1	78.4
4/25/06	40.0	53.2	84.3
4/26/06	41.7	52.9	82.8
4/27/06	39.4	51.8	78.4
4/28/06	39.6	49.9	70.9
4/29/06	39.3	50.4	77.4
4/30/06	38.2	50.4	71.3
5/1/06	42.8	57.9	81.6
5/2/06	39.7	48.3	76.1
5/3/06	41.1	52.1	75.7
5/4/06	40.7	56.1	75.6
5/5/06	44.1	55.9	87.0
5/6/06	42.2	55.6	89.0
5/7/06	37.2	45.8	75.1
5/8/06	38.2	52.0	80.7
5/9/06	39.1	50.4	83.8
5/10/06	43.2	53.8	89.7
5/11/06	39.2	48.7	82.4
5/12/06	37.9	49.3	82.1
5/13/06	35.5	64.4	84.2
5/14/06	0.0	0.0	75.5
5/15/06	0.0	0.0	88.1
5/16/06	0.0	0.0	0.0
5/17/06	0.0	0.0	0.0
5/18/06	0.0	0.0	0.0
5/19/06	0.0	0.0	-12254.1
5/20/06	33.5	47.2	145.9
5/21/06	88.2	46.0	74.1
5/22/06	40.2	47.8	84.8
5/23/06	45.2	49.9	87.9
5/24/06	44.9	49.7	81.4
5/25/06	47.4	50.8	86.0
5/26/06	49.0	52.3	86.7
5/27/06	48.9	53.3	90.6
5/28/06	44.0	46.6	90.6
5/29/06	44.7	50.0	83.1
5/30/06	45.9	50.6	77.9
5/31/06	48.4	49.1	77.3
6/1/06	44.2	49.8	84.9

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7/26/06	40.1
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9/2/06	41.2
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9/8/06	37.1
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11/7/06	36.4	49.3	73.4
11/8/06	35.5	49.1	74.2
11/9/06	35.2	49.3	82.0
11/10/06	33.0	45.2	69.2
11/11/06	30.8	44.0	74.8
11/12/06	33.6	47.1	74.3
11/13/06	34.5	49.1	72.9
11/14/06	36.1	50.5	77.7
11/15/06	39.0	48.3	75.6
11/16/06	37.6	47.3	73.7
11/17/06	23.0	50.0	79.4
11/18/06	33.6	44.1	80.9
11/19/06	33.6	46.1	68.1
11/20/06	33.5	45.0	69.5
11/21/06	36.8	47.6	76.4
11/22/06	35.2	44.4	71.9
11/23/06	44.8	53.1	75.6
11/24/06	37.0	44.4	78.1
11/25/06	37.4	45.4	80.7
11/26/06	32.9	40.9	76.7
11/27/06	33.6	43.8	73.2
11/28/06	38.3	46.9	74.2
11/29/06	38.5	49.6	78.5
11/30/06	39.0	46.7	73.0
12/1/06	35.1	47.7	71.5
12/2/06	38.2	46.0	70.0
12/3/06	35.8	43.8	66.8
12/4/06	34.2	43.4	66.7
12/5/06	35.8	46.6	72.2
12/6/06	37.6	47.5	76.8
12/7/06	37.2	46.7	80.3
12/8/06	40.6	52.4	85.0
12/9/06	39.2	47.0	86.3
12/10/06	38.4	51.1	79.7
12/11/06	37.7	54.1	76.6
12/12/06	37.4	49.7	74.5
12/13/06	35.8	51.9	78.2
12/14/06	35.7	46.0	77.5
12/15/06	36.9	51.7	-416.5
12/16/06	38.1	48.2	-2.2
12/17/06	36.5	47.0	75.6
12/18/06	34.9	47.5	76.3
12/19/06	38.5	54.5	77.9
12/20/06	39.8	50.6	-92.4
12/21/06	34.1	48.1	78.5
12/22/06	37.1	51.0	30.6
12/23/06	38.6	50.8	-104.7
12/24/06	35.9	46.9	72.4
12/25/06	33.6	47.5	69.2
12/26/06	35.6	50.0	76.0

12/27/06	35.6	51.7	79.5
12/28/06	38.0	53.9	76.7
12/29/06	40.4	54.5	73.8
12/30/06	37.1	51.1	8.8
12/31/06	36.3	48.9	71.7
1/1/07	36.9	52.4	74.9
1/2/07	40.6	52.0	74.3
1/3/07	37.7	57.1	72.1
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1/6/07	38.7	54.7	74.8
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1/9/07	39.3	53.9	71.4
1/10/07	37.9	50.2	84.9
1/11/07	37.1	49.2	-148.0
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1/13/07	33.7	46.8	77.7
1/14/07	34.9	46.5	75.6
1/15/07	33.3	45.5	75.7
1/16/07	39.4	50.7	68.8
1/17/07	50.8	65.3	73.3
1/18/07	39.3	50.0	-41.8
1/19/07	34.6	45.7	82.0
1/20/07	36.4	50.9	80.1
1/21/07	37.7	50.7	75.1
1/22/07	37.2	51.1	69.8
1/23/07	39.5	52.3	74.3
1/24/07	36.4	49.8	71.9
1/25/07	37.5	52.6	77.0
1/26/07	39.9	52.9	72.0
1/27/07	38.7	52.3	76.4
1/28/07	34.3	47.7	79.0
1/29/07	37.4	50.1	-89.2
1/30/07	39.9	53.2	78.5
1/31/07	40.0	51.9	78.0
2/1/07	41.7	52.7	82.5
2/2/07	39.8	50.9	73.0
2/3/07	39.5	51.9	77.8
2/4/07	37.9	51.3	76.5
2/5/07	38.5	50.5	76.2
2/6/07	38.4	52.1	76.9
2/7/07	40.7	53.4	79.1
2/8/07	44.6	56.4	83.6
2/9/07	40.8	52.1	81.1
2/10/07	34.3	40.4	-116.5
2/11/07	35.3	47.2	81.1
2/12/07	38.5	51.9	85.6
2/13/07	40.7	51.5	78.1
2/14/07	43.5	54.6	76.9
2/15/07	45.2	51.2	-235.2
2/16/07	43.0	55.1	81.3

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2/21/07	49.0
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4/12/07	38.1
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4/16/07	41.2
4/17/07	41.6
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4/21/07	56.2
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4/24/07	47.7
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4/30/07	45.6
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5/2/07	44.9
5/3/07	46.8
5/4/07	37.0
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6/2/07	38.4	113.0	102.3
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6/9/07	0.0	0.0	0.0
6/10/07	0.0	36.8	27.6
6/11/07	0.0	41.9	119.7
6/12/07	0.0	42.9	114.4
6/13/07	0.0	44.5	103.3
6/14/07	0.0	48.9	101.9
6/15/07	0.0	48.7	117.8
6/16/07	0.0	44.7	103.5
6/17/07	94.1	45.6	95.8
6/18/07	28.6	42.0	98.1
6/19/07	27.9	45.5	88.0
6/20/07	24.6	41.6	88.6
6/21/07	25.4	38.7	88.8
6/22/07	37.7	42.4	104.1
6/23/07	31.4	44.8	98.0
6/24/07	51.0	39.8	90.9
6/25/07	42.6	46.6	92.0
6/26/07	38.2	47.4	94.3
6/27/07	36.7	46.6	92.9
6/28/07	38.2	44.6	104.4
6/29/07	40.3	49.6	109.9
6/30/07	38.0	50.2	110.6
7/1/07	35.6	45.8	101.6
7/2/07	35.7	48.3	105.6
7/3/07	52.5	52.1	102.5
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7/5/07	35.8	49.6	98.7
7/6/07	38.3	50.1	97.6
7/7/07	33.5	42.3	96.9
7/8/07	38.8	48.7	91.6
7/9/07	40.8	52.3	93.1
7/10/07	34.8	41.8	98.8
7/11/07	38.3	49.1	106.2
7/12/07	69.5	56.6	106.1
7/13/07	37.0	53.3	102.6
7/14/07	32.4	47.3	106.0
7/15/07	34.9	49.1	90.3
7/16/07	34.1	45.2	105.7
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7/18/07	36.1	47.8	109.0
7/19/07	41.2	55.4	104.1
7/20/07	37.1	47.1	97.0
7/21/07	36.3	45.5	97.3
7/22/07	37.8	47.4	101.4

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95.3
102.6
103.3
185.8
87.3
89.4
84.7
92.2
117.9
107.1
94.1
97.1
92.4
91.9
88.9
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89.5
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106.1
94.5
97.3
101.0
94.9
97.6
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83.3
86.6
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89.8
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89.0
83.1
79.0
85.7
89.7
100.5
84.1
82.2
86.4
86.5
81.8

9/13/07	38.9	50.7	81.3
9/14/07	38.1	47.8	81.6
9/15/07	36.2	47.1	85.1
9/16/07	36.1	46.0	83.6
9/17/07	34.0	44.0	82.1
9/18/07	32.9	45.8	89.9
9/19/07	33.9	44.8	77.9
9/20/07	36.4	48.2	72.7
9/21/07	36.7	44.7	75.3
9/22/07	34.8	43.8	80.4
9/23/07	35.6	44.7	78.6
9/24/07	35.5	46.6	89.0
9/25/07	36.9	48.2	85.9
9/26/07	35.3	46.2	85.7
9/27/07	67.3	41.1	92.9
9/28/07	35.3	46.4	85.8
9/29/07	33.8	46.7	84.6
9/30/07	33.1	45.6	84.1
10/1/07	34.1	45.9	85.0
10/2/07	35.5	48.2	87.0
10/3/07	37.5	47.4	82.9
10/4/07	35.6	47.2	83.2
10/5/07	35.8	45.8	85.0
10/6/07	33.3	42.7	82.3
10/7/07	36.2	41.0	86.1
10/8/07	35.2	43.4	91.0
10/9/07	36.5	44.2	91.6
10/10/07	34.9	44.2	82.5
10/11/07	36.8	44.8	82.1
10/12/07	36.9	49.5	87.7
10/13/07	41.3	52.1	88.1
10/14/07	37.8	48.8	85.0
10/15/07	38.1	51.0	83.9
10/16/07	40.6	53.2	93.3
10/17/07	33.3	44.0	94.8
10/18/07	39.0	54.1	79.7
10/19/07	42.2	53.2	94.4
10/20/07	39.9	50.0	94.6
10/21/07	37.8	50.2	88.2
10/22/07	38.7	47.5	88.3
10/23/07	37.4	45.8	74.9
10/24/07	35.7	44.5	80.5
10/25/07	33.3	42.1	82.3
10/26/07	39.0	49.0	88.1
10/27/07	37.2	46.9	89.2
10/28/07	34.0	46.3	90.5
10/29/07	32.4	42.4	82.0
10/30/07	37.3	47.8	89.3
10/31/07	39.4	47.6	99.6

We run at 100% substitution. There is no Cl2.

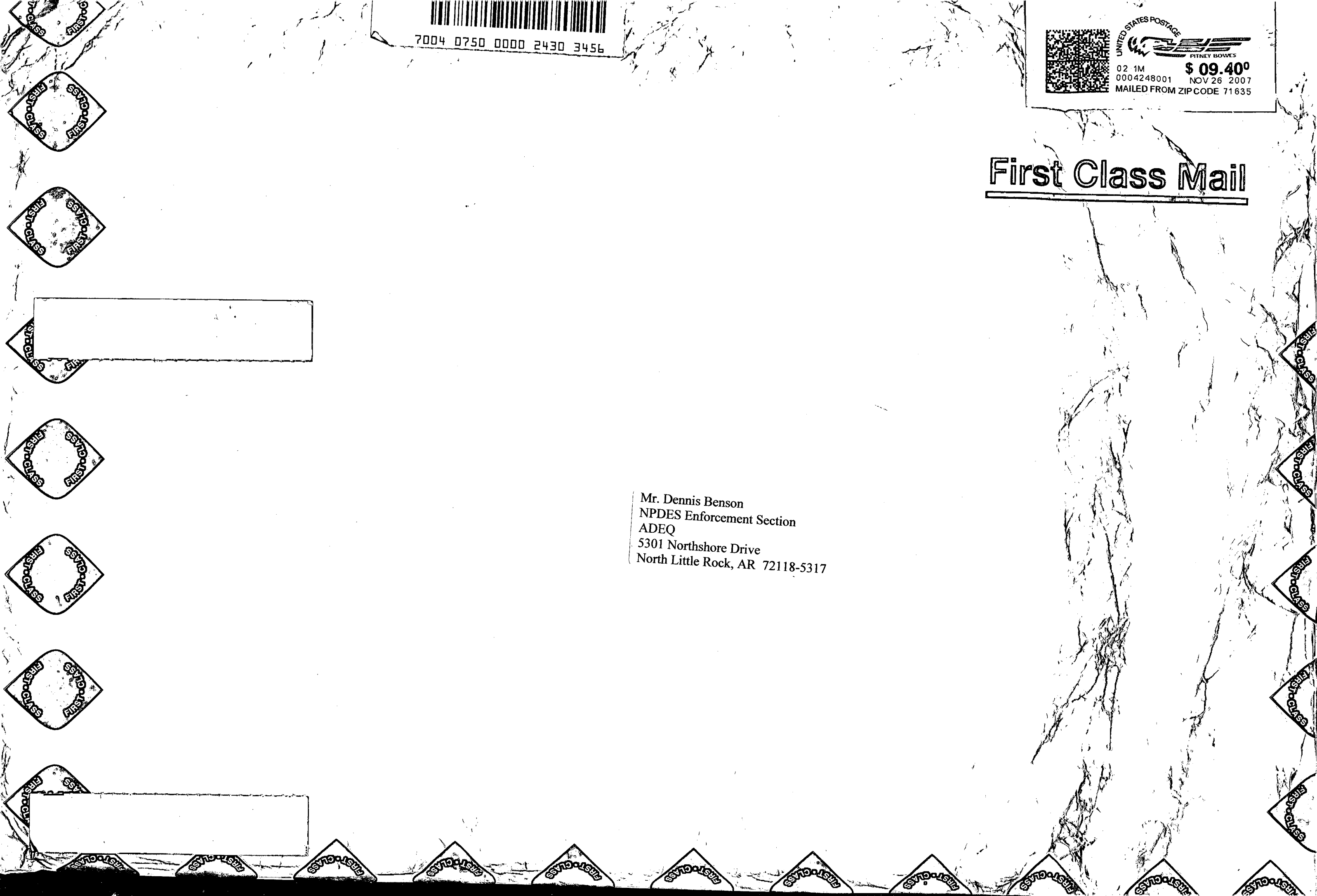


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Mr. Dennis Benson
 NPDES Enforcement Section
 ADEQ
 5301 Northshore Drive
 North Little Rock, AR 72118-5317



3M Industrial Mineral Products 3M
P O Box 165860
Little Rock, AR 72216 – 5860
Phone (501) 490-1509



November 26, 2007

Mr. Steve Drown
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: Permit Closeout
3M – College Station (AR0001686)

Dear Mr. Drown:

In previous meetings with the Water Division, 3M has described our approach to eliminating Outfall 002 and thus, the need for an individual NPDES permit. The construction of the necessary improvements needed to accomplish this goal is basically complete. Effective November 30th 2007, the permit will no longer be needed and can be terminated.

As we have described in our previous meetings, the outfall location will continue to collect and discharge non-contact, once-through cooling water from the air compressors at the site. This water will be discharged under the provisions of Section B.1.a.i. of the General Permit for Industrial Activity. This Section provides an authorization for non-stormwater discharges and specifically mentions uncontaminated non-contact, once-through cooling water.

Jennifer Harmon, from your office, identified the following tasks necessary to officially implement the permit termination:

- 1) Submit a letter to ADEQ stating that the permit is no longer needed. (This letter is intended to serve that purpose.)
- 2) Demonstrate that the non-contact cooling water is not contaminated.
 - a. Provide sample results for pH, TSS, DO, temperature, Copper, Zinc and minerals.
 - b. Provide a certification by a Professional Engineer

Attached you will find a certification from Rex Robbins, PE with FTN Associates regarding the sampling and testing of the non-contact cooling water.

If you have any other questions regarding this submittal, please contact me or Rex Robbins, PE with FTN Associates, Ltd. at (501) 225-7779.

Kindest Regards,

A handwritten signature in black ink that reads 'Todd Cantrell'.

Todd Cantrell
Plant Manager

Attachments

3M Industrial Mineral Products 3M
P O Box 165860
Little Rock, AR 72216 – 5860
Phone (501) 490-1509

Permit Closeout LIRK (AR0001686)

dc: Allen Johnson – 3M Little Rock
Tina Mumm – 42-2E-27 – St Paul
Jesse Laing – 3M Little Rock
Wayne Neumann – 209-1W-14 – St Paul



water resources / environmental consultants

3 Innwood Circle, Suite 220 • Little Rock, AR 72211-2492 • (501) 225-7779 • Fax (501) 225-6738

November 26, 2007

Mr. Allen Johnson
Environmental Manager
3M Company
PO Box 165860
Little Rock, AR 72216-5860

RE: Once-through non-contact cooling water
FTN No. 6995-053

Dear Mr. Johnson:

The wastewater treatment project at 3M is intended to eliminate the need for Outfall 002 which is currently authorized by a National Pollutant Discharge Elimination System (NPDES) permit. To terminate the permit, the Arkansas Department of Environmental Quality has required that a licensed Professional Engineer certify that the non-contact cooling water that will continue to be discharged through the outfall is not contaminated and fits the exemption provided in the General Permit for stormwater discharges.

The Outfall receives wastewater from the truck wash and the maintenance shop, both of which would be considered process wastewater streams. The construction project will eliminate these two sources of process wastewater as well as the open sources of stormwater that drain from the site.

The NPDES outfall location will continue to collect and discharge non-contact, once-through cooling water from the air compressors at the site. The intent is that this water can be collected and re-used for dust control on the site. Any water that is not used for dust control will be discharged under the provisions of Section B.1.a.i. of the General Permit for Industrial Activity. This Section of the General Permit provides an authorization for non-stormwater discharges and specifically mentions uncontaminated non-contact, once-through cooling water.

Our examination of the cooling water system indicates that City water is used in a once-through pass to maintain temperature of the air compressors located in Building 4. Our understanding is that this water source would match the definition of an exempt non-stormwater source referenced in the General Permit.

At your direction, we have collected samples of the non-contact cooling water at a point prior to entry into the underground sewer system at the plant. These sample were for the parameters

listed in an e-mail from Jennifer Harmon dated August 21, 2007. Ms. Harmon provided this list as requirement for 3M to demonstrate that the non-contact cooling water is not contaminated , and therefore, could continue to be discharged. Using this list, samples were taken of the non-contact cooling water at a location as it enters the sewer system. Sample 1 shows the results of a sample taken at this location as part of a study to determine sources of copper. Sample 2 was collected on November 7, 2007 and is the confirmation sample taken to verify non-contamination according to the list provided by Jennifer Harmon. The results of the analytical testing are included in Table 1.

Table 1. Non-contact Cooling Water Analytical Test Results.

Parameter	Sample 1 (10/31/07)	Sample 2 (11/7/07)
Dissolved oxygen (DO)*		5.9 mg/L
Temperature*		25.8°C
Total Suspended Solids (TSS)		<4 mg/L
pH		7.2
Copper	<0.006 mg/L	0.014 mg/L
Zinc		0.088 mg/L
Chlorides		4.5
Sulfates		14 mg/L
Total Dissolved Solids (TDS)		46 mg/L

*Measured in-situ; average of three readings; ambient temperature 59°F

A review of the table indicates that the sample data is consistent with water supplied by Central Arkansas Water as used for once-through non-contact cooling water. The water would not be considered contaminated when compared to relevant bench marks. According to Gary Hum, Director of Source and Treatment with Central Arkansas Water, the concentration of copper in treated potable water delivered to Little Rock customers has been measured at 0.002 to 0.020 mg/L. The measured values at 3M for the non-contact cooling water fell within this range.

If you have any questions, please feel free to contact me or Jim Malcolm at (501) 225-7779.

Kindest regards,
FTN ASSOCIATES, LTD



Rex Robbins, PE
Senior Environmental Engineer

Enclosure

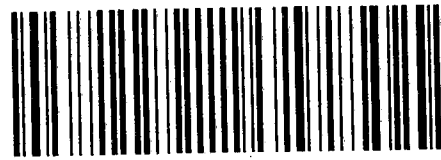
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3M Industrial Mineral
Products Division
PO Box 165860
Little Rock, Ar 72216-5860

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Quality
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North Little Rock, AR 72118-5317

