

ENVIRONMENTAL ANALYSIS AND DECISION ON THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT (EIS)

Form 1600-1

Rev. 6-2001

Department of Natural Resources (DNR)

Region or Bureau

Air / NER

Type List Designation

Type II

NOTE TO REVIEWERS: This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has reviewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150.22, Wis. Adm. Code. Your comments should address completeness, accuracy or the EIS decision. For your comments to be considered, they must be received by the contact person before 4:30 p.m., Insert Date.

Contact Person:

James Crawford, P.E.

Title: Review Engineer

Address: 2984 Shawano Avenue

Green Bay, WI 54313

Telephone Number

920-662-5484

Applicant: Thilmany LLC

Address: 600 Thilmany Road, Kaukauna, WI 54130

Title of Proposal: Paper Machine Modification Projects

Location: County: Outagamie City/Town/Village: Kaukauna

Township Range Section(s): Township/Range information at the Mill location is difficult to determine. The Mill location is at UTM Zone 16, 400120 East, 4904050 North.

PROJECT SUMMARY

1. Brief overview of the proposal including the DNR action (include cost and funding source if public funds involved)

DNR proposes to issue a construction permit (#09-POY-259) and a significant operation permit revision to authorize the modification of existing paper machines. The project described in the permit application includes several changes proposed to create production increases on five paper machine complexes at the Kaukauna Mill: modifications to the Nos. 11, 12, 13, 14 and 15 paper machine complexes.

It is anticipated that the project will increase air emissions of nitrous oxides and sulfur dioxide. In addition, increased productivity of the paper machines may require more water intake from the Fox River and more wastewater return. However, the Mill does not anticipate significant changes in water uptake or wastewater discharge. More detailed listings of the proposed projects are included in the Attachments A and B, and below.

No.11 Paper Machine Complex Project Description

This series of projects are designed to increase the maximum daily production rate, reduce energy usage, and improve product quality. The primary scope of all projects is to debottleneck and improve No. 11 Paper Machine productivity/efficiency. A more detailed listing of the proposed projects is included in Attachment A.

No.12 Paper Machine Complex Project Description

This series of projects are designed to increase the maximum daily production rate, reduce energy usage, and improve product quality. The primary scope of all projects is to debottleneck and improve No. 12 Paper Machine productivity/efficiency. A more detailed listing of the proposed projects is included in Attachment A.

No.13 Paper Machine Complex Project Description

This series of projects are designed to increase the maximum daily production rate, reduce energy usage, and improve product quality. The primary scope of all projects is to debottleneck and improve No. 13 Paper Machine productivity/efficiency. A more detailed listing of the proposed projects is included in Attachment A.

No.14 Paper Machine Complex Project Description

This series of projects are designed to increase the maximum daily production rate, reduce energy usage, and improve product quality. The primary scope of all projects is to debottleneck and improve No. 14 Paper Machine productivity/efficiency. A more detailed listing of the proposed projects is included in Attachment A.

No.15 Paper Machine Complex Project Description

This series of projects are designed to increase the maximum daily production rate, reduce energy usage, and improve product quality. The primary scope of all projects is to debottleneck and improve No. 15 Paper Machine productivity/efficiency. A more detailed listing of the proposed projects is included in Attachment A.

No modifications are proposed for any fuel combustion component of any of the paper machine complexes. Additionally, while the proposed modifications may have the effect of debottlenecking upstream processes (e.g., steam plant [boilers No. 9 or No. 11], pulp manufacturing and associated chemical recovery process), no other physical changes or changes in method of operation at other processes are included in this permit application.

The source of the funding for these projects is private.

2. Purpose and Need (include history and background as appropriate)

The modifications will allow the Kaukauna Mill to improve the quality and quantity of paper produced to remain competitive in a global market.

3. Authorities and Approvals (list local, state and federal permits or approvals required)

Air: Chapter NR 405 Wis. Adm. Code, Chapter 285 Wisconsin Statutes

Water/wastewater: Preliminary review by DNR concludes no approvals needed until actual increases are anticipated by the Mill.

PROPOSED PHYSICAL CHANGES (more fully describe the proposal)

4. Manipulation of Terrestrial Resources (include relevant quantities - sq. ft., cu. yard, etc.)

None. This project involves the modifications of existing processes inside existing structures. Furthermore, they will not require the expansion of the current facilities including buildings, roadways, and other on-site or off-site support structures.

5. Manipulation of Aquatic Resources (include relevant quantities - cfs, acre feet, MGD, etc.)

The Mill does not believe there will be actual increases in any wastewater pollutant as a result of these paper machine projects. Despite an increase in paper production there is not expected to be a significant increase in water draw from the Fox River or wastewater discharged to it.

The projects listed in the Prevention of Significant Deterioration (PSD) application and the general category of projects account for a production increase of 101 tons per day (tpd) of paper (PSD air rules apply to large sources). The actual increase in water use and wastewater discharge is likely to be small, since the required flow is not linear with production. In a worst case, if wastewater generation and paper production were linear, an additional 2.6 million gallons per day (MGD) may be required from the Fox River, based on the 2006/2007 average process waste water (effluent) discharge. This additional water would be treated at the mills wastewater treatment plant (WWTP) and discharged back into the Fox River.

The Kaukauna Mill's WWTP has operated well under its allowable limits and it is not expected that this additional loading, if it ever occurred, would cause any significant impact on the effluent discharged to the Fox River.

A 2008 study by the Department found that at the existing wastewater discharge of 19.9 MGD all priority pollutants are well below levels of concern (Water Quality-Based Effluent Limitations Evaluation Report, Jeff Haack, October 17, 2008). The study was re-visited using the worst case addition of 2.6 MGD and the expected pollutant discharge concentrations. The discharge levels of all the parameters were still well below those which would require a discharge limit to meet in-stream water quality criteria.

Thilmany is currently discharging biological oxygen demand (BOD) and total suspended solids levels which are a fraction of the limits contained in the WPDES wastewater permit. A 13 percent increase in the discharge volume (2.6 MGD) would have no impact on compliance with the permit conditions. Additionally, Thilmany has not requested an increase in the limits to reflect the increase in production. Section 3.2.6 of Thilmany's WPDES permit WI-0000825-07-2 contains notification requirements to the Department if planned production increases that may result in increased discharge of pollutants.

Based on the above, it is concluded that a small increase in river uptake and discharge volume will not have an impact on the receiving stream and aquatic and wild life.

6. Buildings, Treatment Units, Roads and Other Structures (include size of facilities, road miles, etc.)

None, as noted under (4).

7. Emissions and Discharges (include relevant characteristics and quantities)

The proposed project is a Type II action under Chapter 150, Wis. Adm. Code, because the increase in sulfur dioxide and nitrogen oxides emissions due to this project will be more than 100 tons per year. Net increases of emissions of particulate matter from the paper machines exceed the significance levels of NR 405.02(27), Wis. Adm. Code, and are proposed to be controlled using best available control technology (BACT) in the permit. The permit also establishes new limits to control emissions of volatile organic compounds, formaldehyde and acetaldehyde. Expected air emissions are presented in Attachment B.

8. Other Changes

None

9. Identify the maps, plans and other descriptive material attached

- Attachment County map showing the general area of the project
- Attachment C USGS topographic map
- Attachment Site development plan
- Attachment Plat map
- Attachment DNR county wetlands map
- Attachment Zoning map
- Attachment C Other - Describe: The facility is located along the Fox River.

AFFECTED ENVIRONMENT (describe existing features that may be affected by proposal)

10. Information Based On (check all that apply):

Literature/correspondence (specify major sources)

Personal Contacts (list in item 26)

Field Analysis By: Author Other (list in item 26)

Past Experience With Site By: Other (list in item 26)

11. Physical Environment (topography, soils, water, air)

The only environmental aspect expected to be affected is air quality. The surrounding area is relatively flat. The air quality in the Kaukauna area is classified as attainment/unclassified for all criteria air pollutants. There is the possibility of added water intake and wastewater discharge to the Fox River in the future.

12. Biological Environment (dominant aquatic and terrestrial plant and animal species and habitats including threatened/endangered resources; wetland amounts, types and hydraulic value)

The area is typical of east central Wisconsin. Fauna includes deer, small mammals, and many types birds, etc. No known endangered resources. If the project eventually involves significant added water intake from the Fox River, DNR will address concerns for fish entrapment or entrainment.

13. Cultural Environment

a. Land use (dominant features and uses including zoning if applicable)

The facility site is currently zoned for industry. Surrounding properties are zoned as residential.

b. Social/Economic (including ethnic and cultural groups)

The improvement of product quality and quantity will keep the Kaukauna Mill competitive which should help to preserve current jobs.

c. Archaeological/Historical

None

14. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

The Kaukauna Mill is located near the Thousand Island State Conservancy, but is not located near any Class I areas such as national monuments, preserves, or refuges. In addition, the Kaukauna Mill is not located within 100 km of the Forest County Potawatomi Reservation. There are no known archeological, historical, endangered species, or wetlands considerations involved with this project.

ENVIRONMENTAL CONSEQUENCES (probable adverse and beneficial impacts including indirect and secondary impacts)

15. Physical (include visual if applicable)

There will be an increase in the air emissions of pollutants into the atmosphere as stated in Item 7.

The effect of these emission increases was simulated with dispersion modeling. Predicted maximum concentrations from these emission increases were below standards designed to protect human health and welfare. The Kaukauna area is in attainment of national and state ambient air quality standards. As such this project is not expected to have any significant environmental consequences.

16. Biological (including impacts to threatened/endangered resources)

See item 15 above. There project is not expected to impact the fishery.

17. Cultural

a. Land Use (including indirect and secondary impacts)

No consequences are anticipated.

b. Social/Economic (including ethnic and cultural groups, and zoning if applicable)

The improvement of product quality and quantity will keep the Kaukauna Mill competitive which should help to preserve current jobs.

- c. Archaeological/Historical

No adverse impact is expected.

- 18. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

No other consequences are anticipated.

- 19. Summary of Adverse Impacts That Cannot Be Avoided (more fully discussed in 15 through 18)

Since the expansion falls under the PSD rules, future expansion of air-emitting sources in the area may be restricted due to the use of available PSD air quality increments. The potential emission increases were simulated with dispersion modeling. Predicted maximum concentrations from the potential emission increases were below standards designed to protect human health and welfare.

DNR EVALUATION OF PROJECT SIGNIFICANCE (complete each item)

- 20. Environmental Effects and Their Significance

- a. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are long-term or short-term.

There will be a long-term increase in the air emissions of pollutants into the atmosphere as stated in Item 7.

The effect of these emission increases was simulated with dispersion modeling. Predicted maximum concentrations from these emission increases were below thresholds designed to protect human health and welfare. The Kaukauna area is in attainment of national and state ambient air quality standards. As such this project is not expected to have any significant environmental consequences.

Secondary effects of the project are potential long-term needs for more water from the Fox River for the paper machines and more wastewater discharge. However, the Mill indicates these needs are minimal at this time. Effects will be considered further when the Department is notified of these needs and they are determined by the Mill.

- b. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are effects on geographically scarce resources (e.g. historic or cultural resources, scenic and recreational resources, prime agricultural lands, threatened or endangered resources or ecologically sensitive areas).

See Item 20.a. above.

- c. Discuss the extent to which the primary and secondary environmental effects listed in the environmental consequences section are reversible.

See Item 20.a. above.

- 21. Significance of Cumulative Effects

Discuss the significance of reasonably anticipated cumulative effects on the environment (and energy usage, if applicable). Consider cumulative effects from repeated projects of the same type. Would the cumulative effects be more severe or substantially change the quality of the environment? Include other activities planned or proposed in the area that would compound effects on the environment.

See Item 20.a. above.

- 22. Significance of Risk

- a. Explain the significance of any unknowns that create substantial uncertainty in predicting effects on the quality of the environment. What additional studies or analysis would eliminate or reduce these unknowns?

Air modeling was conducted. The effect of these emission increases was simulated with dispersion modeling. Predicted maximum concentrations from these emission increases were below thresholds designed to protect human health and welfare. The Kaukauna area is in attainment of national and state ambient air quality standards. As such this project is not expected to have any significant

environmental consequences.

- b. Explain the environmental significance of reasonably anticipated operating problems such as malfunctions, spills, fires or other hazards (particularly those relating to health or safety). Consider reasonable detection and emergency response, and discuss the potential for these hazards.

Existing operations include emergency response procedures that are adequate to respond to potential operating problems. No new operations, hazards, or response requirements are anticipated as a result of these projects.

23. Significance of Precedent

Would a decision on this proposal influence future decisions or foreclose options that may additionally affect the quality of the environment? Describe any conflicts the proposal has with plans or policy of local, state or federal agencies. Explain the significance of each.

This area has been baselined for emissions in accordance with the PSD rules. This project has used air quality increment. Future expansions of sources in the area may be restricted due to the use of this increment.

24. Significance of Controversy Over Environmental Effects

Discuss the effects on the quality of the environment, including socio-economic effects, that are (or are likely to be) highly controversial, and summarize the controversy.

None

ALTERNATIVES

- 25. Briefly describe the impacts of no action and of alternatives that would decrease or eliminate adverse environmental effects. (Refer to any appropriate alternatives from the applicant or anyone else.)

No Action

No capital expenditure would take place, and product quality and production efficiencies will not be improved, resulting in an erosion of global competitiveness in the market, thereby resulting in a potential loss of profitability and jobs.

Action

The project was designed based on Thilmany's needs, and must proceed in order that the Mill remain competitive in a global marketplace.

Other Locations

The project is to take place on existing equipment at the current location. Moving the project would not reduce any environmental impact and would make the project economically unfeasible.

SUMMARY OF ISSUE IDENTIFICATION ACTIVITIES

- 26. List agencies, citizen groups and individuals contacted regarding the project (include DNR personnel and title) and summarize public contacts, completed or proposed).

<u>Date</u>	<u>Contact</u>	<u>Comment Summary</u>
1/5/10	Tom Jayne, Kaukauna Mill	Discussion of Project: to lower PM, extruders S52, P52 and S55, P55 are removed.
1/4/10	Mark Nessmann, Kaukauna Mill	Discussion of Project: there are no changes to paper machine burners/dryers in this project.
1/14/10	Mark Corbett, P.E., Reichardt, Rick - DNR	Conversation with Kaukauna Mill on effects of increased wastewater discharge to Fox R. concludes negligible impact. See details under item 5.

wastewater engineers

- 1/12/10 David Rowe, DNR Fish Biologist Since there are not significant changes to the effluent or water withdrawal rate the proposal should not negatively impact the fish community in the adjacent area of the Fox River.
- 1/20/10 James Doperalski, Environmental Analyst Environmental Analysis review.

Project Name: Paper Machine Modification Project County: Outagamie

DECISION (This decision is not final until certified by the appropriate authority)

In accordance with s. 1.11, Stats., and Ch. NR 150, Adm. Code, the Department is authorized and required to determine whether it has complied with s.1.11, Stats., and Ch. NR 150, Wis. Adm. Code.

Complete either A or B below:

A. EIS Process Not Required

The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department.

B. Major Action Requiring the Full EIS Process

The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator /s/ James Crawford, P.E.	Date Signed 1/19/2010
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Number of responses to news release or other notice:

Certified to be in compliance with WEPA	
Environmental Analysis and Liaison Program Staff	Date Signed

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

Note: Not all Department decisions respecting environmental impact, such as those involving solid waste or hazardous waste facilities under sections 144.43 to 144.47 and 144.60 to 144.74, Stats., are subject to the contested case hearing provisions of section 227.42, Stats.

This notice is provided pursuant to section 227.48(2), Stats.

ATTACHMENT A

Projects described in this permit application include rebuilds for the five paper machines at the Kaukauna mill. In addition to the rebuilds there is a list of projects which could have the potential to debottleneck the paper machines with subsequent increased production levels, use increased amounts of steam in the paper making process, and/or require additional pulp from the onsite pulp mill. Any increase in steam or pulp production will not require any changes or modifications in any of the boilers or pulp mill. Any increase in paper production levels from these miscellaneous projects would not exceed the levels listed under the rebuilds.

11 PM Rebuild

The rebuild on 11PM is designed to increase the maximum daily production rate from 149.5 tpd to 160.6 tpd. The increase based on comparing 2006, 2007 actual to future actual is 4000 tpy.

Some of the planned changes include, but are not limited to, vacuum system improvements, modifications to the dryer section steam and condensate systems, and new/improved fourdrinier table elements.

12 PM Rebuild

The rebuild on 15PM is designed to increase the maximum daily production rate from 160.7 tpd to 177.4 tpd. The increase based on comparing 2006, 2007 actual to future actual is 6000 tpy.

Some of the planned changes include, but are not limited to, an increase in the fan pump capacity, new fourdrinier table elements, improved vacuum controls, improvements to the wire return roll doctors, upgrades to the turbine drive and line shaft, multiple dryer can replacements and steam system modifications, and improvements to the winder controls and trim system.

13 PM Rebuild

The rebuild on 13PM is designed to increase the maximum daily production rate from 209.1 tpd to 228.5 tpd. Note that the current title V permit states the max daily capacity is 220.1 tpd but this is the current capacity of the stock prep system to supply stock to the paper machine. The machine however is currently limited to producing paper at a rate of 209.1 tpd. The increase based on comparing 2006, 2007 actual to future actual is 7000 tpy.

Some of the planned changes include, but are not limited to, new fourdrinier table elements, improved vacuum system and controls, improvements to the dryer system and controls, steam system modifications, and improvements to the press section.

14 PM Rebuild

The rebuild on 14PM is designed to increase the maximum daily production rate from 134.4 tpd to 155.2 tpd. The increase based on comparing 2006, 2007 actual to future actual is 8000 tpy.

Some of the planned changes include but are not limited to an increase in the vacuum system capacity, couch roll double doctor blades, and modifications to the dryer section steam and condensate systems.

15 PM Rebuild

The rebuild on 12PM is designed to increase the maximum daily production rate from 279.4 tpd to 311.7 tpd. The increase based on comparing 2006, 2007 actual to future actual is 12000 tpy.

Some of the planned changes include, but are not limited to drive modifications, thick stock flow modifications, approach flow upgrades, headbox upgrade (dilution control), additional table elements, press section modifications (ex: steam box addition, roll configuration changes, shoe press), dryer upgrades (ex: stationary siphons, uniron section, threading improvements), and size press upgrades.

General comment for all rebuild projects listed above.

The rebuild projects list major pieces of equipment that would be replaced or modified. In addition to these major pieces there could be ancillary equipment modifications required as well such as new pumps, piping, lubrication equipment, and control systems. As an example, a new dilution control headbox could require piping modifications, stock pump

upgrades, new control equipment, and stock screening upgrades. The section for miscellaneous projects includes many of these ancillary items as separate projects. They can be separate or some of them could be done in conjunction with a major replacement listed in the above rebuilds.

Miscellaneous Projects

These projects could potentially provide small incremental production increases on all four paper machines compared to previous actual production levels. This occurs by allowing the machine to run faster or improving machine operating efficiencies by reducing downtime. None of these projects would allow the machines to exceed the potential production levels stated under the above listed rebuilds.

Papermaking chemicals, raw materials, and cleaners Changes in these programs could have the potential to allow increased machine speed or reduced paper breaks.

- New wet end starch which improves strength and/or drainage.
- Use of poly aluminum chloride in place of alum to improve drainage.
- New pulps which improve drainage.
- New biocide programs which reduce paper breaks.
- New deposit control chemicals which reduce paper breaks or lengthen the time between washups or boilouts.
- New cleaners which lengthen the time between washups or boilouts.
- New retention aids which improve drainage.

Paper Machine Modifications These changes to the machine or on line coaters could have the potential to allow increased machine speed or reduced downtime on the machine.

- Headbox modifications providing different flow distribution and increased capacity.
- New types of doctor blades, replacement of single doctors with double doctors, and doctor blades in new locations.
- Modification and/or addition of cleaning showers on the machine, and replacement of existing showers with new more efficient designs.
- Addition of dryer fabric cleaning to all dryer sections and additional press felt cleaning systems.
- Improvements in the paper break and sheet defect detection systems including new video camera systems.
- Improvements to the wire stretch, clothing guides, guiding systems and controls.
- Modification and optimization of the vacuum equipment associated with the fourdrinier and press sections of the machine. Examples of this include new designs and/or additional vacuum boxes, increased vacuum capacity with vacuum pump modifications, new designs and materials for table elements, additional table elements, new designs and/or additional uhle boxes, and steam showers on the uhle boxes.
- New steam boxes.
- Improvements to the dryer can fits, manholes, siphons, control systems, gears, uniron rebuilds, and conversion to single tier sections.
- New designs and capacity increases for the dryer section pocket ventilation, air supply, and exhaust systems. This includes improved control systems for increased energy efficiency and air system management controls of the exhaust air flow.
- Upgraded higher speed drives on all sections of the machine and conversion of drive controls from speed to tension.
- Improvements to machine tailing, threading, and startup systems.

- Regrind all press rolls for a wider trim on the machine. Production levels would not exceed those listed under the rebuilds.
- On line edge trim slitters for the machine, including upgrades to existing trim slitter systems. This includes replacement of existing knife slitters with water jet edge trimming using high pressure water.
- Gas fired burner auxiliary equipment upgrades that provide energy savings and do not increase the rated burner heat input capacity or raise emissions. An example of this is the Maxon Smartlink control valves and digital control systems to improve combustion efficiency.
- On line, soft nip calendar for the machine.
- Upgrades in distributed control systems (DCS) and PLC's, conversion of pneumatic controls to electrical, additional DCS and PLC integration, and improved instrumentation and monitors.
- Improvements to overhead cranes.
- Improvements to motor cooling capacity.
- Conversion of hydraulic systems to pneumatic or electrical, improvements to and/or additional hydraulic systems.
- Reel improvements including higher capacity spools, improved clutch systems, improved tension controls of primary and secondary arms, reel arm modifications to accommodate larger reel spools, load control modifications, and different reel drum materials of construction.
- Larger diameter dryer felt rolls.
- Purchase of spare equipment such as dryer cans, couch roll shell and suction box, and suction press roll shell.
- Coating kitchen improvements including additional calibration systems, batch weigh systems, high shear mixing systems, equipment modifications to allow use of new pigments and additives for new and existing paper grades, and capacity increases in coating make down and delivery systems to match higher machine speeds.
- Improvements in coating screening and filtration equipment and additional screening and filtration equipment.

Stock Preparation Area These changes could have the potential to debottleneck the paper machine by reducing downtime on the machine, or by system capacity increases designed to keep pace with higher machine speeds.

- Refiner upgrades to allow more efficient processing of fiber streams and greater throughput.
- Increased capacity of pulping, stock pumping, whitewater systems, and saveall with modifications to allow more efficient processing.
- Increased capacity and improvements in stock screening systems, cleaner systems, and water filtration systems.
- Upgrades in distributed control systems (DCS) and PLC's, conversion of pneumatic controls to electrical, additional DCS and PLC integration, and improved instrumentation and monitors.
- Increase capacity and improvements in delivery systems for wet end additives.
- Improvements and capacity increases in the broke handling system including improved control systems to maintain broke consistency.
- Fan pump modifications and capacity increases.

Finishing Equipment This equipment includes rereelers, supercalendars (supers), winders, and rewinders. These changes could have the potential to debottleneck the paper machine by reducing downtime on the machine, or by system

capacity increases designed to keep pace with higher machine speeds.

- Additional steam showers on the supers. While this is a quality improvement issue and does not have the potential to debottleneck the paper machine it could result in the use of additional steam from the boilers. No modifications would be required at the boilers to supply this steam.
- Upgrades in distributed control systems (DCS) and PLC's, conversion of pneumatic controls to electrical, additional DCS and PLC integration, and improved instrumentation and monitors.
- Upgraded higher speed drives on all finishing equipment and improvements to existing drives to allow better speed control.
- Additional winders and supers.
- General rebuilds to all finishing equipment to allow higher speeds if new higher speed drives are installed.
- Winder improvements including auto positioning, core chuck drives, new slitters, roll conveyer upgrades, new drum materials, new trim vac system, and new unwinds.
- Upgraded rereeler slitters and drum materials.
- Supercalender improvements including new drum materials, upgraded reel hydraulics, unwind and windup modifications to allow larger reels, swim roll additions and controls upgrade, reel replacement with rider roll system, and new roll materials.
- For all finishing equipment, unwind and windup stand improvements and clutch upgrades.

ATTACHMENT B

Net Emission Increase from Proposed Kaukauna Mill Modifications [Actual - to - Future Projected Actual Emissions]

*** average actual information for 2006-2007 ***

	2006-2007 Average					
Paper Machine Emission Source →	10PM - P16	11PM - P11	12PM - P16	13PM - P13	14PM - P14	15PM - P15
Emissions per AEI - tons ▼						
VOC from slush pulp use - 0.069 lb/ton	1.010	1.280	1.368	1.812	1.132	2.494
VOC from wet end additives	1.135	1.264	1.538	1.131	9.136	0.284
VOC from coating	0.000	0.888	0.000	1.209	4.805	1.597
VOC from gas combustion	0.000	0.000	0.000	0.007	0.000	0.013
Total VOC	2.145	3.431	2.906	4.158	15.073	4.388
SO2 from gas combustion	0.000	0.000	0.000	0.002	0.000	0.003
CO from gas combustion	0.000	0.000	0.000	0.089	0.000	0.167
NOx from gas combustion	0.000	0.000	0.000	0.349	0.000	0.656
PM =PM10 from gas combustion	0.000	0.000	0.000	0.019	0.000	0.036
Particulate PM=PM10 0.075lb/ton	1.098	1.391	1.487	1.969	1.230	2.711
TRS	0.074	0.093	0.099	0.131	0.082	0.181
Paper Production ton/yr	29266	37095	39631	52507	32806	72284
Steam Used - mmBtu/yr	277794	341879	247530	568064	160752	846867
Note: P16 combines both machines into one source						
Boiler B11 Emission Source →	Blend Coal/Pet Coke	Gas - mmcf	#6 oil - kgal	Paper - tons	TDF - tons	SUM
Quantity/yr	106165	6.8	70	2326	3338	
mmBtu/yr	2586039	6894	10939	41873	96811	2742557
Emissions per AEI - tons ▼						
CO	123.2	0.3	0.2	4.0	6.3	134
SO2	4994.0	0.004	0	0	2.5	4997
NOx	1260.1	1.5	1.7	1.7	64.4	1329
VOC	5.4	0.03	0.01	0.1	2.7	8
Particulate PM	194.3	0.04	0.1	4.1	9.0	208
Particulate PM10	136.0	0.04	0.1	2.9	6.3	145
Sulfuric Acid - NCASI factor	60.9					61
Lead - Stack 9/04	0.038					0
Hydrogen Fluoride - Fire 6.23	8.0					8
Notes: SO2 data from CEM and split up between fuels - not calculated directly from fuel use For solid fuel PM10 = 70% of total; Liq, gas = 100% of total						
Coal Pile Operations F01 - tons						
PM	0.106					
PM10	0.041					
Coal Pile Maintenance F03 - tons						
PM	0.114					
PM10	0.031					
Ash Loading - tons						
PM	5.621					
PM10	3.373					
TOTALS - Tons						
PM	5.841					
PM10	3.445					
TOTAL for Pulp Mill/ETP Sources		ton pollutant/ton pulp	ton pollutant increase			
CO	406.46	0.002911	57.7			
NOx	88.55	0.000634	12.6			
SO2	99.73	0.000714	14.2			
VOC	158.72	0.001137	22.5			
PM	85.38	0.000611	12.1			
PM10	59.84	0.000429	8.5			
H2SO4	1.36	0.000010	0.2			
TRS	31.44	0.000225	4.5			

Net Emission Increase from Proposed Kaukauna Mill Modifications (tons/year)

[Future Projected Actual Emissions] and [Actual-to-Future Projected Actual Emissions (Net Emission Increase)]

Paper Machine Emission Source →	10PM - P16	11PM - P11	12PM - P16	13PM - P13	14PM - P14	15PM - P15				
Average Paper Production - tpy	29266	37095	39631	52507	32806	72284				
Paper Production Increase - tpy	0	4000	6000	7000	8000	12000				
Actual Emissions from Paper Machines										
Paper Machine Emission Source →	10PM - P16	11PM - P11	12PM - P16	13PM - P13	14PM - P14	15PM - P15				
Particulate PM=PM10 0.075lb/ton	1.098	1.391	1.487	1.969	1.230	2.711				
PM =PM10 from gas combustion	0.000	0.000	0.000	0.019	0.000	0.036				
Total VOC	2.145	3.431	2.906	4.158	15.073	4.388				
CO	0.000	0.000	0.000	0.089	0.000	0.167				
TRS	0.074	0.093	0.099	0.131	0.082	0.181				
Emission Increase for Paper Machines based on production increases due to projects										
PM=PM10 0.075lb/ton Increase due to paper production increase	0.000	0.150	0.225	0.263	0.300	0.450				
PM=PM10 gas combustion increase due to paper production increase	0.000	0.000	0.000	0.003	0.000	0.006				
Total PM=PM10 increase due to paper production increase	0.000	0.150	0.225	0.265	0.300	0.456				
VOC Increase due to paper production increase	0.000	0.370	0.440	0.554	3.676	0.728				
CO Increase due to paper production increase	0.000	0.000	0.000	0.012	0.000	0.028				
TRS Increase due to paper production increase	0.000	0.010	0.015	0.017	0.020	0.030				
Future Actual for Paper Machines based on production increases due to projects										
	10PM - P16	11PM - P11	12PM - P16	13PM - P13	14PM - P14	15PM - P15				
Total PM=PM10 future actual due to paper production increase	1.098	1.541	1.712	2.253	1.530	3.202				
VOC future actual due to paper production increase	2.145	3.801	3.345	4.712	18.748	5.116				
CO future actual due to paper production increase	0.000	0.000	0.000	0.100	0.000	0.194				
TRS future actual due to paper production increase	0.074	0.103	0.114	0.148	0.102	0.211				
Total Emissions Net for PSD Applicability Determination										
	SO2	NOx	VOC	PM	PM10	CO	TRS	H2SO4	Lead	Flourides
PSD Threshold - tpy	40	40	40	25	15	100	10	7.0	0.6	3.0
Paper Machine Increases/Decreases	Insignificant*	Insignificant*	5.768	1.396	1.396	0.039	0.092	0	0	0
Boiler B11 Increases due to paper machine projects	793.8	200.3	0.9	30.9	21.6	25.6	0	9.68	0.006	1.3
Misc. Coal Operation increases due to paper machine projects	0.0	0.0	0.0	0.971	0.547	0.0	0	0.00	0.000	0.0
Pulp Mill Increases to supply unbleached pulp for paper machine projects	14.2	12.6	22.55	12.13	8.50	57.7	4.5	0.19	0	0
Boiler B11 Increases due to increased pulp for paper machine projects	191.6	48.4	0.2	7.5	5.2	4.7	0	2.3	0.001	0.3
Misc. Coal Operation increases due to increased pulp for paper machine projects	0.0	0.0	0.0	0.234	0.006	0	0	0	0	0
NET	999.6	261.2	29.4	53.07	37.29	88.1	4.6	12.2	0.008	1.6
* Will not register at 3 decimal places										

B11 and B09 use the same coal as fuel. Worst-case emissions would be that all steam increase would be generated by either of B11 or B9. This analysis chose to use B11.

