State of Idaho
Department of Environmental Quality
Air Quality Division

AIR QUALITY PERMIT
STATEMENT OF BASIS

Permit to Construct No. P-2009.0020

Final

Clearwater Paper Corporation

Pulp and Paper Mill

Lewiston, Idaho

Facility ID No. 069-00001

March 31, 2009

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Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
gr	grain (1 lb = 7,000 grains)
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
FEC	Facility Emissions Cap
gpm	gallons per minute
HAP	hazardous air pollutant
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
m	meter(s)
MACT	Maximum Achievable Control Technology
$\mu g/m^3$	micrograms per cubic meter
MMBtu	million British thermal units
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PC	permit condition
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	toxic air pollutant
T2	Tier II operating permit
T2/PTC	Tier II operating permit and permit to construct
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. FACILITY INFORMATION

1.1 Facility Description

Clearwater Paper Corporation, Idaho Pulp and Paperboard Division operates a kraft pulp mill in Lewiston, Idaho. The mill produces bleached kraft pulp, which is processed in three different areas. Uncoated and coated paperboard is produced in the paper machine area; market pulp is dried on the pulp dryer in the finishing area; and slurried pulp stock is pumped to Clearwater Paper Corporation, Consumer Product Division, which is adjacent to the Idaho Pulp and Paperboard Division.

1.2 Permitting Action and Facility Permitting History

Permit to Construct

This PTC is a revision of an existing PTC. The following permitting history was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

September 9, 1988 P-1140-0001, Lime Slaking and Associated Lime Handling, Permit status (S)

2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

2.1 Application Scope

Clearwater Paper Corporation (Clearwater) is asserting that the particulate matter emission limits in the September 9, 1988 permit to construct issued for the lime handling and lime slaking system contains an error on the emissions limits for the lime handling baghouse. The September 9, 1988, permit includes a lime handling baghouse emission limit of 0.01 pound per hour for PM/PM_{10}. Clearwater states that the emission limit should actually have been 0.01 grains per dry standard cubic foot, which is a standard design specification for particulate matter emissions from baghouses. Clearwater also asserted that the baghouse controlling emissions from the lime handling system is actually inherent process equipment; therefore, there is not a need have permit conditions requiring the operation of the baghouse. Because of these reasons and because actual PM/PM_{10} emissions are less than 1.5 tons per year (i.e. less than the exemption criteria for below regulatory concern) Clearwater requested that the permit requirements on the lime handling system be deleted from the permit.

Clearwater also requested cancellation of PTC No. 069-0001, issued January 29, 1997 for the No. 4 and No. 5 Recovery Boiler salt cake systems. That request is not being processed concurrent with the request to change the lime handling system permit. The request to terminate the permit for the No. 4 and No. 5 Recovery Boiler salt cake systems includes removing a throughput restriction on salt cake. Clearwater did not address potential emissions changes at other emissions units at the facility due to the potential increased utilization of salt cake.

2.2 Application Chronology

February 19, 2009 DEQ received Clearwater's application to delete Lime handling from PTC No. 1140-0001, issued September 9, 1988

March 24, 2009 DEQ received a $1,000 permit to construct process fee from Clearwater

3. TECHNICAL ANALYSIS

3.1 Emission Unit and Control Device

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

Emission Unit /ID No.	Emissions Unit Description	Control Device Description	Emissions Discharge Point ID No. and/or Description
Lime Handling	Transfer Points in Lime handing	Baghouse Manufacturer: Flex-Kleen Bags: Nomex (14 oz.)	Lime Handling Baghouse Stack

3.2 Emissions Inventory

Emissions from the lime handling baghouse were estimated by Clearwater on the basis that emissions from the baghouse would not exceed 0.01 gr/dscf.

- Design Flow rate = 6,000 acfm @ 400 F
- PM/PM_{10} Grain Loading = 0.01 gr/dscf
- Assume Moister = 0%

$$(6{,}000 \text{ acfm}) \times (528/460 + 400) = 3{,}684 \text{ dscfm}$$

$$(3{,}684 \text{ dscfm})(0.01 \text{ gr/dscf})(\text{lb}/7{,}000 \text{ gr})(60 \text{ min/hr}) = 0.32 \text{ lb/hr}$$

$$(0.32 \text{ lb/hr})(8760 \text{ hr/yr})(\text{ton}/2{,}000 \text{ lb}) = 1.4 \text{ ton/yr } PM/PM_{10}$$

Lime is a listed toxic air pollutant, and all of the particulate matter emitted can be presumed to be lime. No other regulated toxic air pollutants are emitted.

Current permitted Lime Handling Baghouse emission rates are 0.01 lb/hr and 0.04 T/yr

Emission increases due to this action are summarized in Table 3.2

Table 3.2 LIME HANDLING BAGHOUSE CONTROLLED PTE CHANGE SUMMARY

Emission Point	Existing Permit Limits PM/PM_{10}		Proposed Emission Rates $PM/PM_{10}/CaO$		Change in Emissions $PM/PM_{10}/CaO$	
	Lb/hr	Ton/yr	Lb/hr	Ton/yr	Lb/hr	Ton/yr
Lime Handling Baghouse	0.01	0.04	0.32	1.4	0.31	1.36

3.3 Ambient Air Quality Impact Analysis

Project-specific modeling is not necessary for this permitting action because of the following:

1. Although the PM_{10} emissions increase is over the modeling threshold listed in the modeling guideline (0.2 lb/hr) it is well below the recently developed secondary discretionary threshold of 0.9 lb/hr. Thresholds are developed to assure impacts are below significant contribution levels (i.e. 5.0 $\mu g/m^3$, 24 hour concentration).

2. The distance to ambient air (about 800 ft) is well beyond the distance used in the generic modeling for development of the secondary thresholds.

3. The high temperature of the exhaust will result in greater thermal buoyancy, further minimizing the maximum offsite impact.

In summary, emissions changes from this project, which are 0.31 pounds per hour for particulate matter and the same for calcium oxide, cause an ambient impact less that 5 $\mu g/m^3$. This impact is below the level which has been determined to be a regulatory concern (insignificant) for particulate matter and is below the allowable toxic air pollutant increment of 100 $\mu g/m^3$ for calcium oxide.

3.4 Origin of Existing Emissions Limits

Following is a discussion regarding the changes made to existing PTC No. 1140-0001, issued September 9, 1988, for the lime handling and lime slaking system.

None of the existing permit conditions for the lime slaking system are changed by this permit action.

Existing permit condition 2.2 includes PM and PM_{10} emission rate limits of 0.01 lb/hr and 0.04 ton/yr on the lime handling baghouse. These emission rate limits originate from the September 9, 1988, Permit to Construct (No. 1140-0001) issued for the lime slaking and lime handling systems. Clearwater states that actual emissions from the lime handling baghouse are not changing though the emission limit for the lime handling baghouse of 0.01 pound per hour for PM/PM_{10} should actually have been 0.01 grains per dry standard cubic foot; which is a standard design specification for particulate matter emissions from baghouses. No evidence was presented that supports this presumption, nor could any evidence be found in the source files which supports it. Further, Clearwater asserts that the baghouse would be operated for worker safety reasons even in the absence of air pollution control laws because warm, caustic lime has the potential to cause chemical burns on near-by workers. Therefore, Clearwater maintains that permit conditions requiring the operation of the baghouse are unnecessary, as are any emission rate limitations. The baghouse is argued to be inherent process equipment rather than air pollution control equipment.

Based on review of EPA criteria[1] for determining whether equipment is an air pollution control device or inherent process equipment, DEQ concludes the primary purpose of the baghouse is to control air pollution. These criteria are:

1. Is the primary purpose of the equipment to control air pollution?

2. Where the equipment is recovering product, how do the cost savings from the product recovery compare to the cost of the equipment?

3. Would the equipment be installed if no air quality regulations are in place?

Clearwater's primary argument that the baghouse is process equipment instead of air pollution control equipment is solely based on the need to control air pollution to protect workers. No economic incentive to control the emissions of lime was provided and Clearwater stated that the purpose of the baghouse was not to capture product. Thus the primary purpose of the baghouse is to control air pollution. Therefore, DEQ does not agree that the baghouse is process equipment, and in order for the emissions

[1] EPA Criteria for Determining Whether Equipment is Air Pollution Control Equipment or Process Equipment, November 27, 1995 (http://www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/proequip.pdf)

reductions due to operation of the baghouse to be creditable, the permit must require operation of the baghouse.

Regarding emissions limits, Clearwater estimated PM/PM_{10} emissions from the lime handling baghouse to be 0.32 pounds per hour. As discussed in the modeling section of this Statement of Basis (Section 3.3) the emissions change from the current permitted rate of 0.01 lb/hr hour to 0.32 lb/hr (the emission rate estimated based on 0.01 gr/dscf) causes an insignificant change in ambient impact. It follows that an explicit emission rate limit is not needed to limit ambient impact to below insignificant ambient impact thresholds; though a permit requirement to operate, and monitor the baghouse is required.

The annual emission limit in the current permit for the lime handling system and the lime slaker is 7.57 tons per year for PM/PM_{10}. Relaxing the potential to emit of the lime handling system from 0.04 tons per year to 1.4 tons per year changes the potential to emit of the project which was permitted in 1988 (lime handling system and lime slaking) from 7.57 tons per year to 8.93 tons per year. Therefore, there is not a relaxation in the potential to emit which would cause the project permitted in 1988 to become a major modification solely by virtue of that relaxation. The potential to emit of the project (8.93 tons/year) remains below the significant emission rate of 15 tons per year for PM_{10}.

DEQ concludes that the potential to emit of the lime handling system can be limited to 1.4 tons per year (0.32 lb/hr) by requiring that a baghouse be installed (and monitored) to control emissions from the lime handling system without the need for an emission rate limit which would be considered below regulatory concern in the context of the exemption criteria[2]. Further supporting the fact that an emission rate limit is not needed is the fact that the potential to emit of the lime handling baghouse could be increased by 6 tons per year[3], and the relaxation still would not trigger a major modification to occur. In summary; requiring the operation of the baghouse to control emissions from the lime handling sufficiently limits the potential to emit to avoid triggering a major modification without the need for an explicit emission rate limit.

[2] Though the permit to construct exemption criteria is not applicable to this permit action (which is a request for a relaxation on the potential to emit of an existing permitted facility) it does have relevance when considering whether an explicit emission rate limit should be included in a permit.

[3] The potential to emit of the 1988 Permit to Construct for lime handling and slaking is 8.93 tons of PM-10. A major modification would occur if potential emissions were 15 tons per year, therefore the potential to emit may be increase by 6 tons (15 - 8.93 = 6) and not cause a major modification.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Lewiston, Nez Perce County, Idaho, which is designated as unclassifiable/attainment for all regulated criteria pollutants (i.e., PM_{10}, CO, NO_X, SO_2, lead, and ozone). Reference 40 CFR 81.313.

4.2 Permit to Construct (IDAPA 58.01.01.201)

Clearwater is requesting to revise the existing permit limits on the lime handling baghouse. This change requires that a revised permit to construct be issued to allow that change.

4.3 Tier II Operating Permit (IDAPA 58.01.01.401)

This permit to construct revision does not affect any Tier II operating permit conditions that have been issued to Clearwater.

4.4 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

This facility is a major facility as defined by IDAPA 58.01.01.008.10 because it emits or has the potential to emit regulated air pollutants (SO_2, NOx, CO, PM_{10}, VOC, and HAPs) in amounts greater than or equal to major facility threshold(s) listed in Subsection 008.10.

Table 4.1 CLEARWATER PAPER CORPORATION POTENTIAL TO EMIT SUMMARY

Source	PM_{10} (T/yr)	SO_2 (T/yr)	CO (T/yr)	NOx (T/yr)	VOC (T/yr)	TRS (T/yr)	Maximum Individual HAP (T/yr)
Facility Total	833	1536	5889	2191	605	214	230[1]

1) Methanol

4.5 PSD Classification (40 CFR 52.21)

This facility is a designated facility as defined by IDAPA 58.01.01.006.30 – Kraft Pulp Mills.

This facility is a major PSD facility as defined by IDAPA 58.01.01.205 because it is a designated facility that emits or has the potential to emit a regulated criteria air pollutant in amounts greater than or equal to 100 tons per year.

4.6 NSPS Applicability (40 CFR 60)

The lime handling system is not defined as an affected facility by any New Source Performance Standard (NSPS).

4.7 NESHAP Applicability (40 CFR 61)

The lime handling system is not defined as an affected facility by any 40 CFR 61 Standard.

4.8 MACT Applicability (40 CFR 63)

The lime handling system is not defined as an affected facility by any MACT standard.

4.9 CAM Applicability (40 CFR 64)

An emission rate limit is not included in the revised permit for the lime handling baghouse; therefore, CAM is not applicable to the Lime Handling System.

4.10 Permit Conditions Review

This section describes the permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

The lime slaking permit conditions included in the September 9, 1988 permit remain unchanged.

Deleted Emission Rate Limits On Lime Handling Baghouse Stack

The existing particulate matter (both PM and PM_{10}) emission rate limits on the lime handling baghouse stack have been deleted. The potential to emit of the lime handling baghouse is 0.32 lb/hr and 1.4 tons/yr. The permit requires that a baghouse be operated to control emissions from lime handling operations. This, coupled with a periodic visible emissions inspection and the requirement to take corrective action if visible emissions exceed 5%, serves to limit the lime handling baghouse stack emissions to 0.32 lb/hr and 1.4 tons/yr without a need to include specific emission rate limit in the permit.

Requirement to Install and Operate a Baghouse

To make it absolutely clear that a baghouse must be used to control emissions from lime handling, Permit Condition 2.4 was added which requires that a baghouse shall be used to control emissions from the lime handling system.

Added Visible Emissions Monitoring Requirement

The current permit requires that maintenance shall be performed on the lime handling baghouse if visible emissions exceed 5%, though the permit does not require monitoring of visible emissions. Therefore, the following monitoring requirement was included in the revised permit:

2.7 The permittee shall conduct a one-minute visible emission observation of the lime-handling baghouse and the slaker scrubber stack once each calendar week. The inspection shall consist of a see/no see evaluation for each potential source of visible emissions. If visible emissions are observed from either emissions point, a visible emissions observation using EPA Method 9 shall be conducted. If visible emissions exceed the opacity thresholds in Permit Condition 2.5 or 2.6, maintenance shall be performed as required by those permit conditions. Records of the visible emissions observations shall be maintained in accordance with General Provision 7. Records shall also be maintained on any maintenance that has been conducted.

Visible Emissions Limit is Redundant

The current permit includes 20% opacity requirement of IDAPA 58.01.01.625. The Tier I Operating permit issued to Clearwater includes this requirement, and it has been deleted from this permit to construct.

Fugitive Dust Emission Limit Deleted

The current permit includes 0.08 pounds per hour and 0.35 tons per year emission rate limits on fugitive emissions from the lime handling system. These fugitive emission rate limits have been deleted from the permit because they are practically unenforceable. Fugitive emissions are still required to be reasonably controlled.

Requirement to Reasonably Control Fugitive Dust is Redundant

The current permit includes the general requirement to reasonably control fugitive dust of IDAPA 58.01.01.650. The Tier I Operating permit issued to Clearwater includes this requirement and it has been deleted from this permit to construct.

All other existing permit conditions remain unchanged.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The facility is subject to a processing fee of $1,000 in accordance with IDAPA 58.01.01.225 because increases of emissions identified in the permit to construct are less than one ton per year. Refer to the chronology for fee receipt dates.

Table 5.1 PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM_{10}	1.36	0	1.36
VOC	0.0	0	0.0
HAPS	0.0	0	0.0
Total:	**0.0**	**0**	**1.36**
Fee Due	**$ 1,000.00**		

6. PUBLIC COMMENT

An opportunity for public comment period on the PTC application is not required because the permit does not include an increased emission rate limit; the emission rate limit is being removed from the permit because it is unnecessary. The permit is being processed as a revision in accordance with IDAPA 58.01.01.209.04 and an opportunity for a public comment period is not required because the revision does not result in an increase in permitted emissions.

Appendix A – AIRS Information

AIRS/AFS Facility-wide Classification Form

Facility Name: Clearwater Paper Corporation

Facility Location: Lewiston

Facility ID: 069-00001 **Date:** 2/25/09

Project/Permit No.: P-2009.0020 **Completed By:** Dan Pitman

☒ Check if there are no changes to the facilitywide classification resulting from this action. (compare to form with last permit)

☐ Yes, this facility is an SM80 source.

Identify the facility's area classification as A (attainment), N (nonattainment), or U (unclassified) for the following pollutants:

	SO2	PM10	VOC
Area Classification:	U	U	U

DO NOT LEAVE ANY BLANK

Check one of the following:

☐ **SIP** [0] - Yes, this facility is subject to SIP requirements. (do not use if facility is Title V)

OR

☒ **Title V** [V] - Yes, this facility is subject to Title V requirements. (If yes, do not also use SIP listed above.)

For SIP or TV, identify the classification (A, SM, B, C, or ND) for the pollutants listed below. Leave box blank if pollutant is not applicable to facility.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	A	A	A	A	A	A	A

☐ **PSD** [6] - Yes, this facility has a PSD permit.

If yes, identify the pollutant(s) listed below that apply to PSD. Leave box blank if pollutant does not apply to PSD.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	☒	☒	☒	☒	☒	☒	☐

☐ **NSR - NAA** [7] - Yes, this facility is subject to NSR nonattainment area (IDAPA 58.01.01.204) requirements.

Note: As of 9/12/08, Idaho has no facility in this category.

If yes, identify the pollutant(s) listed below that apply to NSR-NAA. Leave box blank if pollutant does not apply to NSR - NAA.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	☐	☐	☐	☐	☐	☐	☐

☐ **NESHAP** [8] - Yes, this facility is subject to NESHAP (Part 61) requirements. (THAP only)

If yes, what CFR Subpart(s) is applicable?

☒ **NSPS** [9] - Yes, this facility is subject to NSPS (Part 60) requirements.

If yes, what CFR Subpart(s) is applicable? D, Dc, BB

If yes, identify the pollutant(s) regulated by the subpart(s) listed above. Leave box blank if pollutant does not apply to the NSPS.

	SO2	NOx	CO	PM10	PT (PM)	VOC	THAP
Classification:	☒	☒	☐	☐	☒	☐	☐

☒ **MACT** [M] - Yes, this facility is subject to MACT (Part 63) requirements. (THAP only)

If yes, what CFR Subpart(s) is applicable? S, MM, JJJJ, ZZZZ