

1 BEFORE THE BOARD OF HEALTH AND ENVIRONMENTAL SCIENCES
2 OF THE STATE OF MONTANA

3	In the Matter of Compliance of)	
	Plum Creek Manufacturing, L.P.,)	
4	Kalispell, Montana, with)	STIPULATION
	40 CFR 50.6, National Ambient)	
5	Air Quality Standard for)	
	Particulate Matter and ARM)	
6	16.8.821, Montana Ambient Air)	
	Quality Standard for PM-10)	
7	-----	

8 The Department of Health and Environmental Sciences
9 ("Department"), and Plum Creek Manufacturing, L.P., ("Plum
10 Creek"), hereby stipulate and agree to all the following
11 Paragraphs 1-19 inclusive, including the exhibits as refer-
12 enced below, in regard to the above-captioned matter and
13 present the same for consideration and adoption by the Board
14 of Health and Environmental Sciences ("Board"):

15 A. BACKGROUND:

16
17 1. On July 1, 1987, the United States Environmental
18 Protection Agency ("EPA") promulgated national ambient air
19 quality standards for particulate matter (measured in the
20 ambient air as PM-10, or particles with an aerodynamic diame-
21 ter less than or equal to a nominal 10 micrometers) ("partic-
22 ulate matter NAAQS"). The annual standard of 50 micrograms
23 per cubic meter (annual arithmetic mean), and the 24-hour
24 standard of 150 micrograms per cubic meter (24-hour average
25 concentration), were promulgated by EPA pursuant to Section
26 109 of the Federal Clean Air Act, 42 U.S.C. 7401, et seq., as
27

(STIPULATION)

Replaces Pages:
September 10, 1993

Page: 211 of 235

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

1 amended by the Clean Air Act Amendments of 1990 ("Act").

2 2. Section 110 of the Act requires each state to sub-
3 mit an implementation plan for the control of each air pol-
4 lutant for which a national ambient air quality standard has
5 been promulgated. Since a standard has been promulgated for
6 particulate matter, the State of Montana is required to sub-
7 mit an implementation plan for particulate matter to EPA.

8 3. Section 75-2-202, MCA, requires the Board to estab-
9 lish ambient air quality standards for the state. Sections
10 75-2-111(3) and 75-2-401, MCA, empower the Board to issue
11 orders upon a hearing before the Board concerning compliance
12 with national and state ambient air quality standards.

13 4. On April 29, 1988, the Board adopted state ambient
14 air quality standards for PM-10, including an annual standard
15 of 50 micrograms per cubic meter (annual arithmetic mean),
16 and a 24-hour standard of 150 micrograms per cubic meter (24-
17 hour average concentration). ARM 16.8.821 ("PM-10 MAAQS").

18 5. On August 7, 1987, the Kalispell area was designat-
19 ed as a Group I area by EPA. 52 Fed. Reg. 29383. Pursuant
20 to the Federal Clean Air Act all Group I areas, including
21 Kalispell, are designated by operation of law to be in non-
22 attainment for the particulate matter NAAQS. 42 U.S.C.
23 7407(d)(4)(B), as amended. Further, the Act designated the
24 Kalispell area as a "moderate" PM-10 nonattainment area. 42
25 U.S.C. 7513(a), as amended. For areas designated as "moder-
26 ate", the state was required to submit to EPA an implementa-
27

(STIPULATION)

Replaces Pages:
September 19, 1993

Dated:

Page: 212 of 235

1 tion plan no later than one year from enactment of November
2 15, 1990 amendments to the Act. 42 U.S.C. 7513a(a)(2). The
3 area encompassed in the moderate nonattainment designation
4 (hereafter "Kalispell nonattainment area") generally includes
5 the City of Kalispell and that portion of Flathead County
6 within the vicinity of the boundaries of the City of Kali-
7 spell. A map of the Kalispell nonattainment area is attached
8 to the Stipulation as Exhibit A and by this reference is
9 incorporated herein in its entirety as part of this document.

10 6. Results of air quality sampling and monitoring from
11 1986 through 1991 have demonstrated violations within the
12 Kalispell nonattainment area of the 24-hour standard con-
13 tained in both the particulate matter NAAQS and the PM-10
14 MAAQS.

15 7. On November 25, 1991, Governor Stephens submitted
16 to EPA an implementation plan for Kalispell, Montana, demon-
17 strating attainment of the particulate matter NAAQS. The
18 implementation plan relied upon the receptor modeling tech-
19 nique known as chemical mass balance (CMB) to identify the
20 major emission sources contributing to noncompliance. The
21 implementation plan consisted of an emission control plan
22 that controlled fugitive dusts emissions from roads, parking
23 lots, construction and demolition projects, and barren
24 ground.

25 8. On April 29, 1992, EPA notified Governor Stephens
26 that the Kalispell implementation plan could be conditionally
27

(STIPULATION)

3

Replaces Pages:
September 19, 1993

Dated:

Page: 213 of 235

Page 15.2.4 (213)

Chapter 15

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

1 approved if certain deficiencies were corrected. A deficien-
2 cy identified by EPA was that the emission limitations set
3 for industrial sources (or in some cases for industrial sour-
4 ces where there was no emission limitation set at all) could
5 result in significant emission increases above the emission
6 levels occurring during the source apportionment modeling
7 study (CMB). Furthermore, such potential emissions increases
8 were not accounted for in the particulate matter NAAQS demon-
9 stration of attainment.

10 9. On June 15, 1992, Governor Stephens submitted a
11 letter to EPA committing to additional analysis utilizing
12 dispersion modeling technique on the Kalispell area industri-
13 al sources. If the dispersion modeling indicated that a
14 source significantly impacted the nonattainment area, the
15 Governor further committed to developing new emission limita-
16 tions on the Kalispell area industrial sources which would
17 demonstrate attainment of the particulate matter NAAQS.

18 10. The results of the earlier CMB modeling study were
19 in part dependent upon the level of actual emissions from the
20 various sources in the Kalispell area during the study peri-
21 od. However, and based upon a review of the allowable emis-
22 sions for those same sources, the department is concerned
23 that the allowable emissions do not correlate well to the
24 actual emissions occurring during the period of CMB analysis.
25 For example, in the case of Plum Creek, some emission points
26 are not subject to emissions limitations, and other emission
27

(STIPULATION)
4

Replaces Pages:

September 19, 1993

Dated:

Page: 214 of 235

Page 15.2.4 (214)

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

1 have negotiated specific limitations and conditions that are
2 to be applicable to Plum Creek. The specific conditions
3 which comprise these limitations are contained in Exhibit B
4 to this Stipulation (entitled "Emission Limitations and Con-
5 ditions, Plum Creek, Inc.") which is attached hereto and by
6 this reference is incorporated herein in its entirety as part
7 of this document.

8 13. Both parties understand and agree that if EPA finds
9 the Kalispell implementation plan incomplete or disapproves
10 the plan, or if future violations of the particulate matter
11 NAAQS or PM-10 standard MAAQS occur, this Stipulation may be
12 renegotiated and made enforceable through an associated Board
13 Order or simply superseded by a subsequent order of the Board
14 upon notice of hearing.

15 14. The Department is the state agency that is primari-
16 ly responsible for the development and implementation of the
17 State Implementation Plan under the Federal Clean Air Act.
18 Section 75-2-112(2)(c), MCA. Under Sections 75-2-101, MCA,
19 et seq., the Board is required to protect public health and
20 welfare by limiting the levels and concentrations of air
21 pollutants within the state. Such responsibility includes
22 the adoption of emission standards (Section 75-2-203, MCA)
23 and the issuance of orders (Sections 75-2-111(3), 75-2-401,
24 MCA) to effectuate compliance with national and state ambient
25 air quality standards.

26 15. The parties to this Stipulation agree that upon
27

(STIPULATION)

Replaces Pages:
September 19, 1999

Dated:

Page: 216 of 235

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

1 finding the limitations and conditions contained in Exhibit B
2 to this Stipulation to be necessary for the Kalispell non-
3 attainment area to meet the particulate matter NAAQS and the
4 PM-10 MAAQS, the Board has jurisdiction to require the im-
5 position of such limitations and conditions, and may adopt the
6 same as enforceable measures applicable to Plum Creek.

7 16. The conditions and limitations contained in Exhibit
8 B to this Stipulation are consistent with the provisions of
9 the Montana Clean Air Act, Title 75, Chapter 2, MCA, and
10 rules promulgated pursuant to that Act.

11 17. Any obligations in this Stipulation and attached
12 Exhibit B that are more stringent than conditions set forth
13 in an air quality permit issued to Plum Creek, supersede the
14 less stringent permit conditions.

15 18. Accordingly, the parties to this Stipulation agree
16 that it would be consistent with the terms and intent of this
17 Stipulation for the Board to issue an Order imposing the
18 terms in this Stipulation and the limitations and conditions
19 contained in Exhibit B of this Stipulation, and adopting the
20 same as enforceable measures applicable to Plum Creek.

21

22

23 PLUM CREEK MANUFACTURING, L.P.

MONTANA DEPARTMENT OF
HEALTH AND ENVIRONMENTAL
SCIENCES

24
25 BY Charles P. Shriver
26 Its:

BY William R. Robinson
for Robert J. Robinson
Director

27

(STIPULATION)

7

Replaces Pages:

Dated:

September 19, 1993

Page: 217 of 235

~~STATE OF MONTANA~~ Subject: ~~Flathead County~~
~~AIR QUALITY CONTROL~~ ~~Air Quality Control~~
~~IMPLEMENTATION PLAN~~ Program

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

BY *Mark T. [Signature]*
Attorney

BY *Timothy R. Baker*
Timothy R. Baker
Attorney

DATE 9/15/93

DATE 9/17/93

(STIPULATION)
8

~~Replaces Pages:~~
~~September 13, 1993~~

~~Dated:~~
~~Page: 218 of 235~~

STATE OF MONTANA
 AIR QUALITY CONTROL
 IMPLEMENTATION PLAN

Subject: Flathead County
 Air Quality Control

EXHIBIT B
 EMISSION LIMITATIONS AND CONDITIONS

Plum Creek Manufacturing, LP
 Evergreen Facility
 P.O. Box 5257
 Kalispell, MT 59903

The above named company is hereinafter referred to as "Plum Creek."

Section I: Affected Facility

Plum Creek's Evergreen plywood plant located approximately 3 miles northeast of Kalispell, Montana near the Evergreen subdivision in SW¼, Section 33, Township 29 North, Range 21 West, Flathead County.

Section II: Limitations and Conditions

A. Conditions

1. Plum Creek shall comply with all requirements contained in this stipulation and all requirements contained in air quality permits issued by the department unless otherwise noted.
2. Plum Creek shall comply with the emission limitations contained in Table 1. The emission limitations in Table 1 supersede the related emission limitations in the air quality permit issued by the department.

Table 1

Source	Particulate Matter lbs/hr	PM-10 lbs/hr	Part. Matter Ton/yr	PM-10 Tons/yr
Hog Fuel Boiler	16.1	16.1	70.52	70.52
Two Veneer Dryers	32.8	24.1	143.66	105.56
Sawmill Chip Bin Cyclone	2.58	1.29	11.30	5.65
Planer Shavings Bin Cyclones	16.40	8.20	71.83	35.92
Fines Cyclone	1.34	0.67	5.87	2.93
Sanderdust Silo Baghouse	0.32	0.32	1.40	1.40
Sander Cyclone Baghouse	6.17	6.17	27.02	27.02
Sawline Baghouse	0.89	0.89	3.90	3.90
Dry Fuel Baghouse	0.86	0.86	3.77	3.77

Replaces Pages:
 September 19, 1993

Date:

Page:

3. Plum Creek shall not cause or authorize emissions to be discharged into the atmosphere from any access roads, parking lots, and log decks of the general plant property any visible fugitive emissions that exhibit opacity¹ of five percent (5%) or greater averaged over six (6) consecutive minutes.
4. Plum Creek shall treat all unpaved portions of the haul roads, access roads, parking lots, and the general plant area with chemical dust suppressant as necessary to maintain compliance with the 5% opacity¹ limitation.
5. Plum Creek shall treat all log decks with water as necessary to maintain compliance with the 5% opacity¹ limitation.
6. Plum Creek shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any source an opacity¹ of twenty percent (20%) or greater averaged over six (6) consecutive minutes.
7. Plum Creek shall operate the following control measures:

a.	Hog Fuel Boiler	ESP
b.	Two Veneer Dryers	ESP
c.	Sawmill Log Debarking	Water Sprays
d.	Plywood Log Debarking	Water Sprays
e.	Sawmill Chip Bin	Cyclone
f.	Planer Shavings Bin	Baghouse
g.	Plywood Fines	Cyclone
h.	Sanderdust Silo	Baghouse
i.	Sander Cyclone	Baghouse
j.	Sawline	Baghouse
k.	Dry Fuel	Baghouse
l.	Planer Shavings Truck	Partial Enclosure
	Loadout	
8. Plum Creek shall not debark more than 734,400 tons of logs per year.

B. Testing

1. Plum Creek shall test the Sander Cyclone Baghouse and demonstrate compliance with the PM-10 emission limitation contained in Section II.A.2 by November 30, 1994.

¹ Opacity shall be determined according to 40 CFR, Part 60, Appendix A, Method 9 Visual Determination of Opacity of Emissions from Stationary Sources.

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control

2. Plum Creek shall test the Planer Shavings Bin Cyclone Baghouse and demonstrate compliance with the PM-10 emission limitation contained in Section II.A.2 by November 30, 1994.
3. Plum Creek shall test the Plywood Veneer Dryer emissions and demonstrate compliance with the PM-10 emission limitation contained in Section 11.A.2 by 1995.
4. Plum Creek shall perform an analysis on the hog fuel, fines, planer shavings, and chips in accordance with the silt analysis procedures found in AP-42 Appendix C, D, and E. This analysis shall be completed and submitted to the department by March 1, 1994.
5. Testing required in Section II.B.1 and II.B.2 shall be conducted in accordance with 40 CFR Part 51 and the Montana Source Testing Protocol.
6. Testing required in Section II.B.3 shall be conducted in accordance with 40 CFR Part 51, Appendix M including back-half, for PM-10 or 40 CFR Part 60, Appendix A including back-half, for total particulate used as a surrogate for PM-10. The test methods shall also conform to the Montana Compliance Source Testing Protocol. The dryer load shall be at 90% capacity during the test time.

C. Permitting

1. Plum Creek shall obtain a permit from the Department of Health and Environmental Sciences limiting the emissions from the Log Yard Residue Reclaim System to 3.19 tons/year of PM-10 and 26 lbs/day of PM-10 before operating the system.
2. Plum Creek shall obtain a permit to construct and operate the new Sander Baghouse and begin operation of the new Sander Baghouse prior to November 30, 1994.
3. Plum Creek shall submit a request to the department by April 1, 1994 asking the department to modify the air quality permit issued by the department to Plum Creek to include the limitations and conditions contained in this stipulation.

Analysis of Conditions

Plum Creek - Evergreen

I. Purpose of the stipulation

As a result of the designation of the City of Kalispell and the nearby Evergreen area as nonattainment, EPA required the Department of Health and Environmental Sciences and the Flathead City-County Health Department to submit the Kalispell PM-10 State Implementation Plan (SIP) to EPA in November, 1991. The SIP consisted of an emission control plan that controlled fugitive dust emissions from roads, parking lots, construction, and demolition. Technical studies determined those sources were the major contributors of PM-10 emissions.

Receptor modeling (a model which identifies contributors based on actual area and industrial emissions and ambient data) was originally used to demonstrate attainment of the federal PM-10 standards in the SIP. The EPA subsequently required the department to use a dispersion model (a model which incorporates allowable emission rates from facilities) to assure that attainment can still be demonstrated if individual sources are operating at their maximum allowable emission rates.

In order to demonstrate compliance (through dispersion modeling) with the PM-10 NAAQS in the Kalispell nonattainment area, it is necessary to reduce or establish new emission limitations for Plum Creek. Dispersion modeling using the new emission limitations in this document, in conjunction with limitations on other Kalispell area facilities, demonstrates attainment of the NAAQS for PM-10. These reductions and changes in allowable emissions will be enforced through a signed stipulation.

II. Emission Inventory

Source	TSP	PM-10	NOX *	VOC	CO	SOX
Hog Fuel Boiler	70.52	70.52	112.18	56.09	160.26	6.01
Two Veneer Dryers	143.66	105.56		12.79		
Sawmill Log Debarking	1.57	0.87				
Plywood Log Debarking	2.10	1.15				
Sawmill Block Sawing	6.30	3.46				
Plywood Block Sawing	8.39	4.62				
Sawmill Chip Bin Cyclone	11.30	5.65				
Planer Shavings Bin Cyclone	71.83	35.92				
Fines Cyclone	5.87	2.93				
Sanderdust Silo Baghouse	1.40	1.40				
Sander Cyclone B.H.	27.02	27.02				
Sawline Baghouse	3.90	3.90				
Dry Fuel B.H.	3.77	3.77				
Hog Fuel Pile & Fuel Bunker	99.85	35.95				
Plywood Chips Truck Loadout	9.54	3.39				
Sawmill/planer Chips Truck Loadout	10.67	3.79				
Fines Truck Loadout	24.19	8.71				
Planer Shavings Truck Loadout	30.00	18.00				
Roads - Fugitives - Yearly	67.39	24.26				
Total Log Yard Emissions	7.52	3.19				
Total Emissions	606.79	364.06	112.18	68.88	160.26	6.01

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

Hog Fuel Boiler

TSP Emissions

Emission Factor: 16.1 lbs/hr (Permit Limit)
Hours of operation: 8760 hour/year
Calculations: 16.1 lbs/hr * 8760 * 0.0005 tons/lb = 70.52 tons/yr

PM-10 Emissions:

Emission Factor: 16.1 lbs/hr (Permit Limit)
Hours of operation: 8760 hour/year
Calculations: 16.1 lbs/hr * 8760 * 0.0005 tons/lb = 70.52 tons/yr

NOx Emissions:

Emission Factor: 2.8 lbs/ton (AFSEF, SCC 1-02-009-02, page 24)
Control Efficiency: 0.0%
Process Rate: 80128 ton/year (Estimate)
Calculations: 80128 ton/year * 2.8 lbs/ton * 0.0005 tons/lb = 112.18 tons/yr

VOC Emissions:

Emission Factor: 1.4 lbs/ton (AFSEF, SCC 1-02-009-02, page 24)
Control Efficiency: 0.0%
Process Rate: 80128 ton/year (Estimate)
Calculations: 80128 ton/year * 1.4 lbs/ton * 0.0005 tons/lb = 56.10 tons/yr

CO Emissions:

Emission Factor: 4.0 lbs/ton (AFSEF, SCC 1-02-009-02, page 24)
Control Efficiency: 0.0%
Process Rate: 80128 ton/year (Estimate)
Calculations: 80128 ton/year * 4.0 lbs/ton * 0.0005 tons/lb = 160.26 tons/yr

SOx Emissions:

Emission Factor: 0.15 lbs/ton (AFSEF, SCC 1-02-009-02, page 24)
Control Efficiency: 0.0%
Process Rate: 80128 ton/year (Estimate)
Calculations: 80128 ton/year * 0.15 lbs/ton * 0.0005 tons/lb = 6.01 tons/yr

Two Veneer Dryers

TSP Emissions

Emission Factor: 32.8 lbs/hr (Permit Limit)
Hours of operation: 8760 hour/year
Calculations: 32.8 lbs/hr * 8760 * 0.0005 tons/lb = 143.66 tons/yr

PM-10 Emissions:

Emission Factor: 24.1 lbs/hr (Stipulation limit)
Hours of operation: 8760 hour/year
Calculations: 24.1 lbs/hr * 8760 * 0.0005 tons/lb = 105.56 tons/yr

VOC Emissions:

Emission Factor: 1.3 lbs/10000 sq ft veneer (AFSEF, SCC 3-07-007-13, page 143)
Control Efficiency: 0.0%
Process Rate: 196720000 ton/year (Estimate)
Calculations: 196720000 * ton/yr * 1.3 lbs/10000 sq ft veneer * 0.0005 tons/lb = 12.77 tons/yr

Sawmill Log Debarking

Lumber Production: 314,800 tons/yr (Based on Maximum Production Rate)

Volume II
Chapter 15

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

TSP Emissions:

Emission Factor: 0.02 lbs/ton (AFSEF, SCC 3-07-008-01, p. 143)
Control Efficiency: 50% (Water Sprays)
Calculations: 314800 tons/yr * 0.02 lbs/ton * (1- 0.50) * 0.0005 tons/lb = 1.57 tons/yr

PM-10 Emissions:

Emission Factor: 0.011 lbs/ton (AFSEF, SCC 3-07-008-01, p. 143)
Control Efficiency: 50% (Water Sprays)
Calculations: 314800 tons/yr * 0.01 lbs/ton * (1- 0.50) * 0.0005 tons/lb = 0.87 tons/yr

Plywood Log Debarking

Lumber Production: 419,600 tons/yr (Based on Maximum Production Rate)

TSP Emissions:

Emission Factor: 0.02 lbs/ton (AFSEF, SCC 3-07-008-01, p. 143)
Control Efficiency: 50% (Water Sprays)
Calculations: 419600 tons/yr * 0.02 lbs/ton * (1- 0.50) * 0.0005 tons/lb = 2.10 tons/yr

PM-10 Emissions:

Emission Factor: 0.011 lbs/ton (AFSEF, SCC 3-07-008-01, p. 143)
Control Efficiency: 50% (Water Sprays)
Calculations: 419600 tons/yr * 0.01 lbs/ton * (1- 0.50) * 0.0005 tons/lb = 1.15 tons/yr

Sawmill Block Sawing

Lumber Production: 314,800 tons/yr (Based on Maximum Production Rate)

TSP Emissions

Emission Factor: 0.04 lbs/ton (Based on knowledge of the process)
Control Efficiency: 0%
Calculations: 314800 tons/yr * 0.04 lbs/ton * 0.0005 tons/lb = 6.30 tons/yr

PM-10 Emissions:

Emission Factor: 0.022 lbs/ton (Based on knowledge of the process)
Control Efficiency: 0%
Calculations: 314800 tons/yr * 0.022 lbs/ton * 0.0005 tons/lb = 3.46 tons/yr

Plywood Block Sawing

Lumber Production: 419,600 tons/yr (Based on Maximum Production Rate)

TSP Emissions

Emission Factor: 0.04 lbs/ton (Based on knowledge of the process)
Control Efficiency: 0%
Calculations: 419600 tons/yr * 0.04 lbs/ton * 0.0005 tons/lb = 8.39 tons/yr

PM-10 Emissions:

Emission Factor: 0.022 lbs/ton (Based on knowledge of the process)
Control Efficiency: 0%
Calculations: 419600 tons/yr * 0.022 lbs/ton * 0.0005 tons/lb = 4.62 tons/yr

Sawmill Chip Bin Cyclone

Hours of operation: 8760 hrs/yr

TSP Emissions

Emission Factor: 2.58 lbs/hr (based on ratio in AIRS)
Calculations: 8760 hrs/yr * 2.58 lbs/hr * 0.0005 tons/lb = 11.30 tons/yr
2.58 lbs/hr * 8760/92600 MBF/year = 0.24 lbs/MBF

Replaces Pages:
September 19, 1993

Dated:

Page 224 of 235

Chapter 15

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

PM-10 Emissions:

Emission Factor: 1.29 lbs/hr (based on information from company)
Calculations: $8760 \text{ hrs/yr} * 1.29 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 5.65 \text{ tons/yr}$
 $1.29 \text{ lbs/hr} * 8760/92600 \text{ MBF/year} = 0.12 \text{ lbs/MBF}$

Planer Shavings Bin Cyclone

Hours of operation: 8760 hrs/yr

TSP Emissions:

Emission Factor: 16.40 lbs/hr (Based on AP-42 and flowrate)
Calculations: $8760 \text{ hrs/yr} * 16.40 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 71.83 \text{ tons/yr}$
 $16.40 \text{ lbs/hr} * 8760/123400 \text{ MBF/year} = 1.16 \text{ lbs/MBF}$

PM-10 Emissions:

Emission Factor: 8.20 lbs/hr (Based on AP-42 and flowrate)
Calculations: $8760 \text{ hrs/yr} * 8.20 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 35.92 \text{ tons/yr}$
 $8.20 \text{ lbs/hr} * 8760/123400 \text{ MBF/year} = 0.58 \text{ lbs/MBF}$

Fines Cyclone

Hours of operation: 8760 hrs/yr

TSP Emissions:

Emission Factor: 1.34 lbs/hr (based on ratio in AIRS)
Calculations: $8760 \text{ hrs/yr} * 1.34 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 5.87 \text{ tons/yr}$
 $1.34 \text{ lbs/hr} * 8760/200 \times 10^6 \text{ ft}^2/\text{year} = 0.00006 \text{ lbs}/10^6 \text{ ft}^2$

PM-10 Emissions:

Emission Factor: 0.67 lbs/hr (based on information from company)
Calculations: $8760 \text{ hrs/yr} * 0.67 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 2.93 \text{ tons/yr}$
 $0.67 \text{ lbs/hr} * 8760/200 \times 10^6 \text{ ft}^2/\text{year} = 0.00003 \text{ lbs}/10^6 \text{ ft}^2$

Sanderdust Silo Baghouse

Hours of operation: 8760 hrs/yr

TSP Emissions:

Emission Factor: 0.32 lbs/hr (based on information from company)
Calculations: $8760 \text{ hrs/yr} * 0.32 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 1.40 \text{ tons/yr}$
 $0.32 \text{ lbs/hr} * 8760/200 \times 10^6 \text{ ft}^2/\text{year} = 0.00001 \text{ lbs}/10^6 \text{ ft}^2$

PM-10 Emissions:

Emission Factor: 0.32 lbs/hr (based on information from company)
Calculations: $8760 \text{ hrs/yr} * 0.32 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 1.40 \text{ tons/yr}$
 $0.32 \text{ lbs/hr} * 8760/200 \times 10^6 \text{ ft}^2/\text{year} = 0.00001 \text{ lbs}/10^6 \text{ ft}^2$

Sander Cyclone B.H.

Hours of operation: 8760 hrs/yr

TSP Emissions:

Emission Factor: 6.17 lbs/hr (based on information from company)
Calculations: $8760 \text{ hrs/yr} * 6.17 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 27.02 \text{ tons/yr}$
 $6.17 \text{ lbs/hr} * 8760/200 \times 10^6 \text{ ft}^2/\text{year} = 0.00027 \text{ lbs}/10^6 \text{ ft}^2$

PM-10 Emissions:

Emission Factor: 6.17 lbs/hr (based on information from company)
Calculations: $8760 \text{ hrs/yr} * 6.17 \text{ lbs/hr} * 0.0005 \text{ tons/lb} = 27.02 \text{ tons/yr}$
 $6.17 \text{ lbs/hr} * 8760/200 \times 10^6 \text{ ft}^2/\text{year} = 0.00027 \text{ lbs}/10^6 \text{ ft}^2$

Replaces Pages:
September 19, 1993

Dated:

Page: 225 of 235

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

Sawline Baghouse

Hours of operation: 8760 hrs/yr

TSP Emissions:

Emission Factor: 0.89 lbs/hr (based on information from company)
Calculations: 8760 hrs/yr * 0.89 lbs/hr * 0.0005 tons/lb = 3.90 tons/yr
0.89 lbs/hr * 8760/200x10⁶ ft²/year = 0.00004 lbs/10⁶ ft²

PM-10 Emissions:

Emission Factor: 0.89 lbs/hr (based on information from company)
Calculations: 8760 hrs/yr * 0.89 lbs/hr * 0.0005 tons/lb = 3.90 tons/yr
0.89 lbs/hr * 8760/200x10⁶ ft²/year = 0.00004 lbs/10⁶ ft²

Dry Fuel B.H.

Hours of operation: 8760 hrs/yr

TSP Emissions

Emission Factor: 0.86 lbs/hr (based on information from company)
Calculations: 8760 hrs/yr * 0.86 lbs/hr * 0.0005 tons/lb = 3.77 tons/yr
0.86 lbs/hr * 8760/200x10⁶ ft²/year = 0.00004 lbs/10⁶ ft²

PM-10 Emissions:

Emission Factor: 0.86 lbs/hr (based on information from company)
Calculations: 8760 hrs/yr * 0.86 lbs/hr * 0.0005 tons/lb = 3.77 tons/yr
0.86 lbs/hr * 8760/200x10⁶ ft²/year = 0.00004 lbs/10⁶ ft²

Hog Fuel Pile & Fuel Bunker

TSP Emissions:

Emission Factor: 1.00 lbs/ton (AFSEF, SCC 3-07-008-03, page 143)
Control Efficiency: 0.0X
Process Rate: 199700 ton/year (Maximum production rate)
Calculations: 199700 ton/year * 1.00 lbs/ton * 0.0005 tons/lb = 99.85 tons/yr

PM-10 Emissions:

Emission Factor: 0.36 lbs/ton (AFSEF, SCC 3-07-008-03, page 143)
Control Efficiency: 0.0X
Process Rate: 199700 ton/year (Maximum production rate)
Calculations: 199700 ton/year * 0.36 lbs/ton * 0.0005 tons/lb = 35.95 tons/yr

Plywood Chips Truck Loadout

Process Rate: 106,000 tons/year

TSP Emissions:

Emission Factor: 0.18 lbs/ton (Estimate based on knowledge of process & size of material)
Calculations: 106000 tons/year * 0.18 lbs/ton * 0.0005 tons/lb = 9.54 tons/yr

PM-10 Emissions:

Emission Factor: 0.064 lbs/ton (Estimate based on knowledge of process & size of material)
Calculations: 106000 tons/year * 0.064 lbs/ton * 0.0005 tons/lb = 3.39 tons/yr

Sawmill/planer Chips Truck Loadout

Process Rate: 118,500 tons/year

TSP Emissions:

Emission Factor: 0.18 lbs/ton (Estimate based on knowledge of process & size of material)
Calculations: 118500 tons/year * 0.18 lbs/ton * 0.0005 tons/lb = 10.67 tons/yr

Chapter 15

STATE OF MONTANA
AIR QUALITY CONTROL

Subject: Flathead County
Air Quality Control

PM-10 Emissions:

Emission Factor: 0.064 lbs/ton (Estimate based on knowledge of process & size of material)
Calculations: 118500 tons/year * 0.064 lbs/ton * 0.0005 tons/lb = 3.79 tons/yr

Fines Truck Loadout

Process Rate: 48,370 tons/year

TSP Emissions:

Emission Factor: 1.00 lbs/ton (3-07-008-03, AFSSCC page 143)
Calculations: 48370 tons/year * 1.00 lbs/ton * 0.0005 tons/lb = 24.19 tons/yr

PM-10 Emissions:

Emission Factor: 0.36 lbs/ton (3-07-008-03, AFSSCC page 143)
Calculations: 48370 tons/year * 0.36 lbs/ton * 0.0005 tons/lb = 8.71 tons/yr

Planner Shavings Truck Loadout

Production Rate: 30000 tons/year

TSP Emissions:

Emission Factor: 2.00 lbs/ton (3-07-030-02, AFSSCC page 144)
Calculations: 30000 tons/year * 2.00 lbs/ton * 0.0005 tons/lb = 30.00 tons/yr

PM-10 Emissions:

Emission Factor: 1.20 lbs/ton (3-07-030-02, AFSSCC page 144)
Calculations: 30000 tons/year * 1.20 lbs/ton * 0.0005 tons/lb = 18.00 tons/yr

Roads - Fugitive - Yearly

Precipitation ratio based on 130 days with more than .01" of precipitation.

Control Efficiency of 85% for chemical dust suppressant is applied to all unpaved road emissions. Control of 50% for water application used for log yards.

Unpaved road emission factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3)^{0.7} * (w/4)^{0.5} * PR$$

Where:

E = emission factor in lbs/vehicle mile traveled (VMT)
k = particle sizing constant (1.0/TSP, 0.36/PM-10)
s = assumed to be 10 % silt
S = average speed of vehicles in mph
W = average weight of vehicles in tons
w = average number of wheels on vehicles
PR = $(365 - 130)/365 = 0.6438$

$$\begin{aligned} \text{Tons Per Year (PM-10):} &= (\text{VMT}) (\text{lbs/VMT}) (\text{EF}) (\text{CE}) \\ &= 18900(3.95)(1-.85)/2000 \\ &= 5.60 \text{ tons per year of PM-10} \end{aligned}$$

Replaces Pages:
September 19, 1993

Dated:

Page: 227 of 235

STATE OF MONTANA
 AIR QUALITY CONTROL
 IMPLEMENTATION PLAN

Subject: Flathead County
 Air Quality Control
 Program

Haul and Access Roads (85% Control):

Source	S (mph)	W (tons)	W (#)	TSP (lbs/VMT)	PM-10 (lbs/VMT)	VMT (annual)	TSP (TPY)	PM-10 (TPY)
Log Trucks Loaded	8.0	40	18	10.98	3.95	18900	15.56	5.60
Log Trucks Empty	8.0	14	18	5.25	1.90	16240	6.41	2.31
Chip Trucks Loaded	8.0	53	18	13.37	4.81	3402	3.41	1.23
Chip Trucks Empty	8.0	18	18	6.28	2.26	3402	1.60	0.58
Shavings Trucks Loaded	8.0	32	18	9.39	3.38	935.2	0.66	0.24
Shavings Trucks Empty	8.0	18	18	6.28	2.26	935.2	0.44	0.16
Sawdust Trucks Loaded	8.0	38	18	10.59	3.81	751.8	0.60	0.21
Sawdust Trucks Empty	8.0	20	18	6.76	2.43	751.8	0.38	0.14
Fuel Trucks Loaded	8.0	52	18	13.19	4.75	441	0.44	0.16
Fuel Trucks Empty	8.0	20	18	6.76	2.43	392	0.20	0.07
Dump Trucks Loaded	15.0	21	10	9.77	3.52	6412	4.70	1.69
Dump Trucks Empty	15.0	12	10	6.40	2.38	6412	3.18	1.14
Water Trucks Loaded	15.0	24	10	10.73	3.86	1568	1.26	0.45
Water Trucks Empty	15.0	11	10	6.21	2.24	7336	3.42	1.23
Wagners L90 & L100 Loaded	5.0	128	4	7.30	2.63	16204	8.87	3.19
Wagners L90 & L100 Empty	5.0	80	4	5.25	1.89	16204	6.38	2.30
Cat 966 Loaded	5.0	26	4	2.39	0.86	5040	0.90	0.33
Cat 966 Empty	5.0	20	4	1.99	0.72	14980	2.24	0.81
Employee Vehicles	20.0	3	4	2.11	0.76	6902	1.09	0.39
Subtotal:							61.74	22.23

Log Yard (50% Control):

Source	S (mph)	W (tons)	W (#)	TSP (lbs/VMT)	PM-10 (lbs/VMT)	VMT (annual)	TSP (TPY)	PM-10 (TPY)
Wagners L90 & L100 Loaded	5.0	128	4	7.30	2.63	1800	3.29	1.18
Wagners L90 & L100 Empty	5.0	80	4	5.25	1.89	1800	2.36	0.85
Subtotal:							5.65	2.03

Total Emissions of Haul/Access Roads and Log Decks: 67.39 24.26

Replaces Pages:
 September 19, 1993

Dated:

Page: 228 of 235

Volume II
Chapter 15

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

Clarke Log Yard Residue Reclaim System

Annual Emission Rates (Allowable) *

Source	TSP	PM-10	Tons/Year			
			NOX	VOC	CO	SOX
Front End Loader Dump to Reclaimer	1.06	0.13				
Reclaimer Material Transfer and Conveying	0.77	0.17				
Primary Classifier	0.77	0.17				
2-5" Material Conveyor Discharge to RMS	0.15	0.03				
Trommel Screen	2.07	1.56				
< 1/4" Fines Stacker Discharge	0.86	0.40				
1/4" to 2" Material Drop to RMS	0.15	0.03				
RMS #1 Discharge	0.15	0.03				
RMS #2 Discharge	0.15	0.03				
1/4" to 5" Fuel Conveyor Discharge	1.03	0.48				
1/4" to 5" Rock Conveyor Discharge	0.34	0.16				
Total Log Yard Emissions	7.52	3.19	0.00	0.00	0.00	0.00

* Based on operating 2940 hours/year.

Daily Emission Rates (Allowable) **

Source	TSP	PM-10	lbs/day			
			NOX	VOC	CO	SOX
Front End Loader Dump to Reclaimer	8.64	1.04				
Reclaimer Material Transfer and Conveying	6.26	1.38				
Primary Classifier	6.26	1.38				
2-5" Material Conveyor Discharge to RMS	1.25	0.28				
Trommel Screen	16.93	12.70				
< 1/4" Fines Stacker Discharge	7.02	3.24				
1/4" to 2" Material Drop to RMS	1.25	0.28				
RMS #1 Discharge	1.25	0.28				
RMS #2 Discharge	1.25	0.28				
1/4" to 5" Fuel Conveyor Discharge	8.42	3.89				
1/4" to 5" Rock Conveyor Discharge	2.81	1.30				
Total Emissions	61.37	26.03	0.00	0.00	0.00	0.00

** Based on operating 12 hours/day.

Front End Loader Dump to Reclaimer

Process Rate: 60 cu.yds/hr
% of Total throughput: 100%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.02 lbs/ton (AFSEF 3-05-025-06, page 129)
Control Efficiency: 0%
Calculations: 0.0200 lbs/ton * 0.60 ton/cu.yd * 60.00 cu.yds/hr * 0.0005 tons/lb = 0.7200 lbs/hr
0.7200 lbs/hr * 2940 hr/yr * 0.0005 tons/lb = 1.06 tons/yr
1.06 tons/yr * (1.00 - 0.000) = 1.06 tons/yr
0.72 lbs/hr * 12 hrs/day * (1.00 - 0.00) = 8.64 lbs/day

PM-10 Emissions:

Emission Factor: 0.0024 lbs/ton (AFSEF 3-05-025-06, page 129)
Control Efficiency: 0%
Calculations: 0.0024 lbs/ton * 0.60 ton/cu.yd * 60.00 cu.yds/hr * 0.0005 tons/lb = 0.0864 lbs/hr
0.09 lbs/hr * 2940 hr/yr * 0.0005 tons/lb = 0.13 tons/yr
0.13 tons/yr * (1.00 - 0.000) = 0.13 tons/yr
0.09 lbs/hr * 12 hrs/day * (1.00 - 0.00) = 1.04 lbs/day

Replaces Pages
September 19, 1993

Dated:

Page: 229 of 235

Reclaimer Material Transfer and Conveying

Process Rate: 60 cu.yds/hr
% of Total throughput: 100%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0290 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 1.0440 \text{ lbs/hr}$
 $1.0440 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 1.53 \text{ tons/yr}$
 $1.53 \text{ tons/yr} * (1.00 - 0.500) = 0.77 \text{ tons/yr}$
 $1.04 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 6.26 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0064 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.23 \text{ lbs/hr}$
 $0.23 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.34 \text{ tons/yr}$
 $0.34 \text{ tons/yr} * (1.00 - 0.500) = 0.17 \text{ tons/yr}$
 $0.23 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.38 \text{ lbs/day}$

Primary Classifier

Process Rate: 60 cu.yds/hr
% of Total throughput: 100%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0290 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 1.0440 \text{ lbs/hr}$
 $1.0440 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 1.53 \text{ tons/yr}$
 $1.53 \text{ tons/yr} * (1.00 - 0.500) = 0.77 \text{ tons/yr}$
 $1.04 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 6.26 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0064 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.23 \text{ lbs/hr}$
 $0.23 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.34 \text{ tons/yr}$
 $0.34 \text{ tons/yr} * (1.00 - 0.500) = 0.17 \text{ tons/yr}$
 $0.23 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.38 \text{ lbs/day}$

2-5" Material Conveyor Discharge to RMS

Process Rate: 60 cu.yds/hr
% of Total throughput: 20%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0290 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.2088 \text{ lbs/hr}$
 $0.2088 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.31 \text{ tons/yr}$
 $0.31 \text{ tons/yr} * (1.00 - 0.500) = 0.15 \text{ tons/yr}$
 $0.21 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.25 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0064 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.05 \text{ lbs/hr}$
 $0.05 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.07 \text{ tons/yr}$
 $0.07 \text{ tons/yr} * (1.00 - 0.500) = 0.03 \text{ tons/yr}$
 $0.05 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 0.28 \text{ lbs/day}$

Trommel Screen

Process Rate: 60 cu.yds/hr
% of Total throughput: 70%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.16 lbs/ton (AP-42, 8.19.1-1)
Control Efficiency: 65% (Fixed Cover and Wet Material)
Calculations: $0.16 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 4.0320 \text{ lbs/hr}$
 $4.0320 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 5.93 \text{ tons/yr}$
 $5.93 \text{ tons/yr} * (1.00 - 0.650) = 2.07 \text{ tons/yr}$
 $4.03 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.65) = 16.93 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.12 lbs/ton (AP-42, 8.19.1-1)
Control Efficiency: 65% (Fixed Cover and Wet Material)
Calculations: $0.1200 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 3.02 \text{ lbs/hr}$
 $3.02 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 4.45 \text{ tons/yr}$
 $4.45 \text{ tons/yr} * (1.00 - 0.650) = 1.56 \text{ tons/yr}$
 $3.02 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.65) = 12.70 \text{ lbs/day}$

< 1/4" Fines Stack Discharge

Process Rate: 60 cu.yds/hr
% of Total throughput: 50%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.13 lbs/ton (AFSEF 3-05-025-05, page 129)
Control Efficiency: 75% (Dust Sock and Wet Material)
Calculations: $0.13 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 2.3400 \text{ lbs/hr}$
 $2.3400 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 3.44 \text{ tons/yr}$
 $3.44 \text{ tons/yr} * (1.00 - 0.750) = 0.86 \text{ tons/yr}$
 $2.34 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.75) = 7.02 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.06 lbs/ton (AFSEF 3-05-025-05, page 129)
Control Efficiency: 75% (Dust Sock and Wet Material)
Calculations: $0.0600 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 1.08 \text{ lbs/hr}$
 $1.08 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 1.59 \text{ tons/yr}$
 $1.59 \text{ tons/yr} * (1.00 - 0.750) = 0.40 \text{ tons/yr}$
 $1.08 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.75) = 3.24 \text{ lbs/day}$

1/4" to 2" Material Drop to RMS

Process Rate: 60 cu.yds/hr
% of Total throughput: 20%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.03 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.2088 \text{ lbs/hr}$
 $0.2088 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.31 \text{ tons/yr}$
 $0.31 \text{ tons/yr} * (1.00 - 0.500) = 0.15 \text{ tons/yr}$
 $0.21 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.25 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0064 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.05 \text{ lbs/hr}$
 $0.05 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.07 \text{ tons/yr}$
 $0.07 \text{ tons/yr} * (1.00 - 0.500) = 0.03 \text{ tons/yr}$
 $0.05 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 0.28 \text{ lbs/day}$

RMS #1 Discharge

Process Rate: 60 cu.yds/hr
% of Total throughput: 20%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.03 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.2088 \text{ lbs/hr}$
 $0.2088 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.31 \text{ tons/yr}$
 $0.31 \text{ tons/yr} * (1.00 - 0.500) = 0.15 \text{ tons/yr}$
 $0.21 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.25 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0064 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.05 \text{ lbs/hr}$
 $0.05 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.07 \text{ tons/yr}$
 $0.07 \text{ tons/yr} * (1.00 - 0.500) = 0.03 \text{ tons/yr}$
 $0.05 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 0.28 \text{ lbs/day}$

RMS #2 Discharge

Process Rate: 60 cu.yds/hr
% of Total throughput: 20%
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.03 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.2088 \text{ lbs/hr}$
 $0.2088 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.31 \text{ tons/yr}$
 $0.31 \text{ tons/yr} * (1.00 - 0.500) = 0.15 \text{ tons/yr}$
 $0.21 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.25 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSEF 3-05-025-03, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0064 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.05 \text{ lbs/hr}$
 $0.05 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.07 \text{ tons/yr}$
 $0.07 \text{ tons/yr} * (1.00 - 0.500) = 0.03 \text{ tons/yr}$
 $0.05 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 0.28 \text{ lbs/day}$

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

1/4" to 5" Fuel Conveyor Discharge

Process Rate: 60 cu.yds/hr
% of Total throughput: 30X
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.13 lbs/ton (AFSEF 3-05-025-05, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.13 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 1.4040 \text{ lbs/hr}$
 $1.4040 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 2.06 \text{ tons/yr}$
 $2.06 \text{ tons/yr} * (1.00 - 0.500) = 1.03 \text{ tons/yr}$
 $1.40 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 8.42 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.06 lbs/ton (AFSEF 3-05-025-05, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0600 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.65 \text{ lbs/hr}$
 $0.65 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.95 \text{ tons/yr}$
 $0.95 \text{ tons/yr} * (1.00 - 0.500) = 0.48 \text{ tons/yr}$
 $0.65 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 3.89 \text{ lbs/day}$

1/4" to 5" Rock Conveyor Discharge

Process Rate: 60 cu.yds/hr
% of Total throughput: 10X
Material Density: 0.6 ton/cu.yd
Hours of operation: 2940 hr/yr 12 hrs/day

TSP Emissions:

Emission Factor: 0.13 lbs/ton (AFSEF 3-05-025-05, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.13 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.4680 \text{ lbs/hr}$
 $0.4680 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.69 \text{ tons/yr}$
 $0.69 \text{ tons/yr} * (1.00 - 0.500) = 0.34 \text{ tons/yr}$
 $0.47 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 2.81 \text{ lbs/day}$

PM-10 Emissions:

Emission Factor: 0.06 lbs/ton (AFSEF 3-05-025-05, page 129)
Control Efficiency: 50% (Water Sprays or Naturally Wet Material)
Calculations: $0.0600 \text{ lbs/ton} * 0.60 \text{ ton/cu.yd} * 60.00 \text{ cu.yds/hr} * 0.0005 \text{ tons/lb} = 0.22 \text{ lbs/hr}$
 $0.22 \text{ lbs/hr} * 2940 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.32 \text{ tons/yr}$
 $0.32 \text{ tons/yr} * (1.00 - 0.500) = 0.16 \text{ tons/yr}$
 $0.22 \text{ lbs/hr} * 12 \text{ hrs/day} * (1.00 - 0.50) = 1.32 \text{ lbs/day}$

III. Environmental Assessment

An environmental assessment, required by the Montana Environmental Protection Act, was completed for this project. A copy is attached.

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Air Quality Bureau
Cogswell Building, Helena, Montana 59620
(406) 444-3454

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Plum Creek Manufacturing, LP - Evergreen Facility, Air Quality Stipulation for Kalispell SIP.

Description of Project: In order to demonstrate compliance (through dispersion modeling) with the PM-10 NAAQS in the Kalispell nonattainment area, it is necessary to reduce or establish new emission limitations for Plum Creek.

Benefits and Purpose of Proposal: This stipulation identifies the emission sources and makes enforceable emission limitations which, when considered with limitations on other Kalispell area sources, will achieve the PM-10 NAAQS.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider: No reasonable alternative exist.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: A listing of enforceable conditions are contained in the signed stipulation and in permit #2602-01 (or subsequent permits).

Recommendation: An EIS is not required.

If an EIS is needed, and if appropriate, explain the reasons for preparing the EA:

If an EIS is not required, explain why the EA is an appropriate level of analysis: The emissions from the plant will not change. this action establishes enforceable emission limitations.

Other groups or agencies contacted or which may have overlapping jurisdiction: None.

Individuals or groups contributing to this EA: Department of Health and Environmental Sciences, Air Quality Bureau.

EA prepared by: Catherine Quiñones

Date: August 4, 1993

Potential Impact on Physical Environment

		Major	Moderate	Minor	None	Unknown	Comments Attached
1	Terrestrial and Aquatic Life and Habitats				X		
2	Water Quality, Quantity and Distribution				X		
3	Geology and Soil Quality, Stability and Moisture				X		
4	Vegetation Cover, Quantity and Quality				X		
5	Aesthetics				X		
6	Air Quality			X			
7	Unique Endangered, Fragile or Limited Environmental Resource					X	
8	Demands on Environmental Resource of Water, Air and Energy			X			
9	Historical and Archaeological Sites					X	
10	Cumulative and Secondary Impacts			X			

Potential Impact on Human Environment

		Major	Moderate	Minor	None	Unknown	Comments Attached
1	Social Structures and Mores				X		
2	Cultural Uniqueness and Diversity				X		
3	Local and State Tax Base and Tax Revenue				X		
4	Agricultural or Industrial Production				X		
5	Human Health			X			
6	Access to and Quality of Recreational and Wilderness Activities				X		
7	Quantity and Distribution of Employment				X		
8	Distribution of Population				X		
9	Demands for Government Services			X			
10	Industrial and Commercial Activity			X			
11	Locally Adopted Environmental Plans and Goals			X			
12	Cumulative and Secondary Impacts			X			

