ORIGINAL

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

In the Matter of Compliance of Pack Concrete, Inc., Kalispell, Montana, with 40 CFR 50.6, National Ambient Air Quality Standard for Particulate Matter and ARM 16.8.821, Montana Ambient Air Quality Standard for PM-10	STIPULATION

The Department of Health and Environmental Sciences ("Department"), and Pack Concrete, Inc. ("Pack Concrete"), hereby stipulate and agree to all the following Paragraphs 1-18 inclusive, including the exhibits as referenced below, in regard to the above-captioned matter and present the same for consideration and adoption by the Board of Health and Environmental Sciences ("Board"):

A. BACKGROUND:

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

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

2. Section 110 of the Act requires each state to submit an implementation plan for the control of each air pollutant for which a national ambient air quality standard has been promulgated. Since a standard has been promulgated for particulate matter, the State of Montana is required to submit an implementation plan for particulate matter to EPA..

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

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

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

tion plan no later than one year from enactment of November 15, 1990 amendments to the Act. 42 U.S.C. 7513a(a)(2). The area encompassed in the moderate nonattainment designation (hereafter "Kalispell nonattainment area") generally includes the City of Kalispell and that portion of Flathead County within the vicinity of the boundaries of the City of Kalispell. A map of the Kalispell nonattainment area is attached to the Stipulation as Exhibit A and by this reference is incorporated herein in its entirety as part of this document. Pack Concrete is located outside of the Kalispell non-attainment area boundary.

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

7. On November 25, 1991, Governor Stephens submitted to EPA an implementation plan for Kalispell, Montana, demonstrating attainment of the particulate matter NAAQS. The implementation plan relied upon the receptor modeling technique known as chemical mass balance (CMB) to identify the major emission sources contributing to noncompliance. The implementation plan consisted of an emission control plan that controlled fugitive dusts emissions from roads, parking lots, construction and demolition projects, and barren ground.

8. On April 29, 1992, EPA notified Governor Stephens that the Kalispell implementation plan could be conditionally approved if certain deficiencies were corrected. A deficiency identified by EPA was that the emission limitations set for industrial sources (or in some cases for industrial sources where there was no emission limitation set at all) could result in significant emission increases above the emission levels occurring during the source apportionment modeling study (CMB). Furthermore, such potential emissions increases were not accounted for in the particulate matter NAAQS demonstration of attainment.

9. On June 15, 1992, Governor Stephens submitted a letter to EPA committing to additional analysis utilizing dispersion modeling technique on the Kalispell area industrial sources. If the dispersion modeling indicated that a source significantly impacted the nonattainment area, the Governor further committed to developing new emission limitations on the Kalispell area industrial sources which would demonstrate attainment of the particulate matter NAAQS.

10. The results of the earlier CMB modeling study were in part dependent upon the level of actual emissions from the various sources in the Kalispell area during the study period. However, and based upon a review of the allowable emissions for those same sources, the department is concerned that the allowable emissions do not correlate well to the actual emissions occurring during the period of CMB analysis.

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For example, in the case of Pack Concrete, some emission points are not subject to emissions limitations, and other emission points have emissions limitations that are significantly higher that the actual emissions during the CMB study.

11. Dispersion modeling analysis has been conducted by the department for the Kalispell nonattainment area. The dispersion modeling incorporates the allowable emission rates from the sources of PM-10 emissions in the Kalispell nonattainment area to determine the extent of their respective contributions to the ambient levels of PM-10. Based upon the results of this modeling, the PM-10 emissions from Pack Concrete were identified as a significant contributor to ambient levels of PM-10 in the Kalispell nonattainment area. As used in the preceding sentence, the term "significant" means that the PM-10 emissions from Pack Concrete, when modeled, were greater than 5 micrograms per cubic meter impact for at least one receptor point within the Kalispell nonattainment area, consistent with the federal Clean Air Act, implementing regulations found at 40 CFR Part 51, and pertipent EPA guidance. Both parties agree that based upon these modeling results, and notwithstanding the location of Pack Concrete outside of the Kalispell nonattainment area, revised emission limitations for Pack Concrete are necessary to demonstrate compliance with the particulate matter NAAQS. The department has performed additional modeling using revised emission rates

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for Pack Concrete and other sources in the Kalispell area to determine the level of emissions which achieves the particulate matter NAAQS. Based upon these modeling results, the department and Pack Concrete agree to the revised emission limitations for Pack Concrete, as set forth in Exhibit B.

B. BINDING EFFECT

12. The parties to this Stipulation agree that any such emission limitations placed on Pack Concrete must be enforceable by both the department and EPA. To this end, the parties have negotiated specific limitations and conditions that are to be applicable to Pack Concrete. The specific conditions which comprise these limitations are contained in Exhibit B to this Stipulation (entitled "Emission Limitations and Conditions, Pack Concrete, Inc.") which is attached hereto and by this reference is incorporated herein in its entirety as part of this document.

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

14. The Department is the state agency that is primarily responsible for the development and implementation of the

State Implementation Plan under the Federal Clean Air Act. Section 75-2-112(2)(C), MCA. Under Sections 75-2-101, et seq., the Board is required to protect public health and welfare by limiting the levels and concentrations of air pollutants within the state. Such responsibility includes the adoption of emission standards (Section 75-2-203, MCA) and the issuance of orders (Sections 75-2-111(3), 75-2-401, MCA) to effectuate compliance with national and state ambient air quality standards.

15. The parties to this Stipulation agree that upon finding the limitations and conditions contained in Exhibit B to this Stipulation to be necessary for the Kalispell non-attainment area to meet the particulate matter NAAQS and the PM-10 MAAQS, the Board has jurisdiction to require the imposition of such limitations and conditions, and may adopt the same as enforceable measures applicable to Pack Concrete.

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

17. Any obligations in this Stipulation and attached Exhibit B that are more stringent than conditions set forth in an air quality permit issued to Pack Concrete, supersede the less stringent permit conditions.

18. Accordingly, the parties to this Stipulation agree that it would be consistent with the terms and intent of this

Stipulation for the Board to issue an Order imposing the terms in this Stipulation and the limitations and conditions contained in Exhibit B of this Stipulation, and adopting the same as enforceable measures applicable to Pack Concrete.

PACK CONCRETE, INC.

BY _____
(Its) PRESIDENT

BY _____
Attorney

DATE 7/16/93

MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

BY _____
for Robert J. Robinson
Director

BY _____
Timothy R. Baker
Attorney

DATE 9/17/93

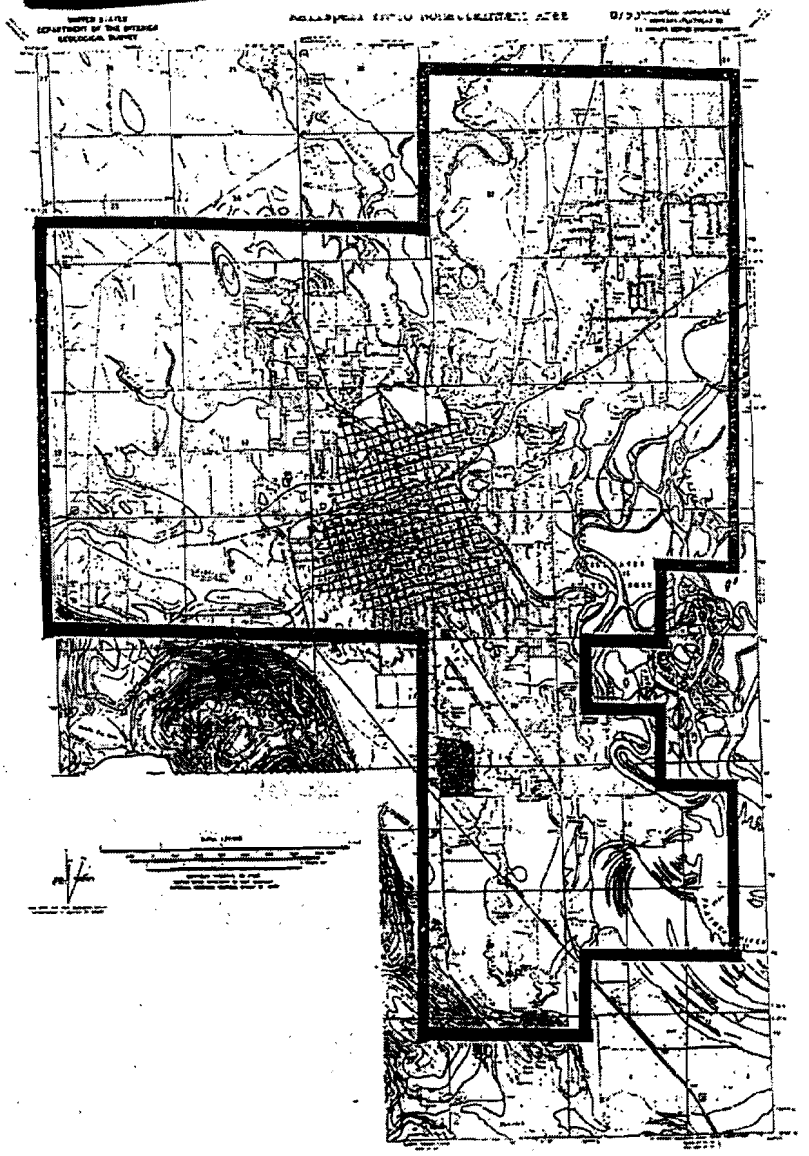

EXHIBIT B
EMISSION LIMITATIONS AND CONDITIONS

Pack Concrete, Inc.
2355 Highway 93 North
Kalispell, MT 59901

The above-named company is hereinafter referred to as "Pack Concrete"

SECTION I: Affected Facilities

A. Plant Location: Pack Concrete's batch concrete plant is located at 2355 Highway 93 North, Kalispell, Montana 59901 (SW¼, NW¼, Sec 31, T29N, R21W, Flathead County).

B. Affected Equipment

1. A Johnson Dry Batch stationary concrete batch plant (60 cu.yds/hr). Particulate emissions are to be controlled by three (3) fabric filter vents, one on each of the three cement silos and one fabric filter vent on the batch bin loading area;

2. One stationary conveyor;

3. Three (3) sand/aggregate storage bins;

4. One gravel washing plant.

SECTION II: Limitations and Conditions

A. Emission Control Requirements

1. Pack Concrete shall operate and maintain the fabric filter vents and all other emission control equipment and utilize all techniques specified in this stipulation to provide the maximum air pollution control for which they were designed.

2. Pack Concrete shall treat all unpaved portions of the haul roads and the general plant area with water, chemical dust suppressant and/or acceptable oil or asphalt products as necessary to maintain compliance with the 5% opacity[1] limitation. (RACT) The use by Pack Concrete of any dust suppressants, including any oil or asphalt products, shall be in compliance with all applicable local, state or federal environmental requirements.

3. Pack Concrete shall not operate the gravel washing plant in a dry screening mode.

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

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B. Emission Limitations

Pack Concrete shall not cause or authorize to be discharged into the atmosphere;

1. Any vent emission which exhibits greater than 20% opacity[2] averaged over six (6) consecutive minutes. (RACT)

2. Any fugitive emission from any truck loading or unloading which exhibit greater than 10% opacity[2] averaged over six (6) consecutive minutes. (RACT)

3. Any fugitive emissions from any transferring operations which exhibit greater than 10% opacity[2] averaged over six (6) consecutive minutes. (RACT)

4. Any fugitive emissions from the haul roads or plant area which exhibit greater than 5% opacity[2] averaged over six (6) consecutive minutes. (RACT)

C. Emissions Monitoring

1. Pack Concrete shall inspect and keep record of repairs for the fabric filter vents on the cement silo every six (6) months of operation and the fabric filter vent on the batch bin loading area every one (1) month of operation so as to ensure that each such collector is operating at optimum efficiency as recommended by the manufacturer.

2. The records compiled in accordance with this section shall be maintained by Peck Concrete as a permanent business record for at least five (5) years and shall be available at the plant site for inspection by the duly authorized representative of the department.

D. Operational Reporting Requirement:

Pack Concrete will provide the department with a production report by March 1 for the previous calendar year production. The report is to contain the following information:

1. Total amount of concrete produced, in cubic yards;
2. Annual total of sand, in tons;
3. Annual total of cement, in tons;
4. Annual total of aggregate, in tons;
5. Hours of operation;
6. Fugitive dust information consisting of a listing of all plant vehicles including the following for each vehicle type:

[2] Opacity shall be determined according to 40 CFR Part 60, Appendix A, Method 9 Visual Determination of Opacity of Emissions from Stationary Sources or CEMs.

a. Total number of vehicles;
b. Vehicle type;
c. Vehicle weight, loaded;
d. Vehicle weight, unloaded;
e. Number of tires on vehicle;
f. Average trip length;
g. Average number of trips annually;
h. Average vehicle speed; and
i. Area of activity.

7. Fugitive dust control for haul roads and general plant area:

a. Hours of operation of water trucks.
b. Application schedule for chemical dust suppressant if applicable.

E. The department may require additional emissions testing on sources in the plant per ARM 16.8.704 Testing Requirements.

F. Pack Concrete must maintain a copy of the air quality stipulation at the Kalispell concrete batch plant site and make that copy available for inspection by department personnel upon request.

G. Pack Concrete shall comply with all other applicable state, federal, and local laws and regulations.

Section III: General Conditions

A. Inspection - The recipient shall allow the department's representatives access to the source at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this stipulation.

B. Compliance with Statutes and Regulations - Specific listing of requirements, limitations, and conditions contained herein does not relieve the applicant from compliance with all applicable statutes and administrative regulations including amendments thereto, nor waive the right of the department to require compliance with all applicable statutes and administrative regulations, including amendments thereto.

C. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for penalties.

Analysis of Conditions
Pack Concrete

I. Introduction/Process Description

A. Affected Equipment

Pack Concrete operates a Johnson Dry Batch stationary concrete batch plant with three (3) fabric filter vents, one on each of the three cement silos and one fabric filter vent on the batch bin loading area. Pack Concrete's concrete batch plant is located at 2355 Highway 93 North, Kalispell, MT 59901 (SW¼, NW¼, Sec 31, T29N, R21W, Flathead County).

This concrete batching plant produces concrete for use in commercial and residential construction projects in the Kalispell area.

II. Applicable Rules and Regulations

A. ARM 16.8, Subchapter 8, Ambient Air Quality, including but not limited to: ARM 16.8.821 Ambient Air Quality Standards for PM-10. This section states that no person may cause or contribute to concentrations of PM-10 in the ambient air which exceed the set standards.

B. ARM 16.8, Subchapter 9, Prevention of Significant Deterioration - This facility is not a PSD source since this facility is not a listed source and the potential to emit is below 250 tons per year of any pollutant.

C. ARM 16.8, Subchapter 14, Emission Standards, including but not limited to:

1. ARM 16.8.1401 Particulate Matter, Airborne. This section requires reasonable precautions for fugitive emissions sources and Reasonably Available Control Technology (RACT) for existing fugitive sources located in a nonattainment area. The department, in consultation with EPA, has determined that the use of chemical stabilization or paving on major haul roads will satisfy these requirements.

2. ARM 16.8.1403 Particulate Matter, Industrial Process. This section states that no person shall cause, allow, or permit to be discharged into the outdoor atmosphere from any operation, process, or activity, particulate matter in excess of the amount determined by using the following equation:

Allowable Emissions = $55 (123 \text{ tons/hr})^{.11} - 40 = 53.38$ lbs/hr.

The estimated total particulate emissions from the cement silos are 0.024 lbs/hr, therefore the source is in compliance with this rule.

3. ARM 16.8.1404 Visible Air Contaminants. This section requires an opacity limitation of 20% for all stacks or vents. The requirements of this stipulation supersede this rule because they are more stringent or they are equivalent.

III. RACM/RACT Determination

Under section 189(a)(1)(C) of the amended Clean Air Act of 1990, moderate area State Implementation Plans (SIP's) must contain "reasonably available control measures" (RACM) for the control of PM-10 emissions. RACM for stationary sources is the application of reasonably available control technology (RACT). Since the Kalispell area has been designated as a nonattainment for PM-10 by EPA, RACT must be applied to those stationary sources which cause or contribute to the nonattainment area.

A RACT determination is required for:

A. Process Particulate Vent Emissions

Pack Concrete currently controls particulate vent emissions with a fabric filter having an estimated efficiency of 99.35%. High efficiency fabric filters are the highest efficiency particulate control system for a source of this type. Since Pack Concrete is currently using this option, no other options need be considered. The department has determined that the fabric filter control system will constitute RACT in this case. The department has also determined that an opacity of 10% will constitute RACT for all vent emissions with fabric filter control.

B. Material Transfer Fugitive Emissions

RACT for material transfer points for sources of this type has been determined by the department to be the use of water or chemical stabilization so as to maintain compliance with a 10% opacity limitation.

C. Fugitive Road Dust Emissions

RACT for fugitive road dust emissions for sources of this type has been determined by the department to be the use of water or chemical stabilization so as to maintain compliance with a 5% opacity limitation.

IV. Emission Inventory

Concrete Batch Plant

Annual Emission Rates (Potential)

Source	Tons/Year TSP	PM-10	NOX	VOC	CO	SOX
Cement Handling Emissions	0.11	0.05				
Batch Bin Loading of Cement/Sand/Aggregate	0.07	0.04				
Mixer Loading of Cement/Sand/Aggregate	21.55	10.77				
Transfer: Sand/Aggregate to Elevated Bins	21.55	10.77				
Haul Roads	0.15	0.06				
Total	43.43	21.69	0.00	0.00	0.00	0.00

Daily Emission Rates (Potential) *

Source	TSP	PM-10	HCF	VOC	CO	SOx
	Lbs/Day					
Cement Handling Emissions	0.56	0.29				
Batch Bin Loading of Cement/Sand/Aggregate	0.38	0.19				
Mixer Loading of Cement/Sand/Aggregate	118.08	59.04				
Transfer: Sand/Aggregate to Elevated Bins	118.08	59.04				
Haul Roads (Daily)	1.31	0.47				
Total: (lbs/day)	238.43	119.03	0.00	0.00	0.00	0.00

* Based on a 24 hour day.

Cement Handling Emissions

Process Rate: 15.5 tons/hr (Maximum Design)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.24 lbs/ton (AP-42CC 3-05-011-07, page 122)
Control Efficiency: 99.35% (Fabric Filter)
Calculations: 0.24 lbs/ton * 15.5 tons/hr = 3.72 lbs/hr
3.72 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 16.29 tons/yr
16.29 tons/yr * (1.00 - 0.9935) = 0.11 tons/yr

PM-10 Emissions:

Emission Factor: 0.12 lbs/ton (AP-42CC 3-05-011-07, page 122)
Control Efficiency: 99.35% (Fabric Filter)
Calculations: 0.12 lbs/ton * 15.5 tons/hr = 1.86 lbs/hr
1.86 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 8.15 tons/yr
8.15 tons/yr * (1.00 - 0.9935) = 0.05 tons/yr

Batch Bin Loading of Cement/Sand/Aggregate

Process Rate: 60 cu.yds/hr (Maximum Design)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.02 lbs/ton (AP-42CC 3-05-011-08, page 122)
Control Efficiency: 99.35% (Fabric Filter)
Calculations: 0.02 lbs/ton * 60 cu.yds/hr * 2.05 tons/cu.yd = 2.46 lbs/hr
2.46 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 10.77 tons/yr
10.77 tons/yr * (1.00 - 0.9935) = 0.07 tons/yr

PM-10 Emissions:

Emission Factor: 0.01 lbs/ton (AP-42CC 3-05-011-08, page 122)
Control Efficiency: 99.35% (Fabric Filter)
Calculations: 0.010 lbs/ton * 60 cu.yds/hr * 2.05 tons/cu.yd = 1.23 lbs/hr
1.23 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 5.39 tons/yr
5.39 tons/yr * (1.00 - 0.9935) = 0.04 tons/yr

Mixer Loading of Cement/Sand/Aggregate

Process Rate: 80 cu.yds/hr (Maximum Design)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.04 lbs/ton (AP-42CC 3-05-011-09, page 122)
Control Efficiency: 0%
Calculations: 0.04 lbs/ton * 60 cu.yds/hr * 2.05 tons/cu.yd = 4.92 lbs/hr
4.92 lbs/hr * 8760 hr/yr = 0.0005 tons/lb = 21.55 tons/yr
21.55 tons/yr * (1.00 - 0.000) = 21.55 tons/yr

PM-10 Emissions:

Emission Factor: 0.02 lbs/ton (AFSSCC 3-05-011-09, page 122)
Control Efficiency: 0%
Calculations: 0.02 lbs/ton * 60 cu.yds/hr * 2.05 tons/cu.yd = 2.46 lbs/hr
2.46 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 10.77 tons/yr
10.77 tons/yr * (1.00 - 0.000) = 10.77 tons/yr

Transfer: Sand/Aggregate to Elevated Bins

Process Rate: 60 cu.yds/hr (Maximum Design)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.04 lbs/ton (AFSSCC 3-05-011-06, page 122)
Control Efficiency: 0%
Calculations: 0.04 lbs/ton * 60 cu.yds/hr * 2.05 ton/cu.yd = 4.92 lbs/hr
4.92 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 21.55 tons/yr
21.55 tons/yr * (1.00 - 0.000) = 21.55 tons/yr

PM-10 Emissions:

Emission Factor: 0.02 lbs/ton (AFSSCC 3-05-011-06, page 122)
Control Efficiency: 0%
Calculations: 0.02 lbs/ton * 60 cu.yds/hr * 2.05 tons/cu.yd = 2.46 lbs/hr
2.46 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 10.77 tons/yr
10.77 tons/yr * (1.00 - 0.000) = 10.77 tons/yr

Haul Roads

Operating Hours: 8760 Hours/Yr
Vehicle Miles Traveled: 346 VMT/Yr (Estimated Based on Maximum Production Rate)
Control Efficiency is 50% for watering.

TSP 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= TSP Emission Factor in Lbs/Vehicle Mile Traveled (VMT)
k= Particle sizing constant for TSP 1.0
s= Silt Content in percent 8.7 %
S= Average Speed of vehicles in mph 5.0 mph
W= Average weight of vehicles in Tons 20.8 Tons
w= Average number of wheels on vehicles 4 Wheels
PR= Precipitation Ratio based on the following:
130 Days with more than .01" of Precipitation
PR= (365 days - 130 days)/365 Days = 0.6438

TSP Emissions:

TSP Emission Factor: 1.78 Lbs/VMT

E(TSP)= (346 VMT/Yr)(1.78 Lbs/VMT)(0.5)
E(TSP)= 308 Lbs/Yr or 0.15 Tons/Yr

PM10 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= PM10 Emission Factor in Lbs/Vehicle Mile Traveled (VMT)
k= Particle sizing constant for PM10 0.36
s= Silt Content in percent 8.7 %
S= Average Speed of vehicles in mph 5.0 mph
W= Average weight of vehicles in Tons 20.8 Tons
w= Average number of wheels on vehicles 4 Wheels
PR= Precipitation Ratio based on the following:
130 Days with more than .01" of Precipitation
PR= (365 days - 130 days)/365 Days = 0.6438

PM10 Emissions:

PM10 Emission Factor: 0.64 Lbs/VMT

E(PM10)= (346 VMT/Yr)(0.64 Lbs/VMT)(0.5)
E(PM10)= 111 Lbs/Yr or 0.06 Tons/Yr

Haul Roads (Daily)

Operating Hours: 24 hours/day
Vehicle Miles Traveled: 346 VMT/Yr (Estimated based on Maximum Production Rate)
Control Efficiency is 50% for watering.

TSP 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= TSP Emission Factor in Lbs/Vehicle Mile Traveled (VMT)	
k= Particle sizing constant for TSP	1.0
s= Silt Content in percent	8.7 %
S= Average Speed of vehicles in mph	5.0 mph
W= Average weight of vehicles in Tons	20.8 Tons
w= Average number of wheels on vehicles	4 wheels
PR= Assumes no precipitation	1.0000

TSP Emissions:

TSP Emission Factor: 2.77 Lbs/VMT

E(TSP)= (346 VMT/Yr)(2.77 Lbs/VMT)(0.5)
E(TSP)= 478 Lbs/Yr or 1.31 Lbs/day

PM10 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= PM10 Emission Factor in Lbs/Vehicle Mile Traveled (VMT)	
k= Particle sizing constant for PM10	0.36
s= Silt Content in percent	8.7 %
S= Average Speed of vehicles in mph	5.0 mph
W= Average weight of vehicles in Tons	20.8 Tons
w= Average number of wheels on vehicles	4 wheels
PR= Assumes no precipitation	1.0000

PM10 Emissions:

PM10 Emission Factor: 1.00 Lbs/VMT

E(PM10) = (346 VMT/Yr)(1.00 Lbs/VMT)(0.5)
E(PM10) = 172 Lbs/Yr or 0.47 Lbs/day

V. Existing Air Quality and Impacts

On July 1, 1987 the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). Due to exceedances of the national standards for PM-10, the city of Kalispell and the nearby Evergreen area have been designated by EPA as nonattainment for PM-10. As a result of this designation, 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, since technical studies determined these sources to be 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 is now requiring 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.

After an analysis, the department determined that emission limitations applicable to the Pack Concrete facility were in some cases nonexistent (no permit required) or several times higher than actual emissions (ARM 16.8.1403). Dispersion modelling conducted using emissions from the Pack Concrete facility at its potential to emit (emissions associated with maximum design capacity or as limited by ARM 16.8.1403) indicated that some emission points within the facility were significantly contributing to the PM-10 concentrations in the Kalispell nonattainment area. As used in the preceding sentence, the term "significantly" means that the PM-10 emissions from Pack Concrete, when modeled, were greater than 5 micrograms per cubic meter impact for at least one receptor point within the Kalispell nonattainment area, consistent with the federal Clean Air Act, implementing regulations found at 40 CFR Part 51, and pertinent EPA guidance.

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 the Pack Concrete facility. The new emission limitations in this document, in conjunction with similar limitations on other Kalispell area facilities, demonstrates through dispersion modeling that compliance with the NAAQS for PM-10 will be attained. These reductions in allowable emissions will be enforced through a signed stipulation.

With the proper utilization of existing control equipment and reasonable control techniques (watering or application of dust suppressant) for haul road dust the Pack Concrete facility should be able to operate at maximum design rates and remain in compliance with the stipulated emission limitations.

Kalispell and Evergreen Nonattainment Boundaries

The area is bounded by lines from UTM Coordinate 700000mE, 5347000mN, east to 704000mE, 5346000mN, south to 704000mE, 5341000mN, west to 703000mE, 5341000mN, south to 703000mE, 5340000mN, west to 702000mE, 5340000mN, south to 702000mE, 5339000mN, east to 703000mE, 5339000N, south to 703000mE, 5338000mN, east to 704000mE, 5338000mN, south to 704000mE, 5336000mN, west to 702000mE, 5336000mN, west to 702000mE, 5336000mN, south to 702000mE, 5335000mN, west to 700000mE, 5335000mN, north to 700000mE, 5340000mN, west to 695000mE, 5340000mN, north to 695000mE, 5345000mN, east to 700000mE, 5345000mN, north to 700000mE, 5347000mN.

VI. 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
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Pack Concrete Inc., Air Quality Stipulation for Kalispell SIP.

Description of Project: Concrete batching plant with a maximum design rate of 60 cubic yards per hour. This concrete batching plant produces concrete for use in commercial and residential construction projects in the Kalispell area.

Benefits and Purpose of Proposal: On July 1, 1987 the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). Due to exceedances of the national standards for PM-10, the city of Kalispell and the nearby Evergreen area have been designated by EPA as nonattainment for PM-10. As a result of this designation, 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 stipulation identifies the emission sources and makes enforceable emission limitations and the operation of control equipment and techniques which when considered with similar 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 alternatives are available.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: A list of enforceable conditions and an analysis of conditions are contained in a signed stipulation.

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 this plant will not change. This action makes the control equipment and control techniques at the plant enforceable and assures that the emissions from this facility when considered with similar emission limitations at other sources will attain the PM-10 NAAQS.

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: Michael Glavin

Date: July 22, 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		