State of Idaho
Department of Environmental Quality
Air Quality Division

AIR QUALITY PERMIT
STATEMENT OF BASIS

Permit to Construct No. P-2007.0229

FINAL

Chemical Lime Company

Lime Railcar Load-out Facility

Bancroft, Idaho

Facility ID No. 029-00028

February 12, 2008

Dan Pitman, P.E.

Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.200, 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
gpm	gallons per minute
HAPs	Hazardous Air Pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
m	meter(s)
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
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
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

FACILITY INFORMATION

1.1 Facility Description

Lime (calcium oxide) and hydrated lime (calcium hydroxide) is loaded into trucks from railcars. Lime may also be unloaded from trucks into railcars. Chemical Lime uses a system of conveyors, bucket elevators, and a pneumatic transfer system to accomplish loading and unloading of lime and hydrated lime.

1.2 Permitting History

The following information 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).

November 14, 1991	Initial PTC issued to Chemstar for the railcar load-out facility. (S)
June 27, 1994	PTC No. 029-00028 issued for changing the facility's name from Chemstar to Chemical Lime Company. (S)
November 21, 1997	PTC No. 029-00028 issued for the addition of two portable conveyors. (S)
July 6, 1999	PTC No. 029-00028 issued for replacement of temporary unloading equipment. (S)

APPLICATION SCOPE

Chemical Lime proposes to modify the current operations to allow pneumatic railcar unloading of lime and hydrated lime to trucks, and to control the emissions pneumatic transfer by a new ventilation system that will be connected to an existing baghouse (DC-953). Material will be pneumatically conveyed by a truck mounted positive displacement blower. Chemical Lime also wants to clarify that they did not install a screw conveyor (SC-4) that it was previously permitted to install. The physical changes at the facility consist solely of adding a new ventilation system to an existing baghouse (DC-953).

2.1 Application Chronology

December 7, 2007	DEQ received Chemical Lime's application
January 2, 2008	DEQ determined the application complete
February 12, 2008	DEQ received a $1,000 processing fee from Chemical Lime

TECHNICAL ANALYSIS

3.1 Emission Unit and Control Device

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

Emission Unit	Description	Control Device
Railcar unloading/Truck Loading	Lime and hydrated lime is pneumatically unloaded from railcar to trucks	Existing Baghouse (DC – 953)

3.2 Emissions Inventory

Chemical Lime estimated emissions from the pneumatic transfer of lime and hydrated lime by using EPA AP-42, Section 11.12 emissions factors for concrete batching operations that pneumatically convey cement. This emission factor is conservative in estimating emissions because cement is much finer than either hydrate or lime is, and all PM was assumed to be PM_{10}. For toxic air pollutant emission estimation purposes it was presumed that all the particulate matter that is estimated to be emitted is either all lime or all hydrated lime. DEQ has reviewed and accepted the emissions estimation methods. Table 3.2 and 3.3 provide a summary of the emissions estimates provided by the applicant while pneumatically conveying 20 tons per hour of lime and hydrated lime.

Table 3.2 EMISSIONS ESTIMATES OF CONTROLLED CRITERIA POLLUTANTS

Emissions Unit	PM_{10}		SO_2		NOx		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Point Sources Affected by the Permitting Action											
Truck Loading	0.02	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total, Point Sources	0.02	0.09	-	-	-	-	-	-	-	-	-

Table 3.3 TAP AND HAP CONTROLLED EMISSIONS SUMMARY

TAPS	HAPS	24-hour Average[a]	Annual Average[a]
		lb/hr	lb/hr
Lime	NA	0.02	NA
Hydrated Lime	NA	0.02	NA

a. 24-hour average only applies to non-carcinogenic TAPs. Annual average only applies to carcinogenic TAPs.
b. NA = not applicable

3.3 Ambient Air Quality Impact Analysis

Emissions from the proposed modification are below all criteria air pollutant modeling thresholds. The State of Idaho Air Quality Modeling Guideline gives a modeling threshold of 0.2 pounds per hour and 1.0 tons per year for PM_{10}; emissions from the pneumatic load-out system are 0.02 pounds per hour and 0.09 tons per year.

Lime and hydrated lime are listed as toxic air pollutants in IDAPA 58.01.01.585. Emissions of these compounds are below the respective screening emission rate (EL). Therefore, modeling is not required

to demonstrate preconstruction compliance. Table 3.4 shows a comparison between estimated emission rates and the screening emissions level for lime and hydrated lime.

Table 3.3 TAP ESTIMATED EMSISIONS AND TOXIC SCREENING EMISSIONS LEVELS

Toxic Air Pollutant	Estimated Emissions (lb/hr)	Screening Emissions Level (EL) (lb/hr)
Lime	0.02	0.133
Hydrated Lime	0.02	0.333

REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Caribou County which is designated as attainment or unclassifiable for PM_{10}, $PM_{2.5}$, CO, NO_2, SO_X, and Ozone (40 CFR 81.313).

4.2 Permit to Construct (IDAPA 58.01.01.201)

Chemical Lime requested a permit to construct for the modification of their currently permitted operation. A new ventilation system is required to be installed to control emissions from pneumatically conveying lime and hydrated lime.

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

The Chemical Lime railcar load-out facility is not on contiguous or adjacent properties with Chemical Lime's quarry and kiln; therefore, it is a stand alone facility. The facility's criteria air pollutant potential to emit is much less than 100 tons per year and the hazardous air pollutant (HAP) emissions are much less than 10 tons per year for any single HAP and 25 tons per year for all HAPs in aggregate. Therefore, the railcar load-out facility is not a Tier I major facility.

4.4 PSD Classification (40 CFR 52.21)

The railcar load-out facility is not a designated facility as defined by 40 CFR 52.21(b) (1) (iii) therefore the major facility threshold is 250 tons per year. The facility's potential to emit is 0.09 tons per year and the facility is a PSD minor facility.

4.5 NSPS Applicability (40 CFR 60)

The railcar load-out facility is not defined as an affected facility by any New Source Performance Standard.

4.6 NESHAP Applicability (40 CFR 61)

The railcar load-out facility is not defined as an affected facility by any National Emissions Standard for Hazardous Air Pollutants listed in 40 CFR 61.

4.7 MACT Applicability (40 CFR 63)

The railcar load-out facility is not defined as an affected facility by any National Emissions Standard for Hazardous Air Pollutants listed in 40 CFR 63, nor does it have the potential to emit hazardous air pollutants greater than 10 tons per year for any single HAP or 25 tons per year for all HAPs in aggregate.

4.8 CAM Applicability (40 CFR 64)

Compliance assurance monitoring is not applicable to this facility because it is a Tier I minor facility.

4.9 Permit Conditions Review

This section describes only those permit conditions (PC) that have been added, revised, modified or deleted as a result of this permitting action. All other permit conditions remain unchanged.

Section 2 of the permit to construct for conveyor assisted lime and hydrated lime loading and unloading is not changed from what was previously permitted.

Following are discussions regarding the new permit to construct provisions of Section 3 for the pneumatic transfer of lime and hydrated lime.

New Permit Conditions 3.1 and 3.2

Permit conditions 3.1 and 3.2 are process and emissions control descriptions.

New Permit Condition 3.3

Permit condition 3.3 requires that emissions from pneumatic unloading of railroad cars be controlled by existing baghouse DC-953. It also requires that the baghouse be operated and maintained as previously permitted (Permit Condition 2.7).

New Permit Condition 3.4

Permit condition 3.4 limits pneumatic unloading of railcars to be accomplished by truck mounted blowers. This requirement will inherently limit lime transfer rates and emissions from the pneumatic unloading operations. The applicant estimated particulate matter emissions at 0.02 pounds per hour based on a pneumatic transfer rate of 20 tons per hour. Limiting pneumatic unloading to truck mounted blowers will assure that emissions remain consistent with this analysis and eliminate the need for a throughput restriction. Even if estimated emissions were to increase by a factor of 10, emissions would remain below modeling thresholds and remain regulatory insignificant.

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 because its permitted emissions are less than one ton per year. Refer to the chronology for fee receipt dates.

Table 5.1 PTC 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}	0.09	0.09	0.0
VOC	0.0	0	0.0
HAPS	0.0	0	0.0
Total:	0.0	0	**0.0**
Fee Due	**$ 1000.00**		

PUBLIC COMMENT

An opportunity for public comment period on the PTC is not required because emissions authorized by the permit do not increase (IDAPA 58.01.01.209.04).

APPENDIX A – AIRS INFORMATION

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Permittee/Facility Name: Chemical Lime Company

Facility Location: Bancroft

AIRS Number: 029-00028

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2								
NO_x								
CO								
PM_{10}	B							
PT (Particulate)	B							
VOC								
THAP (Total HAPs)								
			APPLICABLE SUBPART					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).