

Statement of Basis

**Permit to Construct No. P-2013.0053
Project ID 61547**

**BASF Corp.
Caldwell, Idaho**

Facility ID 027-00088

Final

September 17, 2015
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Permit Writer

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

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE	3
FACILITY INFORMATION	5
Description	5
Permitting History	5
Application Scope	5
Application Chronology	5
TECHNICAL ANALYSIS	6
Emissions Units and Control Equipment	6
Emissions Inventories.....	6
Ambient Air Quality Impact Analyses	7
REGULATORY ANALYSIS.....	8
Attainment Designation (40 CFR 81.313).....	8
Permit to Construct (IDAPA 58.01.01.201).....	8
Tier II Operating Permit (IDAPA 58.01.01.401)	8
Visible Emissions (IDAPA 58.01.01.625)	8
Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70).....	8
PSD Classification (40 CFR 52.21).....	8
NSPS Applicability (40 CFR 60)	8
NESHAP Applicability (40 CFR 61)	8
MACT Applicability (40 CFR 63)	9
Permit Conditions Review.....	9
PUBLIC REVIEW	10
Public Comment Opportunity.....	10
APPENDIX A – EMISSIONS INVENTORIES	11
APPENDIX B – FACILITY DRAFT COMMENTS	12
APPENDIX C – PROCESSING FEE	14

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
Btu	British thermal units
CAA	Clean Air Act
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent emissions
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
HAP	hazardous air pollutants
hr/yr	hours per consecutive 12 calendar month period
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
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 _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
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
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
U.S.C.	United States Code
VOC	volatile organic compounds

yd³ cubic yards
μg/m³ micrograms per cubic meter

FACILITY INFORMATION

Description

BASF Corp. operates two process lines for the treatment of seeds. Raw seeds, a fungicide, adhesive polymers, water, dyes/colorants, peat inoculant, and limestone are combined in mix tanks to treat the seeds. Treated seeds are then transferred to a cooling deck and bagged for storage or shipping.

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).

October 7, 2003	P-020048, Initial PTC issued to Seedbiotics, Permit status (S)
September 20, 2005	P-0050018, PTC modification issued to Seedbiotics to increase throughput and operating hours and install a dust collector and baghouse, Permit status (S)
November 27, 2013	P-2013.0053, Facility name change from Seedbiotics to BASF Corp., Permit status (A, but will become S upon issuance of this permit)

Application Scope

This PTC is a revision of an existing PTC. The applicant has proposed to replace existing control equipment to improve collection efficiency and decrease overall PM emissions.

Application Chronology

June 30, 2015	DEQ received an application.
July 2, 2015	DEQ received an application fee.
July 20, 2015	DEQ determined that the application was incomplete.
July 29, 2015	DEQ received supplemental information from the applicant.
August 3, 2015	DEQ determined that the application was complete.
August 10, 2015	DEQ made available the draft permit and statement of basis for applicant review.
September 3, 2015	DEQ received the permit processing fee.
September 17, 2015	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment
Line 1	<u>Limestone Storage Silo:</u> 50 ton capacity	<u>Dust Collector No. 1-1:</u> Manufacturer: Donaldson Torit Model: CPC-3 Three powercore with Ultra Web filter packs PM ₁₀ control efficiency: 99.9%
	<u>Mixer:</u> CentriCoater Model CC250 550 pound batch capacity	<u>Dust Collector No. 1-2:</u> Manufacturer: Donaldson Torit Model: DFO 4-112 112 Ultra-Web MERV 15 rated cartridge filters PM ₁₀ control efficiency: 99.9%
	<u>Drying Deck:</u> Oliver Machine 5 MMBtu/hr natural gas heater ^a	
	<u>Cooling Deck:</u> Oliver Machine	
	PVOH Processing	<u>Dust Collector No. 1-3:</u> Manufacturer: Spiroflow Systems Model: DSE-3 Two cartridge filters, polyester media with PTFE membrane PM ₁₀ control efficiency: 99%
Line 2	<u>Limestone Storage Silo:</u> 50 ton capacity	<u>Dust Collector No. 2-1:</u> Manufacturer: Donaldson Torit Model: CPC-3 Three powercore with Ultra Web filter packs PM ₁₀ control efficiency: 99.9%
	<u>Mixer</u>	<u>Dust Collector No. 2-2:</u> Manufacturer: Donaldson Torit Model: DFO 4-112 112 Ultra-Web MERV 15 rated cartridge filters PM ₁₀ control efficiency: 99.9%
	<u>Drying Deck:</u> Oliver Machine 5 MMBtu/hr natural gas heater ^a	
	<u>Cooling Deck:</u> Oliver Machine	
	PVOH Processing	<u>Dust Collector No. 2-3:</u> Manufacturer: Spiroflow Systems Model: DSE-3 Two cartridge filters, polyester media with PTFE membrane PM ₁₀ control efficiency: 99%

a) Previously exempt per IDAPA 58.01.01.222.02.c.

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

The following table presents the pre-project potential to emit for all criteria from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 2 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source		PM ₁₀		PM _{2.5}	
		lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)
Line 1	Limestone Silo	1.2	0.19	0.3	0.06
	Seed Mixer	0.04	0.19	0.01	0.06
	Drying Deck	0.20	0.89	0.06	0.26
	Cooling Deck	0.30	1.33	0.09	0.39
Line 2	Limestone Silo	0.02	0.004	0.006	0.001
	Mixer and Drying Deck	0.18	0.78	0.05	0.23
	Cooling Deck	0.26	1.16	0.07	0.34
Pre-Project Totals		2.20	4.54	0.59	1.34

- b) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
- c) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility’s classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source		PM ₁₀		PM _{2.5}		VOC	
		lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)
Line 1	Limestone Silo	0.56	0.004	0.006	0.001		
	PVOH Processing	0.006	0.03	0.002	0.008	6.4E-06	2.8E-05
	Seed Mixer	0.001	0.004	0.0003	0.001		
	Drying Deck	0.20	0.89	0.06	0.26		
	Cooling Deck	0.30	1.33	0.09	0.39		
Line 2	Limestone Silo	0.02	0.003	0.005	0.001		
	PVOH Processing	0.006	0.02	0.002	0.007	1.8E-07	8.0E-07
	Mixer and Drying Deck	0.18	0.78	0.05	0.23		
	Cooling Deck	0.26	1.16	0.08	0.34		
Post Project Totals		1.53	4.22	0.30	1.24	0.00	0.00

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
- b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM ₁₀		PM _{2.5}		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	2.20	4.54	0.59	1.34	0.00	0.00
Post Project Potential to Emit	1.53	4.22	0.30	1.24	0.00	0.00
Changes in Potential to Emit	-0.67	-0.32	-0.29	-0.10	0.00	0.00

Ambient Air Quality Impact Analyses

Emissions will not increase as a result of this permitting action, thus the ambient impact analysis is not required.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Canyon County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the modified emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625Visible Emissions

The sources of PM₁₀ emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.4 and 3.4.

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

IDAPA 58.01.01.301Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM₁₀, PM_{2.5}, and VOC or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements 40 CFR Part 60.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility is not subject to any MACT standards in 40 CFR Part 63.

Permit Conditions Review

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

Revised Permit Condition 1.1

This permit condition has been revised to explain the scope of the current project.

Revised Permit Condition 1.3

This permit condition has been revised to state that this draft PTC will replace the currently active PTC when issued.

Revised Table 1.1

The table has been revised to remove the former control devices and include the new dust collector control devices and PVOH process.

Revised Table 2.2

This table has been revised to show the new dust collector control devices for the limestone silos.

Revised Permit Condition 2.3

This permit condition has been revised to show the PM₁₀ emission limits for the limestone storage silos including the new dust collector control devices.

Revised Table 3.1

The table has been revised to remove the former control devices and include the new dust collector control devices and PVOH process.

Revised Permit Condition 3.3

This permit condition has been revised to show the PM₁₀ emission limits for Line 1 and Line 2 including the new dust collector control devices.

Revised Permit Condition 3.6

This permit condition has been revised to update the naming of the new control devices.

Revised Permit Condition 3.7

This permit condition has been revised to update the naming of the new control devices.

Revised Permit Condition 3.8

This permit condition has been revised to update the naming of the new control device.

Revised Permit Condition 3.9

This permit condition has been revised to remove reference to the baghouses.

Revised Permit Condition 3.10

This permit condition has been revised to remove reference to the baghouses.

Revised Permit Condition 3.12

This permit condition has been revised to remove reference to the baghouses.

Revised Permit Condition 3.13

This permit condition has been revised to remove reference to the baghouses.

PUBLIC REVIEW

Public Comment Opportunity

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04 or IDAPA 58.01.01.404.04.

APPENDIX A – EMISSIONS INVENTORIES

**BASF Corporation - Caldwell, ID
Emission Calculations (Pre-Project)**

Sources of PM/PM-10/PM-2.5 Emissions (Process Line 1)	Control Equipment	Hourly Process Rate (tons/hr)	Daily Process Rate (tons/day)	Annual Process Rate (tons/year)	Uncontrolled Emission Factor PM-10 (lb/ton)	Uncontrolled Emissions PM-10 (lbs/day)	Uncontrolled Emissions PM 10 (lbs/year)	Uncontrolled Emissions PM 2.5 (lbs/year)	Control Efficiency	Controlled Emissions PM 10 (lbs/day)	Controlled Emissions PM 10 (lbs/year)	Controlled Emissions PM 10 (tons/year)	Controlled Emissions PM 25 (lbs/year)	Controlled Emissions PM 25 (tons/year)
Silo Filling	Dust Collector	50	50	16,060	0.47	23.5	7548	2220	95.0%	1.2	377	0.189	111	0.056
Mixer	Dust Collector	5.50	132	48,180	0.156	20,592	7516	2211	95.0%	1.0	376	0.1879	111	0.0553
Drying Deck	Baghouse 1-1	5.50	132	48180	37	4884	1782660	524312	99.9%	4.9	1783	0.891	524	0.262
Cooling Deck	Baghouse 1-2	5.50	132	48180	55	7260	2649900	779382	99.9%	7.3	2650	1.325	779	0.390

Sources of PM/PM-10/PM-2.5 Emissions (Process Line 2)	Control Equipment	Hourly Process Rate (tons/hr)	Daily Process Rate (tons/day)	Annual Process Rate (tons/year)	Uncontrolled Emission Factor PM-10 (lb/ton)	Uncontrolled Emissions PM-10 (lbs/day)	Uncontrolled Emissions PM 10 (lbs/year)	Uncontrolled Emissions PM 2.5 (lbs/year)	Control Efficiency	Controlled Emissions PM 10 (lbs/day)	Controlled Emissions PM 10 (lbs/year)	Controlled Emissions PM 10 (tons/year)	Controlled Emissions PM 25 (lbs/year)	Controlled Emissions PM 25 (tons/year)
Silo Filling	Baghouse 2-2	50	50	16060	0.47	23.5	7548.2	2220	99.9%	0.0235	7.5	0.00377	2.2	0.00111
Mixer and Drying Deck	Baghouse 2-1	4.80	115.2	42048	37	4262.4	1555776	457581	99.9%	4.2624	1556	0.778	457.6	0.229
Cooling Deck	Baghouse 2-2	4.80	115.2	42048	55	6336	2312640	680188	99.9%	6.336	2313	1.156	680.2	0.340

Facility Wide Total Emissions (PM-10)	Uncontrolled Emissions (lbs/year)	8,323,588	Controlled Emissions (lbs/year)	9062
	Uncontrolled Emissions (tons/year)	4,162	Controlled Emissions (tons/year)	4.5

Facility Wide Total Emissions (PM-25)	Uncontrolled Emissions (lbs/year)	2,448,114	Controlled Emissions (lbs/year)	2665
	Uncontrolled Emissions (tons/year)	1,224	Controlled Emissions (tons/year)	1.3

Calculation Factors

- 24 hours/day; maximum operation (all equipment except silo filling)
- 1 hours/day; maximum operation (silo filling)
- 8760 hours/year Line 1; estimated based on hourly and annual throughput rates
- 8760 hours/year Line 2; estimated based on hourly and annual throughput rates

Using EPA's emission calculator with the following criteria, estimates for PM-25 were obtained:

SCC: 30510196 - Industrial processing, mineral products conveying, Chemical

PMCALC_PM10FIL_UNCONTROLLED: 51

PMCALC_PM25FIL_UNCONTROLLED: 15

**BASF Corporation - Caldwell, ID
Emission Factors (Pre-Project)**

Detailed Calculations

Limestone Silo

0.47 pound / ton loaded, uncontrolled PM-10 AP-42, Table 11.12-2 Cement Unloading to Elevated Storage Silo
50 tons/hour; assumes completely filling the silo in one hour
16,060 tons/year; maximum annual limestone throughput Line 1
14,016 tons/year; maximum annual limestone throughput Line 2

Emissions from Mixer, Process Line 1 (via Torit Dust Collector)

0.156 pound/ton; AP-42 factor Table 11.12-2 (Mixer loading uncontrolled; PM-10)
0.0055 pound/ton; AP-42 factor Table 11.12-2 (Mixer loading controlled; PM-10)
95% Control Efficiency (calculated); assume for Torit Dust Collector

Process Line 1

20 batches per hour; maximum process rate
175,200 batches per year; maximum process rate
550 pounds / batch; typical process rate
5.50 tons/hour; process rate (calculated)
48,180 tons/year; process rate (calculated)

Process Line 2

4 batches per hour; maximum process rate
35,040 batches per year; maximum process rate
2,400 pounds / batch; typical process rate
4.80 tons/hour; process rate (calculated)
42,048 tons/year; process rate (calculated)

Emissions from Process Lines

33% Average Limestone usage per batch (weight percentage)
99.9% Control efficiency; typical control efficiency for bags (forced ventilation)
110 pounds/batch; typical amount of limestone released per batch
92 pounds/ton throughput (converted); typical amount of limestone released per batch
37 pounds/ton throughput; uncontrolled emission factor Mixer and Drying Deck (40% of total uncontrolled dust emissions)
55 pounds/ton throughput; uncontrolled emission factor Cooling Deck (60% of total uncontrolled dust emissions)

**BASF Corporation - Caldwell, ID
Emission Calculations (Post-Project)**

Sources of PM/PM-10/PM-2.5 Emissions (Process Line 1)	Control Equipment	Hourly Process Rate (tons/hr)	Daily Process Rate (tons/day)	Annual Process Rate (tons/year)	Uncontrolled Emission Factor PM-10 (lb/ton)	Uncontrolled Emissions PM-10 (lbs/day)	Uncontrolled Emissions PM 10 (lbs/year)	Uncontrolled Emissions PM 2.5 (lbs/year)	Control Efficiency	Controlled Emissions PM 10 (lbs/day)	Controlled Emissions PM 10 (lbs/year)	Controlled Emissions PM 10 (tons/year)	Controlled Emissions PM 25 (lbs/year)	Controlled Emissions PM 25 (tons/year)
Silo Filling	Dust Collector 1-1	50	50	16,060	0.47	564	7548.2	2220	99.9%	0.564	7.5	0.00377	2.2	0.0011
PVOH processing	Dust Collector 1-3	0.0317	0.762	278.0	20	15.23	5560.0	1635	99.0%	0.152	56	0.0278	16.4	0.0082
Mixer	Dust Collector 1-2	5.5	132	48180	0.156	20.592	7516.08	2211	99.9%	0.021	7.52	0.004	2.2	0.0011
Drying Deck	Dust Collector 1-2	5.50	132	48180	37	4884	1782660	524312	99.9%	4.884	1783	0.891	524.3	0.2622
Cooling Deck	Dust Collector 1-2	5.50	132	48180	55	7260	2649900	779382	99.9%	7.260	2650	1.325	779.4	0.3897

Sources of PM/PM-10/PM-2.5 Emissions (Process Line 2)	Control Equipment	Hourly Process Rate (tons/hr)	Daily Process Rate (tons/day)	Annual Process Rate (tons/year)	Uncontrolled Emission Factor PM-10 (lb/ton)	Uncontrolled Emissions PM-10 (lbs/day)	Uncontrolled Emissions PM 10 (lbs/year)	Uncontrolled Emissions PM 2.5 (lbs/year)	Control Efficiency	Controlled Emissions PM 10 (lbs/day)	Controlled Emissions PM 10 (lbs/year)	Controlled Emissions PM 10 (tons/year)	Controlled Emissions PM 25 (lbs/year)	Controlled Emissions PM 25 (tons/year)
Silo Filling	Dust Collector 2-1	50	50	14016	0.47	23.5	6588	1938	99.9%	0.0235	6.58752	0.00329	1.9	0.00097
PVOH processing	Dust Collector 2-3	0.02763	0.663	242.0	20	13.26	4840	1424	99.0%	0.13260	48.40000	0.0242	14.2	0.0071
Mixer and Drying	Dust Collector 2-2	4.80	115.2	42048	37	4262.4	1555776	457581	99.9%	4.2624	1555.776	0.778	457.6	0.229
Cooling Deck	Dust Collector 2-2	4.80	115.2	42048	55	6336	2312640	680188	99.9%	6.336	2312.64	1.156	680.2	0.340

Facility Wide Total Emissions (PM-10)	Uncontrolled Emissions (lbs/year)	8,333,028	Controlled Emissions (lbs/year)	8426.63
	Uncontrolled Emissions (tons/year)	4,167	Controlled Emissions (tons/year)	4.21
Facility Wide Total Emissions (PM-2.5)	Uncontrolled Emissions (lbs/year)	2,450,891	Controlled Emissions (lbs/year)	2478.42
	Uncontrolled Emissions (tons/year)	1,225	Controlled Emissions (tons/year)	1.24

Calculation Factors

- 24 hours/day; maximum operation (all equipment except silo filling)
- 1 hours/day; maximum operation (silo filling)
- 8760 hours/year Line 1; estimated based on hourly and annual throughput rates
- 8760 hours/year Line 2; estimated based on hourly and annual throughput rates

Using EPA's emission calculator with the following criteria, estimates for PM-25 were obtained:

SCC: 30501109 - Concrete batch processing, mixer loading

PMCALC_PM10FIL_UNCONTROLLED: 51

PMCALC_PM25FIL_UNCONTROLLED: 15

**BASF Corporation - Caldwell, ID
Emission Factors (Post-Project)**

Detailed Calculations

Limestone Silo

0.47 pound / ton loaded, uncontrolled PM-10 AP-42, Table 11.12-2 Cement Unloading to Elevated Storage Silo
50 tons/hour; assumes completely filling the silo in one hour
16,060 tons/year; maximum annual limestone throughput Line 1
14,016 tons/year; maximum annual limestone throughput Line 2

Emissions from Mixer, Process Line 1 (via Torit Dust Collector)

0.156 pound/ton; AP-42 factor Table 11.12-2 (Mixer loading uncontrolled; PM-10)
0.0055 pound/ton; AP-42 factor Table 11.12-2 (Mixer loading controlled; PM-10)
95% Control Efficiency (calculated); assume for Torit Dust Collector

Process Line 1

20 batches per hour; maximum process rate
175,200 batches per year; maximum process rate
550 pounds / batch; typical process rate
5.50 tons/hour; process rate (calculated)
48,180 tons/year; process rate (calculated)

Process Line 2

4 batches per hour; maximum process rate
35,040 batches per year; maximum process rate
2,400 pounds / batch; typical process rate
4.80 tons/hour; process rate (calculated)
42,048 tons/year; process rate (calculated)

Emissions from Process Lines

33% Average Limestone usage per batch (weight percentage)
99.900% Control efficiency; for cartridge filters (provided by Donaldson Torit for Ultra Web MERV 15 filters)
110 pounds/batch; typical amount of limestone released per batch
92 pounds/ton throughput (converted); typical amount of limestone released per batch
37 pounds/ton throughput; uncontrolled emission factor Mixer and Drying Deck (40% of total uncontrolled dust emissions)
55 pounds/ton throughput; uncontrolled emission factor Cooling Deck (60% of total uncontrolled dust emissions)

PVOH Processing Line 1

278 Annual usage, maximum (tons)
20 emission factor (from AP-42 section 6.4.2 - paint and Varnish Manufacturing)

PVOH Processing Line 2

242 Annual usage, maximum (tons)
20 emission factor (from AP-42 section 6.4.2)

HAP/TAP/VOC Calculations

From Selvol Polyvinyl Alcohol 823 Technical Data Sheet

Total Organic Volatiles, wt%(max): 1
 Total Volatiles, wt% (max): 5
 Methanol, wt% (max): 0.9
 Ash - ISE, wt% (max): 0.5

Sources of HAP/TAP/VOC Emissions (Process Line 1)	Control Equipment	Hourly Process Rate (tons/hr)	Daily Process Rate (tons/day)	Annual Process Rate (tons/year)	Uncontrolled Emission Factor (lb/ton)	Uncontrolled Emissions (lbs/day)	Uncontrolled Emissions (lbs/year)	Control Efficiency	Controlled Emissions (lbs/day)	Controlled Emissions (lbs/year)	Controlled Emissions (tons/year)
PVOH processing	Dust Collector 1-3	0.0317	0.762	278.0	20	15.23	5560.0	99.0%	0.152	56	0.0278
VOC emissions	Dust Collector 1-3	0.00032	0.00761644	2.78	20	0.15232877	55.6	99.9%	0.00015	0.056	0.000028
Methanol emissions	Dust Collector 1-3	0.00029	0.00685479	2.502	20	0.13709589	50.04	99.9%	0.00014	0.050	0.000025
ASH-ISE emissions	Dust Collector 1-3	0.00016	0.00685479	2.502	20	0.13709589	50.04	99.9%	0.00014	0.050	0.000025

Sources of HAP/TAP/VOC Emissions (Process Line 2)	Control Equipment	Hourly Process Rate (tons/hr)	Daily Process Rate (tons/day)	Annual Process Rate (tons/year)	Uncontrolled Emission Factor (lb/ton)	Uncontrolled Emissions (lbs/day)	Uncontrolled Emissions (lbs/year)	Control Efficiency	Controlled Emissions (lbs/day)	Controlled Emissions (lbs/year)	Controlled Emissions (tons/year)
PVOH processing	Dust Collector 2-3	0.0276	0.663	242.0	20	13.26	4840.0	99.0%	0.133	48	0.0242
VOC emissions	Dust Collector 2-3	0.00001	0.00021041	0.0767991	20	0.00420817	1.53598174	99.9%	0.00000421	0.0015	0.0000008
Methanol emissions	Dust Collector 2-3	0.00000	1.8937E-06	0.0006912	20	3.7874E-05	0.01382384	99.9%	0.00000004	0.000014	0.000000007
ASH-ISE emissions	Dust Collector 2-3	0.00000	1.8937E-06	0.0006912	20	3.7874E-05	0.01382384	99.9%	0.00000004	0.000014	0.000000007

Form EI - Proposed Minor Modification to an Existing Minor Facility - Change in Potential to Emit

Table 1 Pre-Project Potential to Emit for PM/PM-10 / PM-2.5 for Point Sources

Emission Unit	Efficiency	PM / PM-10 Emissions (Tons/Year)	PM / PM-2.5 Emissions (Tons/Year)
Dust Collector	95%	0.38	0.11
Baghouse 1-1	99.9%	0.89	0.26
Baghouse 1-2	99.9%	1.32	0.39
Baghouse 2-1	99.9%	0.78	0.23
Baghouse 2-2	99.9%	1.16	0.34

Table 2 Post Project Potential to Emit for PM/PM-10 / PM-2.5 Point Sources

Emission Unit	Efficiency	PM / PM-10 Emissions (Tons/Year)	PM / PM-2.5 Emissions (Tons/Year)
Dust Collector 1-1	99.9%	0.004	0.0011
Dust Collector 1-2	99.9%	2.216	0.65
Dust Collector 1-3	99.0%	0.028	0.0082
Dust Collector 2-1	99.9%	0.003	0.0010
Dust Collector 2-2	99.9%	1.934	0.57
Dust Collector 2-3	99.0%	0.024	0.0071

Table 3 Changes in Potential to Emit for PM/PM-10 for Point Sources

Facility Wide	PM/PM-10 Emissions (Tons/year)	PM/PM-2.5 Emissions (Tons/year)
Pre Project	4.53	1.33
Post Project	4.185	1.2392
Net Change in Emissions	-0.346	-0.093

Table 4 HAP / TAP / VOC emissions (as PM from PVOH processing line)

	VOC emissions	HAP emissions	ASH-ISE emissions
Pre Project	Uncontrolled	Uncontrolled	Uncontrolled
Post Project	2.8568E-05	2.50269E-05	2.50269E-05

APPENDIX B – FACILITY DRAFT COMMENTS

The following comments were received from the facility on August 14, 2015:

Facility Comment: Under Section 2.3, the emission limits listed for each control device vary greatly between the two lines. Can you please clarify why the two lines have such dramatically different emission limits? We would propose that the Line 2 emission limits be changed to more closely match Line 1.

DEQ Response: The emission limit for Line 2 was a typo and has been corrected to 0.76 lb/hr based on the previous permit.

Facility Comment: Section 3.8 requires that dust collector 2-2 stack height shall be a minimum of 30 feet with a diameter of 28 inches. However, the current stack height for that unit is 26 ft. Can we change this requirement to meet this stack height? Is this stack height a minimum as listed in the regulations? If so, can you please let me know what chapter of the code to reference for stack height so we can be sure to remain in compliance.

DEQ Response: Permit Condition 3.8 requires a stack height of 30 feet as in the previous permit. In the initial permit, issued in 2003, the stack height was required to be 30 feet because the initial modeling analysis did not demonstrate NAAQS compliance for PM10. In order to demonstrate compliance, the facility made several physical changes to the emission points including increasing the stack height to 30 feet. This condition cannot be changed unless a new modeling analysis is done to show that compliance can be demonstrated at 26 feet.

APPENDIX C – PROCESSING FEE

PTC Fee Calculation

Instructions:

Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: BASF Corporation
Address: 818 Paynter Ave.
City: Caldwell
State: Idaho
Zip Code: 83605
Facility Contact: Melissa Dostal
Title: EHS Specialist
AIRS No.: 027-00088

- N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
- Y Did this permit require engineering analysis? Y/N
- N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

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
PM10	0.0	0.3	-0.3
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0.3	-0.3
Fee Due	\$ 1,000.00		

Comments:

