Statement of Basis

Permit to Construct No. P-2008.0176
Project ID 61843

ALK-Abelló Source Materials, Inc.
Post Falls, Idaho

Facility ID 055-00072

Final

May 16, 2017
Tom Burnham
Permit Writer

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

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

Btu	British thermal units
Btu/hr	British thermal units per hour
CFR	Code of Federal Regulations
CI	compression ignition
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
FEC	Facility Emissions Cap
GHG	greenhouse gases
gr/dscf	grains (1 lb = 7,000 grains) per dry standard cubic foot
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSR	New Source Review
NSPS	New Source Performance Standards
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
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	*Rules for the Control of Air Pollution in Idaho*
SCL	significant contribution limits
SIP	State Implementation Plan
SO_2	sulfur dioxide
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
TPA	Tablet pollen area
U.S.C.	United States Code
VOC	volatile organic compounds

FACILITY INFORMATION

Description

ALK-Abelló Source Materials, Inc., (ALK) operates an allergen source material purification facility in an industrial park on Lochsa Street in Post Falls, Idaho. The facility receives and purifies harvested pollens, hairs, insects, and other allergenic materials from various sources for further processing elsewhere to produce a vaccine for individuals with allergies. Two additional processes at the facility involve the growing, harvesting and purification of dust mites for similar processing into a vaccine at other facilities.

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).

May 23, 2016	P-2008.0176, Modification to add MITAX 2 Process, Permit status (A, but will become S upon issuance of this permit)
July 11, 2012	P-2008.0176 Project 61030, Remodel tablet pollen area, Permit status (S)
March 20, 2009	P-2008.0176 Project 0176, FEC PTC modification, Permit status (S)
March 26, 2008	P-2008.0008 Project 0008, FEC PTC name change to ALK-Abelló, Permit Status (S)
July 13, 2007	P-2007.0063, Initial PTC issued to Biopol Laboratory, Inc., Permit status (S)

Application Scope

This PTC is a revision of an existing PTC. The applicant has proposed to replace one installed emergency IC engine and one permitted IC engine with two emergency IC engines.

Application Chronology

January 24, 2017	DEQ received an application and an application fee.
January 26, 2017	DEQ determined that the application was complete.
March 6, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
March 13, 2017	DEQ made available the draft permit and statement of basis for applicant review.
May 8, 2017	DEQ received the permit processing fee.
May 16, 2017	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Sources	Control Equipment
Boiler HB-1 Manufacturer: Cleaver Brooks Model: CBI-700-125-125 Year: 2008 125 bhp 5.1 MMBtu/hr Natural gas	None
Boiler HB-2 Manufacturer: Cleaver Brooks Model: CBI-700-125-125 Year: 2008 125 bhp 5.1 MMBtu/hr Natural gas	None
Boiler HB-3 Manufacturer: Cleaver Brooks Model: CBLE 700-125-125HW Year: Assume 2017 (To be delivered in April of 2017) 125 bhp 5.1 MMBtu/hr Natural gas	None
Boiler SRC 5 (Same as SB-2) Manufacturer: Burnham Model: CL-30-G-WHT Year: 2012 30 bhp Natural gas	None
Emergency Generator Engine CAT-1 Manufacturer: Caterpillar Model: C32TA Model Year: 2017 Maximum rated horsepower: 1474 bhp	None
Emergency Generator Engine CAT-2 Manufacturer: Caterpillar Model: C32TA Model Year: 2017 Maximum rated horsepower: 1474 bhp	None
Greenhouse Boiler GB-1 Manufacturer: Mod Con Model: Mod Con 300 Year: 2009 300,000 Btu/hr Natural gas	None
Greenhouse Boiler GB-2 Manufacturer: Mod Con Model: Mod Con 300 Year: 2009 300,000 Btu/hr Natural gas	None

Air make-up units MAU- 9-1 Manufacturer: Governair Model: WF-TL-43-18-E Year: 2013 450,000 Btu/hr Natural gas	None
Boiler SB-1 Manufacturer: Cleaver Brooks Model: FLX 700-300-15ST Year: Assume 2017 (To be delivered in April of 2017) 70 bhp Natural gas	None
Cell 2 Minox Dehumidifier AHU-20 Phase 2 Purchase Timing TBD - 54,300 BTU/hr Natural gas	None
House Vacuum EF-Vac Manufacturer: Spencer Vac Model: TH930BB-MOD Year: 2016	HEPA filter
House Vacuum EF-Vac 2 Manufacturer: Spencer Vac Model: TH930BB-MOD Year: 2016	HEPA filter
U. S. Mites Processing, USM Hoods EF 2-1 Manufacturer: Labconco Model: 080790110 Year: 2012	None
Small Scale Manufacturing, SSM Hoods EF 3-1 Manufacturer: Labconco Model: 98406001580 Year: 2009	None
Source Material Development Labs (SMD), SMD Hoods EF 4-1 Manufacturer: Labconco Model: 984060015280 Year: 2009	None
Class 2 B2 Biological Safety Cabinet Hood EF 3-4 Manufacturer: Labconco Model: 3440001 Year: 2010	HEPA filter
TPA Lab Hoods EF 9-4 Manufacturer: Labconco Model: 970020221550A Year: 2013	HEPA filter
Mitizax Dust Mite (MTX) Lab Hoods, permitted under FEC Assumes EF 10-1 Serves 2 Fume Hoods (Same Model for Each) Manufacturer: Labconco Model: 984060017482 Year: 2010	None
Cell 2 MTX Lab Hoods, MTX Hoods, EF 16-5 Phase 2 Purchase Timing TBD -	None
Cell 2 Purification 1 Hood EF 16-4 Phase 2 Purchase Timing TBD -	None
Minox Screeners EF 10-2, EF 20-1 (part of Mitizax) Existing MTX Cell#1 Minox Sieve Manufacturer: Minox Model: 10436	Baghouse

Year: 2012 MTX Cell#2 Minox Sieve will be purchased as part of Phase 2.	
Mitizax Fluid Bed Dryer EF 10-3 Existing MTX Cell#1 Fluid Dryer Manufacturer: Vector Model: VFC-30 Year: 2010	HEPA filter
Cell 2 MTX Ethanol Drying Cabinets EF 16-3 Ethanol drying cabinets will be custom built by a local fabrication shop. Preliminary designs efforts are underway at this time. Estimated completion date for a prototype will be May of 2017.	None
Cell 2 MTX Fluid Bed Dryer Phase 2 Purchase Timing TBD -	None
Mitizax Dust Mite (MTX) Lab Hoods, permitted under FEC Assumes EF 10-1 Serves 2 Fume Hoods (Same Model for Each) Manufacturer: Labconco Model: 984060017482 Year: 2010	None
Cell 2 MTX Lab Hoods, MTX Hoods, EF 16-5 Phase 2 Purchase Timing TBD -	HEPA filter

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.

Using this definition of Potential to Emit an emission inventory was developed for the emergency generator engines at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, HAP PTE were based on manufacturer data for 100 hrs of operation per year.

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 for the two emergency generator engines being modified 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	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
EG-1	0.49	0.02	0.016	0.00	13.78	0.69	8.60	0.43	1.95	0.10
EG-2	0.49	0.02	0.016	0.00	13.78	0.69	8.60	0.43	1.95	0.10
Pre-Project Totals	**0.98**	**0.04**	**0.03**	**0.00**	**27.56**	**1.38**	**17.20**	**0.86**	**3.90**	**0.20**

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.

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 pollutants from the two emergency IC engines 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	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
CAT-1	0.48	0.02	0.02	0.00	13.59	0.68	8.48	0.42	1.92	0.10
CAT-2	0.48	0.02	0.02	0.00	13.59	0.68	8.48	0.42	1.92	0.10
Post Project Totals	**0.96**	**0.04**	**0.04**	**0.00**	**27.18**	**1.36**	**16.96**	**0.84**	**3.84**	**0.20**

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	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	0.98	0.05	0.03	0.00	27.56	1.38	17.20	0.86	3.89	0.19
Post Project Potential to Emit	0.96	0.04	0.04	0.00	27.18	1.36	16.96	0.84	3.84	0.20
Changes in Potential to Emit	**-0.02**	**-0.01**	**0.01**	**0.00**	**-0.38**	**-0.02**	**-0.24**	**-0.02**	**-0.05**	**0.01**

TAP Emissions

There are no changes in TAP emissions for these two emergency IC engine replacements. See Appendix A for affected TAPs with no changes in 24-hour averages in the emissions inventory.

Post Project HAP Emissions

There are no significant changes in HAP emissions for these two emergency IC engine replacements. See Appendix A for a PTE of HAPs.

Ambient Air Quality Impact Analyses

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. A summary of Criteria pollutant BRC analysis is provided in Appendix A.

The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary for TAP is provided in Appendix A.

REGULATORY ANALYSIS

The Regulatory analysis has not changed for the two emergency IC engine replacements. These engines are subject to 40 CFR 60 Subpart IIII, which has been revised in 2013 and 2016; however, the applicable requirements have not changed, as presented in the application. This is because the changes to the subpart related to manufacturers, non-emergency IC engines, IC engines with displacements greater than 30L, and auxiliary emissions control devices, which do not apply to the emergency IC engines being permitted.

The complete regulatory analysis can be reviewed in the previous Statement of Basis for the previous permit issued May 23, 2016.

Permit Conditions Review

Permit Condition 2.1 description was changed to reference the emergency generator engines instead of the generators.

Tables 1.1 and 2.1 have been updated with complete information for each regulated source, including the two new emergency IC engines.

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

ALK-Abelló Air Permit Particulate Emissions Comparison. Dec-16

2016 Installed and Permitted particulate emission sources								
Potential Emissions								
	EU#	CE#	Source	CFM	Hours/yr	gr/dscf	lb/hr	ton/yr
House Vacuum	EF-Vac	HEPA	EF-Vac	491	8760	0.005	0.02	0.09
USM Hoods	EF 2-1		EF 2-1	1995	8760	0.001	0.02	0.07
SSM Hoods	EF 3-1		EF 3-1	6845	8760	0.001	0.06	0.26
SMD Hoods	EF 4-1		EF 4-1	3140	8760	0.001	0.03	0.12
Class 2 B2	EF 3-4	HEPA	EF 3-4	1104	8760	0.001	0.01	0.04
TPA Lab Hoods	EF 9-4	HEPA	EF 9-4	4760	8760	0.001	0.04	0.18
MTX Lab Hoods	EF 10-1		EF 10-1	3770	8760	0.001	0.03	0.14
Minox Screener	EF 10-2	C10-2	EF 10-2	1000	8760	0.005	0.04	0.19
Mitizax Fluid Bed Dryer	EF 10-3	HEPA	EF 10-3	1700	8760	0.005	0.07	0.32
MITIZAX® Purification 1 hood	EF 10-4		EF 10-4	825	8760	0.001	0.01	0.03
House Vacuum 2	EF-Vac 2	HEPA	EF-Vac 2	491	8760	0.005	0.02	0.09
Cell 2 MTX Lab Hoods	EF 16-5		EF 16-5	4110	8760	0.001	0.035229	0.154301
Cell 2 MTX Ethanol Dry Cab	EF 16-3		EF 16-3	3000	8760	0.001	0.03	0.11
Cell 2 Minox Screener	BH 20-1	BH 20-1	BH 20-1	1000	8760	0.005	0.04	0.19
Cell 2 MTX Fluid Bed Dryer	EF 19-1	HEPA		1760	8760	0.005	0.08	0.33
Cell 2 MTX Purification 1 hood	EF 16-4		EF 16-4	725	8760	0.001	0.01	0.03
Combustion Sources							1.13	0.71
			Totals				**1.67**	**3.05**

	Potential Emissions								Actual Emissions				
2016 Installed and Proposed Particulate Emission Sources													
	Potential Emissions								Actual Emissions				
	EU#	CE#	Source	CFM	Hours/yr	gr/dscf	lb/hr	ton/yr	CFM	Hours/yr	gr/dscf	lb/hr	ton/yr
House Vacuum	EF-Vac	HEPA	EF-Vac	491	8760	0.005	0.02	0.09	491	4680	0.005	0.02	0.05
USM Hoods	EF 2-1		EF 2-1	1995	8760	0.001	0.02	0.07	1995	2600	0.001	0.02	0.02
SSM Hoods	EF 3-1		EF 3-1	6845	8760	0.001	0.06	0.26	6845	2600	0.001	0.06	0.08
SMD Hoods	EF 4-1		EF 4-1	3140	8760	0.001	0.03	0.12	3140	2600	0.001	0.03	0.03
Class 2 B2	EF 3-4	HEPA	EF 3-4	1104	8760	0.001	0.01	0.04	1104	2600	0.001	0.01	0.01
TPA Lab Hoods	EF 9-4	HEPA	EF 9-4	4760	8760	0.001	0.04	0.18	4760	8760	0.001	0.04	0.18
MTX Lab Hoods	EF 10-1		EF 10-1	3770	8760	0.001	0.03	0.14	3770	4680	0.001	0.03	0.08
Minox Screener	EF 10-2	C10-2	EF 10-2	1000	8760	0.005	0.04	0.19	1000	4680	0.005	0.04	0.10
Mitizax Fluid Bed Dryer	EF 10-3	HEPA	EF 10-3	1700	8760	0.005	0.07	0.32	1700	4680	0.005	0.07	0.17
MITIZAX® Purification 1 hood	EF 10-4		EF 10-4	825	8760	0.001	0.01	0.03	825	4680	0.001	0.01	0.02
House Vacuum 2	EF-Vac 2	HEPA	EF-Vac 2	491	8760	0.005	0.02	0.09	491	4680	0.005	0.02	0.05
Cell 2 MTX Lab Hoods	EF 16-5		EF 16-5	4110	8760	0.001	0.035229	0.154301	4110	4680	0.001	0.035229	0.082435
Cell 2 MTX Ethanol Dry Cab	EF 16-3		EF 16-3	3000	8760	0.001	0.03	0.11	3000	4680	0.001	0.03	0.06
Cell 2 Minox Screener	BH 20-1	BH 20-1	BH 20-1	1000	8760	0.005	0.04	0.19	1000	4680	0.005	0.04	0.10
Cell 2 MTX Fluid Bed Dryer	EF 19-1	HEPA		1760	8760	0.005	0.08	0.33	1760	4680	0.005	0.08	0.18
Cell 2 MTX Purification 1 hood	EF 16-4		EF 16-4	725	8760	0.001	0.01	0.03	725	4680	0.001	0.01	0.01
Combustion Sources							1.12	0.71				1.12	0.25
			Totals				**1.66**	**3.05**				**1.66**	**1.47**

* Actual ton/yr emissions for combustion sources based on 3; HW Boilers at 2000 hour/yr and 2 Emerg Gen at 100 hour/yr , 2 Steam Boilers at 50%, 1 Greenhouse boiler at 50% and MAU9-1 and AHU20-1 at 50%

New Source

Permitted Combustion Equipment List

Equip. Tag	Location	Service	Description	CAPACITY	CAPACITY UNITS	EMISSION FACTORS															Fuel Heating Value	Fuel Heating Value	Fuel Usage Per hour[1]	Operating Hrs per year	Fuel Usage Per Year[1]	POTENTIAL EMISSIONS									
						NOx	Units	Reference	CO	Units	Reference	PM10	Units	Reference	VOC	Units	Reference	SOx	Units	Reference						NOx		CO		PM10		VOC		SOx	
																										lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
HB-1	1st Flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 125 BHP	5,103,000	Btu/hr	50	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	84.0	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	4,860	8,760	42,573,600	0.24	1.1	0.4	1.8	0.04	0.18	0.03	0.12	0.003	0.013
HB-2	1st Flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 125 BHP	5,103,000	Btu/hr	50	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	84.0	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	4,860	8,760	42,573,600	0.24	1.1	0.4	1.8	0.04	0.18	0.03	0.12	0.003	0.013
HB-3	1st Flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 125 BHP. (Future)	5,103,000	Btu/hr	50	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	84.0	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	4,860	8,760	42,573,600	0.24	1.1	0.4	1.8	0.04	0.18	0.03	0.12	0.003	0.013
GB-1	1st flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 300,000BTU/hr	300,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	285.7143	8760	2502857.14	0.014286	0.062571	0.024	0.10512	0.002171	0.009511	0.001571	0.006883	0.000171	0.000751
GB-2	1st flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 300,000BTU/hr	300,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	285.7143	8760	2502857.14	0.014286	0.062571	0.024	0.10512	0.002171	0.009511	0.001571	0.006883	0.000171	0.000751
MAU-9-1	Roof	Tablet Pollen Area	, 100% OA, DX packaged rooftop AHU, indirect gas fire	450,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	428.5714	8760	3754285.71	0.021429	0.093857	0.036	0.15768	0.003257	0.014266	0.002357	0.010324	0.000257	0.001126
AHU-20	Roof	Cell 2	Minox Dehumidifier	54,300	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	51.71429	8760	453017.143	0.002586	0.011325	0.004344	0.019027	0.000393	0.001721	0.000284	0.001246	3.1E-05	0.000136
SB-2	1st Flr	Humidification	Natural gas-fired, fire-tube steam boiler, 30 BHP.	1,360,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	6	lb/MMCF	AP-42 Sectio	1	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1,050	Btu/SCF	1,295	8,760	11,346,286	0.0648	0.2837	0.1088	0.4765	0.0098	0.0431	0.0071	0.0312	0.0008	0.0034
SB-1	1st Flr	Humidificatio n	Natural gas-fired, fire-tube steam boiler, 70 BHP.	3,000,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	6	lb/MMCF	AP-42 Sectio	1	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1,050	Btu/SCF	2,857	8,760	25,028,571	0.1429	0.6257	0.2400	1.0512	0.0217	0.0951	0.0157	0.0688	0.0017	0.0075
EG-1	Ground	Emergency	Kohler 1000 kW Generator (1)	1,495	BHP	5.61	g/kW-hr	40 CFR §60.4205 (b)	3.5	g/kW-hr	40 CFR §60.4205 (b)	0.2	g/kW-hr	40 CFR §60.4205 (b)	0.79	g/kW-hr	40 CFR §60.4205 (b)	15	ppm	40 CFR §60.4207	140000	Btu/gallon	71.5	100	7,150	13.78	0.69	8.60	0.43	0.49	0.02	1.95	0.10	0.02	0.00
EG-2	Ground	Emergency	Kohler 1000 kW Generator (2)	1,495	BHP	5.61	g/kW-hr	40 CFR §60.4205 (b)	3.5	g/kW-hr	40 CFR §60.4205 (b)	0.2	g/kW-hr	40 CFR §60.4205 (b)	0.79	g/kW-hr	40 CFR §60.4205 (b)	15	ppm	40 CFR §60.4207	140000	Btu/gallon	71.5	100	7,150	13.78	0.69	8.60	0.43	0.49	0.02	1.95	0.10	0.02	0.00
FutureSources Sources to be replaced																																		
[1] Natural Gas Fetemal Combustion is in SCF and IC Engine is gallons																								Totals		28.55	5.71	18.87	8.14	1.13	0.71	4.00	0.67	0.04	0.05

Actual & Future Combustion Equipment List

Equip. Tag	Location	Service	Description	CAPACITY	CAPACITY UNITS	EMISSION FACTORS															Fuel Heating Value	Fuel Heating Value	Fuel Usage Per hour[1]	Operating Hrs per year	Fuel Usage Per Year[1]	POTENTIAL EMISSIONS									
						NOx	Units	Reference	CO	Units	Reference	PM10	Units	Reference	VOC	Units	Reference	SOx	Units	Reference						NOx		CO		PM10		VOC		SOx	
																										lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
HB-1	1st Flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 125 BHP	5,103,000	Btu/hr	50	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	84.0	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	4,860	8,760	42,573,600	0.24	1.1	0.4	1.8	0.04	0.18	0.03	0.12	0.003	0.013
HB-2	1st Flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 125 BHP	5,103,000	Btu/hr	50	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	84.0	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	4,860	8,760	42,573,600	0.24	1.1	0.4	1.8	0.04	0.18	0.03	0.12	0.003	0.013
HB-3	1st Flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 125 BHP. (Future)	5,103,000	Btu/hr	50	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	84.0	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	4,860	8,760	42,573,600	0.24	1.1	0.4	1.8	0.04	0.18	0.03	0.12	0.003	0.013
GB-1	1st flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 300,000BTU/hr	300,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	285.7143	8760	2502857.14	0.014286	0.062571	0.024	0.10512	0.002171	0.009511	0.001571	0.006883	0.000171	0.000751
GB-2	1st flr	Heating Hot Water system	Natural gas-fired, fire-tube hot water boiler, 300,000BTU/hr	300,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	285.7143	8760	2502857.14	0.014286	0.062571	0.024	0.10512	0.002171	0.009511	0.001571	0.006883	0.000171	0.000751
MAU-9-1	Roof	Tablet Pollen Area	, 100% OA, DX packaged rooftop AHU, indirect gas fire	450,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	428.5714	8760	3754285.71	0.021429	0.093857	0.036	0.15768	0.003257	0.014266	0.002357	0.010324	0.000257	0.001126
AHU-20	Roof	Cell 2	Minox Dehumidifier	54,300	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	7.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	5.5	lb/MMCF	AP-42 Sectio	0.6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1050	Btu/SCF	51.71429	8760	453017.143	0.002586	0.011325	0.004344	0.019027	0.000393	0.001721	0.000284	0.001246	3.1E-05	0.000136
SB-2	1st Flr	Humidification	Natural gas-fired, fire-tube steam boiler, 30 BHP.	1,360,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	6	lb/MMCF	AP-42 Sectio	1	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1,050	Btu/SCF	1,295	8,760	11,346,286	0.0648	0.2837	0.1088	0.4765	0.0098	0.0431	0.0071	0.0312	0.0008	0.0034
SB-1	1st Flr	Humidificatio n	Natural gas-fired, fire-tube steam boiler, 70 BHP.	3,000,000	Btu/hr	50	lb/MMCF	AP-42 Sectio	84	lb/MMCF	AP-42 Sectio	6	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	6	lb/MMCF	AP-42 Sectio	1	lb/MMCF	USEPA, AP-42 Section 1.4, 07/98	1,050	Btu/SCF	2,857	8,760	25,028,571	0.1429	0.6257	0.2400	1.0512	0.0217	0.0951	0.0157	0.0688	0.0017	0.0075
EG-1	Ground	Emergency	CAT 1000 kW Generator (1)	1,474	BHP	5.61	g/kW-hr	40 CFR §60.4205 (b)	3.5	g/kW-hr	40 CFR §60.4205 (b)	0.2	g/kW-hr	40 CFR §60.4205 (b)	0.79	g/kW-hr	40 CFR §60.4205 (b)	15	ppm	40 CFR §60.4207	140000	Btu/gallon	71.9	100	7,190	13.59	0.68	8.48	0.42	0.48	0.02	1.92	0.10	0.02	0.00
EG-2	Ground	Emergency	CAT 1000 kW Generator (2)	1,474	BHP	5.61	g/kW-hr	40 CFR §60.4205 (b)	3.5	g/kW-hr	40 CFR §60.4205 (b)	0.2	g/kW-hr	40 CFR §60.4205 (b)	0.79	g/kW-hr	40 CFR §60.4205 (b)	15	ppm	40 CFR §60.4207	140000	Btu/gallon	71.9	100	7,190	13.59	0.68	8.48	0.42	0.48	0.02	1.92	0.10	0.02	0.00
New Sources																																		
[1] Natural Gas Fetemal Combustion is in SCF and IC Engine is gallons																								Totals		28.17	5.69	18.62	8.13	1.12	0.71	3.95	0.67	0.04	0.05

Proposed Minor Modification to an existing Minor Facility Dec-16

Change in Potential to Emit

Table 1 **Pre-Project Potential to Emit for Regulated Pollutants**

		NOx		CO		PM10		PM2.5		VOC		SOx		Pb		Acetone		Ethanol		Methanol		IPA		Perc	
Description	Emissions Unit	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	NA	NA	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr
HW Boiler 1	HB-1	0.24	1.06	0.41	1.79	0.04	0.16	0.02	0.08	0.03	0.12	0.0029	0.0128	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HW Boiler 2	HB-2	0.24	1.06	0.41	1.79	0.04	0.16	0.02	0.08	0.03	0.12	0.0029	0.0128	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HW Boiler 3	HB-3	0.24	1.06	0.41	1.79	0.04	0.16	0.02	0.08	0.03	0.12	0.0029	0.0128	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greenhouse Boiler 1	GB-1	0.01	0.06	0.02	0.11	0.00	0.01	0.00	0.00	0.00	0.01	0.0002	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greenhouse Boiler 2	GB-2	0.01	0.06	0.02	0.11	0.00	0.01	0.00	0.00	0.00	0.01	0.0002	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Makeup air unit 9-1	MAU-9-1	0.02	0.09	0.04	0.16	0.00	0.01	0.00	0.01	0.00	0.01	0.0003	0.0011	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Steam Boiler 2	SB-1	0.14	0.63	0.24	1.05	0.02	0.10	0.01	0.05	0.02	0.07	0.0017	0.0075	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Steam Boiler 1	SB-2	0.06	0.28	0.11	0.48	0.01	0.04	0.00	0.02	0.01	0.03	0.0008	0.0034	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kohler Emergency Generator 1	EG-1	13.78	0.69	8.60	0.43	0.49	0.02	0.25	0.01	1.95	0.10	0.0156	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kohler Emergency Generator 2	EG-2	13.78	0.69	8.60	0.43	0.49	0.02	0.25	0.01	1.95	0.10	0.0156	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
House Vacuum 1	EF-Vac	0.00	0.00	0.00	0.00	0.02	0.09	0.01	0.05	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
House Vacuum 2	EF-Vac 2	0.00	0.00	0.00	0.00	0.02	0.09	0.01	0.05	0.00	0.00	0.0000	0.0000	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cell 2 Minox Dehumidifier	AHU 20	0.002586	0.011325	0.004344	0.019027	0.000393	0.001721	0.00	0.00	0.000284	0.001246	3.1E-05	0.000136	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
USM Hoods	EF 2-1	0.00	0.00	0.00	0.00	0.02	0.07	0.01	0.04	0.18	0.23	0.00	0.00	NA	NA	0.00	0.00	0.15	0.19	0.01	0.01	0.02	0.03	0.00	0.00
SSM Hoods	EF 3-1	0.00	0.00	0.00	0.00	0.06	0.26	0.03	0.13	1.09	0.38	0.00	0.00	NA	NA	1.85	2.40	0.00	0.00	0.00	0.00	0.23	0.30	0.86	0.08
SMD Hoods	EF 4-1	0.00	0.00	0.00	0.00	0.03	0.12	0.01	0.06	0.08	0.10	0.00	0.00	NA	NA	0.61	0.80	0.05	0.06	0.00	0.00	0.03	0.04	0.00	0.00
Class 2 B2	EF 3-4	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.02	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TPA Lab Hoods	EF 9-4	0.00	0.00	0.00	0.00	0.04	0.18	0.02	0.09	0.23	0.30	0.00	0.00	NA	NA	10.92	14.22	0.00	0.00	0.00	0.00	0.23	0.30	0.00	0.00
MTX Lab Hoods	EF 10-1	0.00	0.00	0.00	0.00	0.03	0.14	0.02	0.07	0.78	1.92	0.00	0.00	NA	NA	0.00	0.00	0.62	1.45	0.03	0.08	0.13	0.30	0.00	0.00
Minox Screener	EF 10-2	0.00	0.00	0.00	0.00	0.04	0.19	0.02	0.09	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mitizax Fluid Bed Dryer	EF 10-3	0.00	0.00	0.00	0.00	0.07	0.32	0.04	0.16	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MITIZAX® Purification 1 hood	EF 10-4	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.02	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTX Cell 2 Lab Hoods	EF 16-5	0.00	0.00	0.00	0.00	0.035229	0.154301	0.02	0.08	1.76	4.13	0.00	0.00	NA	NA	0.00	0.00	1.51	3.53	0.08	0.19	0.17	0.41	0.00	0.00
Cell 2 MTX Ethanol Dry Cab	EF 16-3	0.00	0.00	0.00	0.00	0.025714	0.112629	0.01	0.06	0.35	0.82	0.00	0.00	NA	NA	0.00	0.00	0.17	0.39	0.01	0.02	0.17	0.41	0.00	0.00
Cell 2 Minox Screener	EF 20-1	0.00	0.00	0.00	0.00	0.042857	0.187714	0.02	0.09	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cell 2 MTX Fluid Bed Dryer	EF 19-1	0.00	0.00	0.00	0.00	0.075429	0.330377	0.04	0.17	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cell 2 MTX Purification 1 hood	EF 16-4	0.00	0.00	0.00	0.00	0.006214	0.027219	0.00	0.01	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	**28.55**	**5.71**	**18.87**	**8.14**	**1.67**	**3.05**	**0.83**	**1.53**	**8.47**	**8.55**	**0.04**	**0.05**	**0.00**	**0.00**	**13.38**	**17.42**	**2.50**	**5.62**	**0.13**	**0.30**	**0.98**	**1.79**	**0.86**	**0.08**

Pwermitted but to be removed or not installed

Acetone emissions for MAU 9-4 assumes running 20 hr/day Birch or Ragweed

Table 2 **Post-Project Potential to Emit for Regulated Pollutants**

		NOx		CO		PM10		PM2.5		VOC		SOx		Pb		Acetone		Ethanol		Methanol		IPA		Perc	
Description	Emissions Unit	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	NA	NA	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr	lb/hr	Ton/yr
HW Boiler 1	HB-1	0.24	1.06	0.41	1.79	0.04	0.16	0.02	0.08	0.03	0.12	0.0029	0.0128	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HW Boiler 2	HB-2	0.24	1.06	0.41	1.79	0.04	0.16	0.02	0.08	0.03	0.12	0.0029	0.0128	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HW Boiler 3	HB-3	0.24	1.06	0.41	1.79	0.04	0.16	0.02	0.08	0.03	0.12	0.0029	0.0128	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greenhouse Boiler 1	GB-1	0.01	0.06	0.02	0.11	0.00	0.01	0.00	0.00	0.00	0.01	0.0002	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greenhouse Boiler 2	GB-2	0.01	0.06	0.02	0.11	0.00	0.01	0.00	0.00	0.00	0.01	0.0002	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Makeup air unit 9-1	MAU-9-1	0.02	0.09	0.04	0.16	0.00	0.01	0.00	0.01	0.00	0.01	0.0003	0.0011	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Steam Boiler 2	SB1	0.14	0.63	0.24	1.05	0.02	0.10	0.01	0.05	0.02	0.07	0.0017	0.0075	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Steam Boiler 1	SB-2	0.06	0.28	0.11	0.48	0.01	0.04	0.00	0.02	0.01	0.03	0.0008	0.0034	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CAT Emergency Generator 1	EG-1	13.59	0.68	8.48	0.42	0.48	0.02	0.24	0.01	1.92	0.10	0.0157	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CAT Emergency Generator 2	EG-2	13.59	0.68	8.48	0.42	0.48	0.02	0.24	0.01	1.92	0.10	0.0157	0.0008	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
House Vacuum 1	EF-Vac	0.00	0.00	0.00	0.00	0.02	0.09	0.01	0.05	0.00	0.00	0.0000	0.0000	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
House Vacuum 2	EF-Vac 2	0.00	0.00	0.00	0.00	0.02	0.09	0.01	0.05	0.00	0.00	0.0000	0.0000	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cell 2 Minox Dehumidifier	AHU 20	0.002586	0.011325	0.004344	0.019027	0.000393	0.001721	0.0002	0.0009	0.0003	0.0012	0.0000	0.0001	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
USM Hoods	EF 2-1	0.00	0.00	0.00	0.00	0.02	0.07	0.01	0.04	0.18	0.23	0.00	0.00	NA	NA	0.00	0.00	0.15	0.19	0.01	0.01	0.02	0.03	0.00	0.00
SSM Hoods	EF 3-1	0.00	0.00	0.00	0.00	0.06	0.26	0.03	0.13	1.09	0.38	0.00	0.00	NA	NA	1.85	2.40	0.00	0.00	0.00	0.00	0.23	0.30	0.86	0.08
SMD Hoods	EF 4-1	0.00	0.00	0.00	0.00	0.03	0.12	0.01	0.06	0.08	0.10	0.00	0.00	NA	NA	0.61	0.80	0.05	0.06	0.00	0.00	0.03	0.04	0.00	0.00
Class 2 B2	EF 3-4	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.02	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TPA Lab Hoods	EF 9-4	0.00	0.00	0.00	0.00	0.04	0.18	0.02	0.09	0.23	0.30	0.00	0.00	NA	NA	10.92	14.22	0.00	0.00	0.00	0.00	0.23	0.30	0.00	0.00
MTX Lab Hoods	EF 10-1	0.00	0.00	0.00	0.00	0.03	0.14	0.02	0.07	0.78	1.83	0.00	0.00	NA	NA	0.00	0.00	0.62	1.45	0.03	0.08	0.13	0.30	0.00	0.00
Minox Screener	EF 10-2	0.00	0.00	0.00	0.00	0.04	0.19	0.02	0.09	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mitizax Fluid Bed Dryer	EF 10-3	0.00	0.00	0.00	0.00	0.07	0.32	0.04	0.16	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MITIZAX® Purification 1 hood	EF 10-4	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.02	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTX Cell 2 Lab Hoods	EF 16-5	0.00	0.00	0.00	0.00	0.035229	0.154301	0.02	0.08	1.76	4.13	0.00	0.00	NA	NA	0.00	0.00	1.51	3.53	0.08	0.19	0.17	0.41	0.00	0.00
Cell 2 MTX Ethanol Dry Cab	EF 16-3	0.00	0.00	0.00	0.00	0.025714	0.112629	0.01	0.06	0.35	0.82	0.00	0.00	NA	NA	0.00	0.00	0.17	0.39	0.01	0.02	0.17	0.41	0.00	0.00
Cell 2 Minox Screener	EF 20-1	0.00	0.00	0.00	0.00	0.042857	0.187714	0.02	0.09	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cell 2 MTX Fluid Bed Dryer	EF 19-1	0.00	0.00	0.00	0.00	0.075429	0.330377	0.04	0.17	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cell 2 MTX Purification 1 hood	EF 16-4	0.00	0.00	0.00	0.00	0.006214	0.027219	0.00	0.01	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Totals	**28.17**	**5.69**	**18.62**	**8.13**	**1.66**	**3.05**	**0.83**	**1.53**	**8.42**	**8.46**	**0.0434**	**0.0536**	**0.00**	**0.00**	**13.38**	**17.42**	**2.50**	**5.62**	**0.13**	**0.30**	**0.98**	**1.79**	**0.86**	**0.08**

Note: Acetone emissions for MAU 9-4 assumes running 10 hr/day Birch and Ragweed similtaneously

New Sources

BRC Evaluation - ALK Source Materials, Inc. Replace Kohler Generators with CAT Generators, December 2016

ID	ce Descrip	NOx		CO		PM2.5		PM10		VOC		SO2		Ethanol		Methanol		Isopropyl Alcohol		Install date
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
Kohler 1	Original Ko	13.78	0.69	8.60	0.43	0.25	0.01	0.49	0.02	1.95	0.10	0.02	0.00	NA	NA	NA	NA	NA	NA	2008
Kohler 2	Permitted	13.78	0.69	8.60	0.43	0.25	0.01	0.49	0.02	1.95	0.10	0.02	0.00	NA	NA	NA	NA	NA	NA	NA
Cat 1	New CAT	13.59	0.68	8.48	0.42	0.24	0.01	0.48	0.02	1.92	0.10	0.02	0.00	NA	NA	NA	NA	NA	NA	2017
Cat 2	New CAT	13.59	0.68	8.48	0.42	0.24	0.01	0.48	0.02	1.92	0.10	0.02	0.00	NA	NA	NA	NA	NA	NA	2017
Difference, new - perm		-0.39	-0.02	-0.24	-0.01	-0.01	0.00	-0.01	0.00	-0.05	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	
BRC Thresholds			4		10		1		1.5	NA	4		4		12.5		17.3		6.58	
Modeling Thresholds																				
	Level I	0.2	1.2	15	NA	0.054	0.35	0.22	NA	NA	NA	0.21	1.2	125	NA	17.3	NA	65.3	NA	
	Level II	2.4	14	175	NA	0.63	4.1	2.6	NA	NA	NA	2.5	14	NA	NA	NA	NA	NA	NA	

Assumptions

1. PM emissions = PM-10 emissions.
2. PM 2.5 emissions are 50% of PM10 emissions
3. New emergency generator runs for emergencies, maintenance, and testing only. Not to exceed 100 hr/yr for maint and testing
4. New Emergency Generators (1000 KWh, 1474 bhp) are exempt sources under IDAPA 58.01.01.222.01.d (diesel fuel, used for emergencies only, <500 hr/yr)

New Equipment
Existing or permitted equipment to be removed or not installed

APPENDIX B – 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: ALK-Abello Source Materials, Inc.
Address: 448 S. Lochsa St.
City: Post Falls
State: ID
Zip Code: 83854
Facility Contact: Warren Miller
Title: Project Manager
AIRS No.: Facility ID No. 055-00072

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	0.02	0.0
SO_2	0.0	0	0.0
CO	0.0	0.01	0.0
PM10	0.0	0	0.0
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0.03	**0.0**
Fee Due	**$ 1,000.00**		

Comments: