Statement of Basis

Permit to Construct No. P-2019.0025
Project ID 62239

Cintas Corporation
Nampa, Idaho

Facility ID 027-00178

Final

March 13, 2020
Zach Pierce ZP
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

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CMS	continuous monitoring systems
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GACT	Generally Available Control Technology
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
HVAC	Heating, Ventilation, and Air Conditioning
HVAC1	Heating, Ventilation, and Air Conditioning Unit 1
ICE	internal combustion engines
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
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
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
O&M	operation and maintenance
O_2	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PERF	Portable Equipment Relocation Form

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
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
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
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

Cintas launders a variety of textile products that it rents to customers, including uniforms, wet mops, bar towels, mats and shop towels. Soiled laundry is sorted as it is unloaded from the trucks in the unloading area. When enough laundry of one product type has been unloaded, the laundry is transported to the wash alley. The laundry is transferred into a washer and cleaned with detergent and water. Washing times vary depending on the type of product being washed. After the wash cycle, the wet textiles are transferred to one of the dryers to go through the drying cycle. The dried laundry is transferred from the dryers into a cart, where it is taken for pressing, sorting and final processing. Wash and rinse water from the washing machines are discharged into trenches beneath the wash alley and transported to the WWT area. The facility has four washers, one of which is a pony washer, and three dryers, one being a pony dryer. The location also has a boiler, steam tunnel/finisher and hot water heater.

Permitting History

This is the initial PTC for an existing unpermitted facility, thus there is no permitting history.

Application Scope

This permit is the initial PTC for this facility.

The facility is obtaining the initial permit for the unpermitted equipment at the facility.

Application Chronology

May 23, 2019	DEQ received an application and an application fee.
May 28 – June 12, 2019	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
June 21, 2019	DEQ determined that the application was incomplete.
August 9, 2019	DEQ received supplemental information from the applicant.
September 6, 2019	DEQ determined that the application was incomplete.
October 28, 2019	DEQ received supplemental information from the applicant.
November 6, 2019	DEQ determined that the application was incomplete.
December 6, 2019	DEQ received supplemental information from the applicant.
December 18, 2019	DEQ determined that the application was complete.
February 4, 2020	DEQ made available the draft permit and statement of basis for peer and regional office review.
February 11, 2020	DEQ made available the draft permit and statement of basis for applicant review.
March 9, 2020	DEQ received the permit processing fee.
March 13, 2020	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units

Table 1 EMISSIONS UNIT INFORMATION

Source ID No.	Emission Units	Emission Point ID No.
Shop Towel Laundering	Emissions Unit Name: Wash Alley Washers 1-3 Max. SST: 1000 lb/load Cycle Time: 1.5 hr Pony Washer 1 Max. SST: 175 lb/load Cycle Time: 1.5 hr	
	Emissions Unit Name: Wastewater Treatment Room	
Boilers, Heaters, Dryers / Drying	Emissions Unit Name: Dryer #1 Manufacturer: CLM Model: 600GP Manufacture Date: Oct., 2000 Heat input rating: 1.6 MMBtu/hr Max. SST: 750 lb/load Cycle Time: 0.75 hr	Exit height: 29.58 ft (9.017 m) Exit diameter: 0.003 ft (0.001 m) Exit temperature: 140 °F (60 °C)
	Emissions Unit Name: Dryer #2 Manufacturer: CLM Model: 800GP Manufacture Date: Oct., 2000 Heat input rating: 2.0 MMBtu/hr Max. SST: 1000 lb/load Cycle Time: 0.75 hr	Exit height: 30.66 ft (9.347 m) Exit diameter: 0.003 ft (0.001 m) Exit temperature: 140 °F (60 °C)
	Emissions Unit Name: Pony Dryer Manufacturer: Cissel Model: KD175G Manufacture Date: Nov., 2000 Heat input rating: 0.45 MMBtu/hr Max. SST: 219 lb/load Cycle Time: 0.75 hr	
	Emissions Unit Name: Steam Tunnel Manufacturer: Leonard Automatics Model: VISION G24 Manufacture Date: 1995 Heat input rating: 0.8 MMBtu/hr Fuel: Natural Gas	Exit height: 35.5 ft (10.82 m) Exit diameter: 1.33 ft (0.405 m)
	Emissions Units: HVAC #1-6 Heat input ratings: 0.2 MMBtu/hr Fuel: Natural Gas	
	Emissions Units: HVAC #7, 8 Heat input ratings: 0.15 MMBtu/hr Fuel: Natural Gas	
	Emissions Unit Name: Boiler #1 Manufacturer: Sellers Model: 125HP-SH-LN390 Manufacture Date: 1996 Heat input rating: 5.23 MMBtu/hr Fuel: Natural Gas	
	Emissions Unit Name: Water Heater Manufacturer: Kemco Model: ORDER #19141 Manufacture Date: 1995 Heat input rating: 3.00 MMBtu/hr Fuel: Natural Gas	Exit height: 33 ft (10.05 m) Exit diameter: 1.33 ft (0.405 m)

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 four washers, three dryers, boiler, steam tunnel, hot water heater, HVAC units, and wastewater treatment operations at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, HAP PTE were based on emission factors developed from source testing, emission factors from AP-42 Chapter 1.4, and process information specific to the facility for this proposed project including equipment cycle times and equipment maximum throughput.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined 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 **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated air pollutants as submitted by Cintas and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this laundering operation uncontrolled Potential to Emit is based upon a worst-case operation of the facility 8,760 hr/yr along with 17,520,000 lb/yr of Soiled Shop Towels and 22,250,400 lb/yr of Clean Dry Textile as the maximum operational throughput.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}	$PM_{2.5}$	PM	SO_2	NO_X	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources							
Shop Towel Laundering	0.00	0.00	0.00	0.00	0.00	0.00	59.43
Boilers, Heaters, Dryers	0.48	0.48	0.48	0.04	6.26	5.26	0.34
Drying	7.36	6.59	14.35	0.00	0.00	0.00	0.00
Total, Point Sources	**7.84**	**7.07**	**14.83**	**0.04**	**6.26**	**5.26**	**59.77**

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by Cintas and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For the laundering operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr along with 17,520,000 lb/yr of Soiled Shop Towels and 22,250,400 lb/yr of Clean Dry Textile as the maximum operational throughput. Then, the worst-case maximum HAP Potential to Emit was determined for the facility.

Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Hazardous Air Pollutants	PTE (T/yr)
2,2,4-Trimethylpentane	0.215
Benzene	0.036
Chloroform	0.115
Chloromethane	0.007
Ethylbenzene	0.584
Hexane	0.131
Methyl Ethyl Ketone (2-Butanone)	0.136
Methylene Chloride (Dichloromethane)	0.231
Styrene	0.021
Tetrachloroethylene	4.298
Toluene	2.247
Trichloroethylene	0.024
Xylene (Total)	2.939
Total	**10.98**

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. This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

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 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 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}	$PM_{2.5}$	PM	SO_2	NO_X	CO	VOC
	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]
Shop Towel Laundering	-	-	-	-	-	-	1.85
Boilers, Heaters, Dryers	0.076	0.076	0.08	0.01	1.00	0.84	0.06
Drying	1.30	0.89	6.83	-	-	-	-
Post-Project Totals	**1.38**	**0.97**	**6.91**	**0.01**	**1.00**	**0.84**	**1.91**

a) 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 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}	$PM_{2.5}$	PM	SO_2	NO_X	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post Project Potential to Emit	1.38	0.97	6.91	0.01	1.00	0.84	1.91
Changes in Potential to Emit	**1.38**	**0.97**	**6.91**	**0.01**	**1.00**	**0.84**	**1.91**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
2,2,4-Trimethylpentane	-	0.05	0.05	23.3	No
2-propanol	-	0.09	0.09	33.3	No
2-Propanone	-	0.07	0.07	119.0	No
Chloromethane	-	0.00	0.00	6.9	No
Cyclohexane	-	0.01	0.01	70.0	No
Ethanol (ethyl alcohol)	-	0.07	0.07	125.0	No
Ethylbenzene	-	0.13	0.13	29.0	No
Heptane	-	0.19	0.19	109.0	No
Hexane	-	0.03	0.03	12.0	No
Methyl Ethyl Ketone (2-Butanone)	-	0.03	0.03	39.3	No
Styrene	-	0.00	0.00	6.7	No
Toluene	-	0.51	0.51	25.0	No
Trichloroethylene	-	0.01	0.01	17.9	No
Xylene (Total)	-	0.67	0.67	29.0	No

All changes in emissions rates for non-carcinogenic TAP were below EL (screening emissions level) as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average non-carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table.

Table 7 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Benzene	-	2.55E-04	2.55E-04	8.00E-04	No
Chloroform	-	8.20E-04	8.20E-04	2.80E-04	Yes
Methylene Chloride (Dichloromethane)	-	1.64E-03	1.64E-03	1.60E-03	Yes
Tetrachloroethylene	-	3.05E-02	3.05E-02	1.30E-02	Yes
Trichloroethylene	-	1.71E-04	1.83E-04	5.10E-04	No

Some of the PTEs for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is required for Chloroform, Methylene Chloride (Dichloromethane), and Tetrachloroethylene because the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded. If DEQ determines that Toxic Air Pollutant Reasonably Available Control Technology (T-RACT) is used to control emissions of carcinogenic TAPs, then concentrations of 10 times the AACCs are considered acceptable in the modeling review, as per Idaho Air Rules Section 210.12.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants 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 8 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (lb/hr)	PTE (T/yr)
2,2,4-Trimethylpentane	1.53E-03	0.01
Benzene	2.55E-04	0.00
Chloroform	8.20E-04	0.00
Chloromethane	4.88E-05	2.14E-04
Ethylbenzene	4.14E-03	0.02
Hexane	9.27E-04	0.00
Methyl Ethyl Ketone (2-Butanone)	9.67E-04	0.00
Methylene Chloride (Dichloromethane)	1.64E-03	0.01
Styrene	1.47E-04	0.00
Tetrachloroethylene	3.05E-02	0.13
Toluene	1.60E-02	0.07
Trichloroethylene	1.71E-04	0.00
Xylene (Total)	2.09E-02	0.09
Totals	**0.08**	**0.32**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO, VOC, and HAPs were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1] while Chloroform, Methylene Chloride (Dichloromethane), and Tetrachloroethylene exceeded them. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

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. 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). By demonstrating T-RACT with best management practices, impacts from chloroform and tetrachloroethylene are both below 10 times the AACCs, and therefore demonstrate preconstruction compliance for all air toxics. A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix A.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Canyon County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total HAPs) has permitted emissions > 25 T/yr.

SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.

SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.

UNK = Class is unknown.

For All Other Pollutants:

A = Use when permitted emissions of a pollutant are > 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.

[1] Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.

UNK = Class is unknown.

Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	14.83	6.91	**100**	B
PM_{10}	7.83	1.38	**100**	B
$PM_{2.5}$	7.07	0.97	**100**	B
SO_2	0.04	0.01	**100**	B
NO_X	6.26	1.00	**100**	B
CO	5.26	0.84	**100**	B
VOC	59.78	1.91	**100**	B
HAP (single)	4.3	0.13	**10**	B
Total HAPs	10.85	0.32	**25**	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 .... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the existing 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 58.01.01.401 .... Tier 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.

Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701)

IDAPA 58.01.01.701 .... Particulate Matter – New Equipment Process Weight Limitations

IDAPA 58.01.01.700 through 703 set PM emission limits for process equipment based on when the piece of equipment commenced operation and the piece of equipment's process weight (PW) in pounds per hour (lb/hr). IDAPA 58.01.01.701 and IDAPA 58.01.01.702 establish PM emission limits for equipment that commenced operation on or after October 1, 1979, and for equipment operating prior to October 1, 1979, respectively.

For equipment that commenced operation on or after October 1, 1979, the PM allowable emission rate (E) is based on one of the following equations:

IDAPA 58.01.01.701.01.a: If PW is < 9,250 lb/hr; $E = 0.045\ (PW)^{0.60}$

IDAPA 58.01.01.701.01.b: If PW is ≥ 9,250 lb/hr; $E = 1.10\ (PW)^{0.25}$

For equipment that commenced prior to October 1, 1979, the PM allowable emission rate is based on one of the following equations:

IDAPA 58.01.01.702.01.a: If PW is < 17,000 lb/hr; $E = 0.045\ (PW)^{0.60}$

IDAPA 58.01.01.702.01.b: If PW is ≥ 17,000 lb/hr; $E = 1.12\ (PW)^{0.27}$

Table 10 provides the resulting PM allowable emission rates per IDAPA 58.01.01.701 based on process weight. As shown in Table 15, the controlled PM emission rates of all equipment are below the allowable PM emission rates of this Rule.

Table 10 PROCESS WEIGHT CALCULATIONS

Source	Textile	Process Weight (lb/hr)	Estimated PM Emission Rate (lb/hr)	Allowable PM Emission Rate (lb/hr)
Dryer #1	Bar Towel[(a)]	1200	1.55	3.17
	Shop Towel	800	1.25	2.48
Dryer #2	Bar Towel	1600	2.06	3.76
	Shop Towel	1066.7	1.66	2.95
Pony Dryer #1	Bar Towel	350	0.45	1.51
	Shop Towel	233.3	0.36	1.19

a) Bar Towels represent the highest emission factor for non-shop towel textiles provided by the Grand Rapids source test, therefore contributing to potential to emit and the emissions inventory.

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

IDAPA 58.01.01.301 .... Requirement to Obtain Tier I Operating Permit

IDAPA 58.01.01.006 defines a Tier I source as "Any source located at a major facility as defined in Section 008." IDAPA 58.01.01.008.10 defines a Major Facility as either:

- For HAP a facility with the potential to emit ten (10) tons per year (T/yr) or more of any hazardous air pollutant, other than radionuclides, or
- The facility emits or has the potential to emit twenty-five (25) T/yr or more of any combination of any hazardous air pollutants, other than radionuclides.

or, for non-attainment areas

- The facility emits or has the potential to emit one hundred (100) tons per year or more of any regulated air pollutant. The fugitive emissions shall not be considered in determining whether the facility is major unless the facility is a "Designated Facility":

Therefore, it needs to be determined if this facility is a HAP Major Source. The following table compares this facility's post-project facility-wide annual PTE for all HAP emitted by the source to the HAP Major Source thresholds in order to determine if this facility is a HAP Major Source.

Table 11 PTE FOR THE HAZARDOUS AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

Hazardous Air Pollutants	PTE (T/yr)	Major Source Threshold (T/yr)	Exceeds the Major Source Threshold?
2,2,4-Trimethylpentane	0.01	**10**	No
Benzene	0.00	**10**	No
Chloroform	0.00	**10**	No
Chloromethane	2.14E-04	**10**	No
Ethylbenzene	0.02	**10**	No
Hexane	0.00	**10**	No
Methyl Ethyl Ketone (2-Butanone)	0.00	**10**	No
Methylene Chloride (Dichloromethane)	0.01	**10**	No
Styrene	0.00	**10**	No
Tetrachloroethylene	0.13	**10**	No
Toluene	0.07	**10**	No
Trichloroethylene	0.00	**10**	No
Xylene (Total)	0.09	**10**	No
Total	**0.32**	**25**	**No**

As presented in the preceding table, the PTE for each HAP is less than 10 T/yr and the PTE for all HAP combined is less than 25 T/yr. Therefore, this facility is not a HAP Major Source subject to Tier I requirements.

Therefore, it needs to be determined if this facility is a criteria pollutant Major Source. As discussed previously the Cintas Corporation facility is located in Canyon County, which is designated as attainment for $PM_{2.5}$, PM_{10}, SO_2, NO_X, CO, and Ozone for federal and state criteria air pollutants. Therefore, the following table compares the post-project facility-wide annual PTE for all criteria pollutants emitted by the source to the applicable criteria pollutant Major Source thresholds in order to determine if the facility is a criteria pollutant Major Source.

Table 12 PTE FOR REGULATED AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

Regulated Air Pollutants	PTE (T/yr)	Major Source Threshold (T/yr)	Exceeds the Major Source Threshold?
PM_{10}	1.38	**100**	No
$PM_{2.5}$	0.97	**100**	No
SO_2	0.01	**100**	No
NO_X	1.00	**100**	No
CO	0.84	**100**	No
VOC	1.91	**100**	No

As presented in the preceding table the PTE for each criteria pollutant is less than 100 T/yr. Therefore, this facility is not a criteria pollutant Major Source subject to Tier I requirements.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 .... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1). This section defines a Major stationary source as:

Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant: Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants (with thermal dryers), primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140), fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants, or

Notwithstanding the stationary source size specified in paragraph (b)(1)(i) of this section, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or

Any physical change that would occur at a stationary source not otherwise qualifying under paragraph (b)(1) of this section, as a major stationary source, if the changes would constitute a major stationary source by itself.

This facility is not one of the facilities designated and does not have facility-wide emissions for any criteria pollutant that exceed 250 T/yr. In addition, the facility is not 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), the PSD requirements do not apply.

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/GACT Applicability (40 CFR 63)

Subpart JJJJJJ

§63.11195 Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart.

(e) A gas-fired boiler as defined in this subpart.

Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

This facility is not subject to this requirement because it is operating a gas-fired boiler and is therefore not subject due to part §63.11195.

Therefore, the facility is not subject to any GACT standards in 40 CFR Part 63.

Permit Conditions Review

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

Permit Scope; Permit Section 1

This section indicates that this is an initial permit to construct. This section also includes a list of regulated sources.

Shop Towel Laundering; Permit Section 2

Permit Condition 2.1 describes the process of the shop towel laundering operations.

Table 2.1 summarizes the features of the shop towel laundering equipment.

Permit Condition 2.2 establishes the opacity requirements in accordance with IDAPA 58.01.01.625.

Permit Condition 2.3 specifies the annual throughput of shop towels in terms of pounds of Soiled Shop Towels that can be laundered. Soiled Shop Towels throughput is the weight of the dirty shop towels to enter the shop towel laundering process. The throughput limits as well as design capacities are sufficient limitations to ensure that emissions do not threaten major facility thresholds and protect NAAQS or TAP increments.

Permit Condition 2.4 specifies that Shop Towels shall only be process with other shop towels, no other textiles goods can be processed with them.

Permit Condition 2.5 specifies types of textiles and towels that are prohibited to be laundered.

Permit Condition 2.6 prohibits the use of the pony washer and pony dryer in the shop towel laundering process.

Permit Condition 2.7 prohibits the facility to launder any towels containing free liquids.

Permit Condition 2.8 prohibits the laundering of shop towels with flash points greater than 140°F.

Permit Condition 2.9 is monitoring requirement to demonstrate compliance with the Soiled Shop Towel Laundering Process Throughput Permit Condition.

Permit Condition 2.10 is recordkeeping requirement to demonstrate compliance with the Soiled Shop Towel Laundering Process Throughput Permit Condition and Permit Conditions 2.5, 2.7, and 2.8.

Permit Condition 2.11 is a standard DEQ recordkeeping requirement to demonstrate compliance with the Emission Limits Permit Condition.

Drying Operations; Permit Section 3

Permit Condition 3.1 describes the process of the drying operations.

Table 3.1 summarizes the features of the drying process.

Permit Condition 3.2 establishes the opacity requirements in accordance with IDAPA 58.01.01.625.

Permit Condition 3.3 specifies the approved annual throughput of the drying process in terms of pounds of total Clean Dry Textiles and pounds of Non-Shop Towel Clean Dry Textiles. Total Clean Dry Textile throughput is the weight of the textiles after the drying cycle. The conversion factor to go from Soiled Shop Towels to Clean Dry Textiles is 1.25 lbs SST/lb CDT and was determined from source testing. The throughput limits as well as design capacities are sufficient limitations to ensure that emissions do not threaten major facility thresholds and protect NAAQS or TAP increments.

Permit Condition 3.4 is a monitoring requirement to demonstrate compliance with the Drying Process Throughput Permit Condition.

Permit Condition 3.5 is a standard DEQ recordkeeping requirement to demonstrate compliance with the Emission Limits Permit Condition.

Boilers, Heaters, Dryers Operations; Permit Section 4

Permit Condition 4.1 describes the process of the combustion operations at the facility.

Table 4.1 summarizes the features of the combustion units.

Permit Condition 4.2 establishes the opacity requirements in accordance with IDAPA 58.01.01.625.

Permit Condition 4.3 specifies the grain loading for the specific fuel burning equipment listed in section 4 of the permit.

Permit Condition 4.4 specifies the fuel type to be combusted in the facility.

Permit Condition 4.5 specifies the annual natural gas usage limit proposed by the facility.

Permit Condition 4.6 is a monitoring requirement to demonstrate compliance with the Annual Natural Gas Usage Limit Permit Condition.

Permit Condition 4.7 is a standard DEQ recordkeeping requirement to demonstrate compliance with the Emission Limits Permit Condition.

General Provisions; Permit Section 5

Initial Permit Condition 5.1

The duty to comply general compliance provision requires that the permittee comply with all of the permit terms and conditions pursuant to Idaho Code §39-101.

Initial Permit Condition 5.2

The maintenance and operation general compliance provision requires that the permittee maintain and operate all treatment and control facilities at the facility in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 5.3

The obligation to comply general compliance provision specifies that no permit condition is intended to relieve or exempt the permittee from compliance with applicable state and federal requirements, in accordance with IDAPA 58.01.01.212.01.

Initial Permit Condition 5.4

The inspection and entry provision requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Initial Permit Condition 5.5

The permit expiration construction and operation provision specifies that the permit expires if construction has not begun within two years of permit issuance or if construction has been suspended for a year in accordance with IDAPA 58.01.01.211.02.

Initial Permit Condition 5.6

The notification of construction and operation provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.01 and 211.03.

Initial Permit Condition 5.7

The performance testing notification of intent provision requires that the permittee notify DEQ at least 15 days prior to any performance test to provide DEQ the option to have an observer present, in accordance with IDAPA 58.01.01.157.03.

Initial Permit Condition 5.8

The performance test protocol provision requires that any performance testing be conducted in accordance with the procedures of IDAPA 58.01.01.157, and encourages the permittee to submit a protocol to DEQ for approval prior to testing.

Initial Permit Condition 5.9

The performance test report provision requires that the permittee report any performance test results to DEQ within 60 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Initial Permit Condition 5.10

The monitoring and recordkeeping provision requires that the permittee maintain sufficient records to ensure compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 5.11

The excess emissions provision requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130-136.

Initial Permit Condition 5.12

The certification provision requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

Initial Permit Condition 5.13

The false statement provision requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Initial Permit Condition 5.14

The tampering provision requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Initial Permit Condition 5.15

The transferability provision specifies that this permit to construct is transferable, in accordance with the procedures of IDAPA 58.01.01.209.06.

Initial Permit Condition 5.16

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

610_Boise ID

Equipment List

Item No.	EU ID	Unit Type	CDT (lbs) per load	Fuel Capacity (mmbtu/hr)	SST(lbs) per load
1	Washer #1	Washer Type 1	800		1000
2	Washer #2	Washer Type 1	800		1000
3	Washer #3	Washer Type 1	800		1000
4	Pony Washer	Pony Washer Type 1	140		175
5	Dryer #1	Dryer Type 1	600	1.6	750
6	Dryer #2	Dryer Type 2	800	2.0	1000
7	Pony Dryer	Pony Dryer Type 1	175	0.45	219
8	Boiler	Boiler		5.23	
9	Steam Tunnel	Steam Tunnel		0.80	
10	HVAC #1	HVAC		0.20	
11	HVAC #2	HVAC		0.20	
12	HVAC #3	HVAC		0.20	
13	HVAC #4	HVAC		0.20	
14	HVAC #5	HVAC		0.20	
15	HVAC #6	HVAC		0.20	
16	HVAC #7	HVAC		0.15	
17	HVAC #8	HVAC		0.15	
18	Water Heater	Hot Water Heater		3.0	
19					
20					
21					
22					
23					
24					
25					

610_Boise ID

Summary of Facility-Wide Emissions

Total Actual Emissions (tons per year)

	NOx	CO	VOC	SO2	PM	PM_{10}	$PM_{2.5}$	Total HAPs
Shop Towel			1.04					0.19
Combustion	1.00	0.84	0.06	0.01	0.08	0.08	0.08	
Dryer Lint					6.04	1.09	0.73	
Total	**1.00**	**0.84**	**1.10**	**0.01**	**6.12**	**1.17**	**0.81**	**0.19**

Proposed Facility PTE (tons per year)

	NOx	CO	VOC	SO2	PM	PM_{10}	$PM_{2.5}$	Total HAPs
Shop Towel			1.85					0.34
Combustion	1.00	0.84	0.06	0.01	0.08	0.076	0.076	
Dryer Lint					6.83	1.30	0.89	
Total	**1.00**	**0.84**	**1.90**	**0.01**	**6.91**	**1.37**	**0.97**	**0.34**
BRC Threshold (IDAPA 58.01.01.006)					2.5	1.5	1.0	

Proposed Limitations

SST	lb/yr	545,000
total CDT	lb/yr	10,500,000
non ST CDT	lb/yr	10,064,000
nat gas usage	MMSCF	20

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Shop Towel Processing - Equipment Throughput and Emissions

Process Unit Summary

Process Unit Type	Number of Units by Type	Max Soiled Textile per load (lbs)	Effective Cycle Time (hr)[1]	Max SST[2] (lbs/hr)	Max SST (lbs/yr)	Max SST (lbs/yr)	Max SST (lbs/yr)
Washer Type 1	3	1000	1.5	2000	17520000	17520000	17,520,000
Pony Washer Type 1	1	175	1.5				
Dryer Type 1	1	750	0.75	1000	8760000	20440000	
Dryer Type 2	1	1000	0.75	1333	11680000		
Pony Dryer Type 1	1	219	0.75				

1 - Effective cyle time for shop towels based on 60 minute wash cycle plus 30 minutes for loading/unloading and 30 minute dry cycle plus 15 minutes for loading/unloading.

2 - Max annual throughput based on 8760 hours per year.

3 - Pony washers and dryers will not process shop towels and are therefore not included in determining maximum SST throughput.

Emission Factors from Cumberland Stack Testing (lb/1000 lbs soiled shop towels)

Emission Source	VOCs	HAPs
Washer(s)	0.42	0.24
Dryers	4.59	0.27
WWT Equipment	1.78	0.73
TOTAL	**6.78**	**1.24**

Actual Emissions from Shop Towel Laundering (tpy) Based on Actual Facility Records

Actual SST Laundered (lbs) 308,000

Emission Source	VOCs	HAPs
Washer(s)	0.06	0.04
Dryers	0.71	0.04
WWT Equipment	0.27	0.11
TOTAL	**1.04**	**0.19**

Unrestricted Potential Emissions from Shop Towel Laundering (tpy)

Total Potential SST Laundered (lbs) 17,520,000

Emission Source	VOCs	HAPs
Washer(s)	3.69	2.06
Dryers	40.18	2.39
WWT Equipment	15.57	6.40
TOTAL	**59.43**	**10.85**

Proposed Potential Annual Emissions from Shop Towel Laundering (tpy)

Total Proposed SST Laundered (lbs) 545,000

Emission Source	VOCs	HAPs
Washer(s)	0.11	0.06
Dryers	1.25	0.07
WWT Equipment	0.48	0.20
TOTAL	**1.85**	**0.34**

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Textile Drying - Equipment Throughput and Emissions

Process Unit Summary

Process Unit	Number of Units by Type	Max CT per load (lbs)[1]	Effective Cycle Time (hr)[2]	Max CT (lbs/hr)	Max CT (lbs/yr)[3]	Max CT (lbs/yr)	Max CT (lbs/yr)
Washer Type 1	3	800	1.00	2400	21024000	22250400	22,250,400
Pony Washer Type 1	1	140	1.00	140	1226400		
Dryer Type 1	1	600	0.50	1200	10512000	27594000	
Dryer Type 2	1	800	0.50	1600	14016000		
Pony Dryer Type 1	1	175	0.50	350	3066000		

1- CT equals Clean Dry Textile
2 -While the effective cycle time for shop towel processing is 1.5 hr/load in the washers and 0.75 min/load in the dryers, the average cycle time for other textiles is 1 hr/load in the washers and 0.5 hr/load in the dryers.
3 - Max annual throughput based on 8760 hours per year.

PM/PM10/PM2.5 Emission Factors from Grand Rapids Emissions Testing (lb/lb CDT)

Textile Laundered	PM	PM10	PM2.5
Bar Towels	1.29E-03	2.12E-04	1.36E-04
Dust Mops	8.53E-04	1.71E-04	1.06E-04
Shop Towels	**1.56E-03**	**1.05E-03**	**9.41E-04**
Floor Mats	5.70E-04	5.69E-05	3.95E-05

Dryer Lint Particulate Emissions

Maximum Hourly Emissions

Dryer Type 1

		Shop Towels	Bar Towels			Limit	Citation
total dryer load	lbs clean dry laundry	600	600				
dryer cycle time[1]	hrs	0.75	0.5				
Max textile hourly throughput	lbs clean laundry per hour	800.0	1200.0				
PM emission factor (from table above)	lbs particulate per lb CDT	1.56E-03	1.29E-03				
estimated particulate emissions	lbs per hour	1.25	1.55	**1.55**	*(max of textiles)*	3.17	IDAPA 58.01.01.701.01(a)
Max. hourly PM10	lbs per hour	0.84	0.25	**0.84**			
Max. hourly PM2.5	lbs per hour	0.75	0.16	**0.75**			
estimated exhaust flow rate	dscfm	5000.00	5000.00				
PM concentration in exhaust	lb/dscf	4.16E-06	5.16E-06				
PM concentration in exhaust	gr/dscf	2.91E-02	3.61E-02				
density of air (70 F and 1 atm)	lb air /dscf air	7.49E-02	7.49E-02				
concentration in exhaust	lb/lb exhaust gas	5.56E-05	6.89E-05				
concentration in exhaust	lb/1000 lb exhaust gas	0.056	0.069	**0.07**	*(max of textiles)*		

Dryer Type 2

		Shop Towels	Bar Towels				
total dryer load	lbs clean dry laundry	800	800				
dryer cycle time[1]	hrs	0.75	0.5				
Max textile hourly throughput	lbs clean laundry per hour	1066.7	1600.0				
PM emission factor (from table above)	lbs particulate per lb CDT	1.56E-03	1.29E-03				
estimated particulate emissions	lbs per hour	1.66	2.06	**2.06**	*(max of textiles)*	3.76	IDAPA 58.01.01.701.01(a)

Pony Dryer Type 1

		Shop Towels	Bar Towels				
total dryer load	lbs clean dry laundry	175	175				
dryer cycle time[1]	hrs	0.75	0.5				
Max textile hourly throughput	lbs clean laundry per hour	233.3	350.0				
PM emission factor (from table above)	lbs particulate per lb CDT	1.56E-03	1.29E-03				
estimated particulate emissions	lbs per hour	0.36	0.45	**0.45**	*(max of textiles)*	1.51	IDAPA 58.01.01.701.01(a)
Max. hourly PM10	lbs per hour	0.25	0.07	**0.25**			
Max. hourly PM2.5	lbs per hour	0.22	0.05	**0.22**			
estimated exhaust flow rate	dscfm	5000.00	5000.00				
PM concentration in exhaust	lb/dscf	1.21E-06	1.51E-06				
PM concentration in exhaust	gr/dscf	8.49E-03	1.05E-02				
density of air (70 F and 1 atm)	lb air /dscf air	7.49E-02	7.49E-02				
concentration in exhaust	lb/lb exhaust gas	1.62E-05	2.01E-05				
concentration in exhaust	lb/1000 lb exhaust gas	0.016	0.020	**0.02**	*(max of textiles)*		

1 -- dryer cycle time for shop towels is 0.75 hours; dryer cycle time for non-shop towels is 0.5 hours

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Textile Drying - Equipment Throughput and Emissions

Potential Annual Emissions - With Shop Towel Restrictions

		Max Allowable Shop Towels	All Bar Towels	
annual throughput of CD ST[3]	lbs per year	436,000	0	
max CD shop towels per hour	lbs per hour	1,600	1,600	
hours of shop towel laundering	hours	272.50	0.00	
hours of non shop towel laundering	hours	8487.50	8760.00	
max CD non ST textiles per hour	lbs per hour	2540.00	2540.00	
annual throughput CD non ST textiles	lbs per year	21,558,250	22,250,400	
PM emissions	tons per year	14.25	14.35	**14.35** *(max of textiles)*
PM10 emissions	tons per year	2.51	2.36	**2.51** *(max of textiles)*
PM2.5 emisisons	tons per year	1.67	1.51	**1.67** *(max of textiles)*

3 -- Throughput for shop towels is taken from the restricted soiled shop towel rate and converted to CDT using a soiling factor of 1.25 lbs SST/lb CDT.

Modeled Annual Emission Rates

Unit	Capacity	PM2.5 - tpy	PM2.5 - lb/hr
Dryer 1	600	0.637	0.15
Dryer 2	800	0.849	0.19
Pony Dryer 1	175	0.186	0.04

Potential Annual Emissions - Without Shop Towel Restrictions

		Shop Towels	Bar Towels	
max annual throughput[2]	lbs CDT per year	14,016,000	22,250,400	
PM emission factor	lbs particulate per lb CDT	1.56E-03	1.29E-03	
PM10 emission factor	lbs particulate per lb CDT	1.05E-03	2.12E-04	
PM2.5 emission factor	lbs particulate per lb CDT	9.41E-04	1.36E-04	
PM emissions	tons per year	10.93	14.35	**14.35** *(max of textiles)*
PM10 emissions	tons per year	7.36	2.36	**7.36** *(max of textiles)*
PM2.5 emissions	tons per year	6.59	1.51	**6.59** *(max of textiles)*

2 -- Throughput for shop towels is taken from the max. soiled shop towel rate and converted to CDT using a soiling factor of 1.25 lbs SST/lb CDT.

Actual Annual Emissions

actual annual all textile throughput (lbs CDT)	9,314,000	During 2018
actual annual non-shop towel textiles throughput (lbs CDT)	9,067,600	
actual annual shop towel throughput (lbs CDT)	246,400	

	PM	PM10	PM2.5
actual emissions all other textiles[4] (tpy)	5.85	0.96	0.62
actual emissions shop towels (tpy)	0.19	0.13	0.12
TOTAL emissions (tpy)	**6.04**	**1.09**	**0.73**

4 -- Next worst case emission factor (bar towels) used to calculate particulate emissions.

Proposed Potential Annual Emissions

actual annual all textile throughput (lbs CDT)	10,500,000	10,500,000
actual annual non-shop towel textiles throughput (lbs CDT)	10,500,000	10,064,000
actual annual shop towel throughput (lbs CDT)		436,000

	PM	PM10	PM2.5
actual emissions all other textiles[4] (tpy)	6.49	1.07	0.68
actual emissions shop towels (tpy)	0.34	0.23	0.21
TOTAL emissions (tpy)	**6.83**	**1.30**	**0.89**

4 -- Next worst case emission factor (bar towels) used to calculate particulate emissions.

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Emissions From Combustion Equipment

Proposed Emissions from Combustion

Effective Operating Hours (hr/yr)	1399
Annual NG Usage (MMSCF)	20
MMBTU per MMscf	1020

EF Reference	EF TYPE	lb/MMSCF				
AP-42, 5th Edition	Boiler	100	84	5.5	0.6	7.6
AP-42, 5th Edition	Full-Size Dryer	100	84	5.5	0.6	7.6
AP-42, 5th Edition	Steam Tunnel	100	84	5.5	0.6	7.6
AP-42, 5th Edition	Other Units	100	84	5.5	0.6	7.6
Total Combustion	14.6	1.00	0.84	0.06	0.01	0.08

EF TYPE	Unit Type	Fuel Capacity (mmbtu/hr)	NOx	CO	VOC	SO2	PM
Boiler	Boiler	5.23	0.359	0.301	0.020	0.002	0.027
Other Units	Hot Water Heater	3.00	0.206	0.173	0.011	0.001	0.016
Full-Size Dryer	Dryer Type 2	2.00	0.137	0.115	0.008	0.001	0.010
Full-Size Dryer	Dryer Type 1	1.60	0.110	0.092	0.006	0.001	0.008
Steam Tunnel	Steam Tunnel	0.80	0.055	0.046	0.003	0.000	0.004
Other Units	Pony Dryer Type 1	0.45	0.031	0.026	0.002	0.000	0.002
Other Units	HVAC	0.20	0.014	0.012	0.001	0.000	0.001
Other Units	HVAC	0.20	0.014	0.012	0.001	0.000	0.001
Other Units	HVAC	0.20	0.014	0.012	0.001	0.000	0.001
Other Units	HVAC	0.20	0.014	0.012	0.001	0.000	0.001
Other Units	HVAC	0.20	0.014	0.012	0.001	0.000	0.001
Other Units	HVAC	0.20	0.014	0.012	0.001	0.000	0.001
Other Units	HVAC	0.15	0.010	0.009	0.001	0.000	0.001
Other Units	HVAC	0.15	0.010	0.009	0.001	0.000	0.001

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Estimated Annual Emissions of Air Toxics

Process Unit Summary

	Process Unit Type	Number of Units by Type	Max Soiled Textile per load (lbs)	Effective Cycle Time (hr)1	Max SST2 (lbs/hr)	Max SST (lbs/yr)	Max SST (lbs/yr)	Max SST (lbs/yr)
Shop Towel Processing - Equipment Throughput (from "SST VOC_HAP" Worksheet)	Washer Type 1	3	1000	1.50	2000	17520000		
	Pony Washer Type 1	1	175	1.50				
				1.50				
				1.50			17520000	
				1.50				
				1.50				
				1.50				
				1.50				
	Dryer Type 1	1	750	0.75	1000	8760000		17,520,000
	Dryer Type 2	1	1000	0.75	1333	11680000		
	Pony Dryer Type 1	1	219	0.75				
				0.75			20440000	
				0.75				
				0.75				
				0.75				
				0.75				
				0.75				

SST Throughputs	lb/yr	Largest Individual HAP (tpy)
Proposed	545,000	0.13
Actual	308,000	0.08
Unrestricted	17,520,000	4.30

Proposed Potential to Emit

Total Proposed SST Laundered (lbs) 545,000

Compound	CAS Number	Molecular Weight	HAP?	*Emission Factors (lb/lb SST)* *WWT*	*Dryers*	*Washer*	Facility Wide	Annual Emission Rates WWT	Dryers	Washers	Facility-Wide (lb/yr)	Facility-Wide (tpy)
1,2,4-Trimethylbenzene	95-63-6	120.19		5.67E-05	8.59E-05	7.03E-06	1.50E-04	30.9	46.8	3.8	81.5	0.04
1,3,5-Trimethylbenzene	108-67-8	120.19		1.70E-05	2.42E-05	2.41E-06	4.36E-05	9.2	13.2	1.3	23.8	0.01
2,2,4-Trimethylpentane	540-84-1	114.23	HAP	1.43E-05	2.99E-06	7.22E-06	2.45E-05	7.8	1.6	3.9	13.4	0.01
2-propanol	71-23-8	60.1		2.98E-05	6.68E-06	1.01E-05	4.66E-05	16.3	3.6	5.5	25.4	0.01
2-Propanone	67-64-1	58.08		2.46E-05	5.84E-06	3.40E-06	3.38E-05	13.4	3.2	1.9	18.4	0.01
4-ethyltoluene	622-96-8	120.19		1.52E-05	2.03E-05	2.28E-06	3.78E-05	8.3	11.1	1.2	20.6	0.01
Benzene	71-43-2	78.11	HAP	2.62E-06	5.11E-07	9.77E-07	4.10E-06	1.4	0.3	0.5	2.2	0.00
Chloroform	67-66-3	119.38	HAP	1.24E-05	6.52E-07	1.47E-07	1.32E-05	6.7	0.4	0.1	7.2	0.00
Chloromethane	74-87-3	50.49	HAP	1.56E-07	5.61E-07	6.75E-08	7.85E-07	0.1	0.3	0.0	0.4	2.14E-04
Cyclohexane	110-82-7	84.16		4.38E-06	8.76E-07	2.10E-06	7.35E-06	2.4	0.5	1.1	4.0	0.00
Dichlorodifluoromethane (FREON 12)	75-71-8	120.91		3.88E-07	8.78E-07	1.11E-07	1.38E-06	0.2	0.5	0.1	0.8	0.00
Ethanol (ethyl alcohol)	64-17-5	46.07		2.72E-05	6.66E-06	2.12E-06	3.59E-05	14.8	3.6	1.2	19.6	0.01
Ethylbenzene	100-41-4	106.17	HAP	3.56E-05	2.19E-05	9.13E-06	6.66E-05	19.4	11.9	5.0	36.3	0.02
Heptane	142-82-5	100.2		5.34E-05	9.30E-06	3.07E-05	9.34E-05	29.1	5.1	16.7	50.9	0.03
Hexane	110-54-3	86.18	HAP	8.83E-06	1.12E-06	4.95E-06	1.49E-05	4.8	0.6	2.7	8.1	0.00
Methyl Ethyl Ketone (2-Butanone)	78-93-3	72.11	HAP	6.57E-06	8.02E-06	9.64E-07	1.55E-05	3.6	4.4	0.5	8.5	0.00
Methylene Chloride(Dichloromethane)	75-09-2	84.93	HAP	1.40E-05	3.79E-06	8.59E-06	2.64E-05	7.6	2.1	4.7	14.4	0.01
Styrene	100-42-5	104.15	HAP	4.36E-07	1.71E-06	2.25E-07	2.37E-06	0.2	0.9	0.1	1.3	0.00
Tetrachloroethylene	127-18-4	165.83	HAP	3.15E-04	7.17E-05	1.04E-04	4.91E-04	171.6	39.1	56.7	267.4	0.13
Toluene	108-88-3	92.14	HAP	1.54E-04	4.32E-05	5.96E-05	2.56E-04	83.7	23.6	32.5	139.8	0.07
Trichloroethylene	79-01-6	131.39	HAP	1.04E-06	1.46E-06	2.43E-07	2.74E-06	0.6	0.8	0.1	1.5	0.00
Xylene (Total)	1330-20-7	106.17	HAP	1.72E-04	1.23E-04	4.00E-05	3.35E-04	93.9	67.1	21.8	182.8	0.09

Compound	Facility-Wide Annual Average (lb/hr)	REGULATORY THRESHOLDS (lb/hr, annual average) Carcinogenic Screening Emission Level (IDAPA 58.01.01.586)	Above/ Below 10 Percent Screening Level	Above/ Below Screening Level	MODELED EMISSION RATES (lb/hr, annual average) DRY1 - Dryer 1	DRY2 - Dryer 2	WWT - WWT and Washers	REGULATORY THRESHOLDS (μg/m³, period average) Modeled	AACC	Above/ Below AACC
1,2,4-Trimethylbenzene	9.31E-03									
1,3,5-Trimethylbenzene	2.71E-03									
2,2,4-Trimethylpentane	1.53E-03									
2-propanol	2.90E-03									
2-Propanone	2.10E-03									
4-ethyltoluene	2.35E-03									
Benzene	2.55E-04	8.00E-04	ABOVE	BELOW						
Chloroform	8.20E-04	2.80E-04	ABOVE	ABOVE	1.74E-05	2.32E-05	7.79E-04	0.0429	4.30E-02	BELOW
Chloromethane	4.88E-05									
Cyclohexane	4.57E-04									
Dichlorodifluoromethane (FREON 12)	8.57E-05									
Ethanol (ethyl alcohol)	2.24E-03									
Ethylbenzene	4.14E-03									
Heptane	5.81E-03									
Hexane	9.27E-04									
Methyl Ethyl Ketone (2-Butanone)	9.67E-04									
Methylene Chloride(Dichloromethane)	1.64E-03	1.60E-03	ABOVE	ABOVE	1.01E-04	1.35E-04	1.40E-03	0.0861	2.40E-01	BELOW
Styrene	1.47E-04									
Tetrachloroethylene	3.05E-02	1.30E-02	ABOVE	ABOVE	1.91E-03	2.55E-03	2.61E-02	1.6086	2.1	BELOW
Toluene	1.60E-02									
Trichloroethylene	1.71E-04	5.10E-04	ABOVE	BELOW						
Xylene (Total)	2.09E-02									

Proposed Potential Emissions of Largest Individual HAP 0.13

610_Boise ID

Estimated Annual Emissions of Air Toxics

Estimated Actual Emissions Total Actual SST Laundered (lbs): 308,000

Compound	CAS Number	Molecular Weight	HAP?	Emission Factors (lb/lb SST)				Annual Emission Rates				
				WWT	Dryers	Washer	Facility Wide	WWT	Dryers	Washers	Facility-Wide (lb/yr)	Facility-Wide (tpy)
1,2,4-Trimethylbenzene	95-63-6	120.19		5.67E-05	8.59E-05	7.03E-06	1.50E-04	17.5	26.4	2.2	46.1	2.30E-02
1,3,5-Trimethylbenzene	108-67-8	120.19		1.70E-05	2.42E-05	2.41E-06	4.36E-05	5.2	7.5	0.7	13.4	6.71E-03
2,2,4-Trimethylpentane	540-84-1	114.23	HAP	1.43E-05	2.99E-06	7.22E-06	2.45E-05	4.4	0.9	2.2	7.6	3.78E-03
2-propanol	71-23-8	60.1		2.98E-05	6.68E-06	1.01E-05	4.66E-05	9.2	2.1	3.1	14.4	7.18E-03
2-Propanone	67-64-1	58.08		2.46E-05	5.84E-06	3.40E-06	3.38E-05	7.6	1.8	1.0	10.4	5.21E-03
4-ethyltoluene	622-96-8	120.19		1.52E-05	2.03E-05	2.28E-06	3.78E-05	4.7	6.3	0.7	11.7	5.83E-03
Benzene	71-43-2	78.11	HAP	2.62E-06	5.11E-07	9.77E-07	4.10E-06	0.8	0.2	0.3	1.3	6.32E-04
Chloroform	67-66-3	119.38	HAP	1.24E-05	6.52E-07	1.47E-07	1.32E-05	3.8	0.2	0.0	4.1	2.03E-03
Chloromethane	74-87-3	50.49	HAP	1.56E-07	5.61E-07	6.75E-08	7.85E-07	0.0	0.2	0.0	0.2	1.21E-04
Cyclohexane	110-82-7	84.16		4.38E-06	8.76E-07	2.10E-06	7.35E-06	1.3	0.3	0.6	2.3	1.13E-03
Dichlorodifluoromethane (FREON 12)	75-71-8	120.91		3.88E-07	8.78E-07	1.11E-07	1.38E-06	0.1	0.3	0.0	0.4	2.12E-04
Ethanol (ethyl alcohol)	64-17-5	46.07		2.72E-05	6.66E-06	2.12E-06	3.59E-05	8.4	2.1	0.7	11.1	5.54E-03
Ethylbenzene	100-41-4	106.17	HAP	3.56E-05	2.19E-05	9.13E-06	6.66E-05	11.0	6.7	2.8	20.5	1.03E-02
Heptane	142-82-5	100.2		5.34E-05	9.30E-06	3.07E-05	9.34E-05	16.4	2.9	9.5	28.8	1.44E-02
Hexane	110-54-3	86.18	HAP	8.83E-06	1.12E-06	4.95E-06	1.49E-05	2.7	0.3	1.5	4.6	2.30E-03
Methyl Ethyl Ketone (2-Butanone)	78-93-3	72.11	HAP	6.57E-06	8.02E-06	9.64E-07	1.55E-05	2.0	2.5	0.3	4.8	2.39E-03
Methylene Chloride(Dichloromethane)	75-09-2	84.93	HAP	1.40E-05	3.79E-06	8.59E-06	2.64E-05	4.3	1.2	2.6	8.1	4.06E-03
Styrene	100-42-5	104.15	HAP	4.36E-07	1.71E-06	2.25E-07	2.37E-06	0.1	0.5	0.1	0.7	3.65E-04
Tetrachloroethylene	127-18-4	165.83	HAP	3.15E-04	7.17E-05	1.04E-04	4.91E-04	97.0	22.1	32.0	151.1	7.56E-02
Toluene	108-88-3	92.14	HAP	1.54E-04	4.32E-05	5.96E-05	2.56E-04	47.3	13.3	18.4	79.0	3.95E-02
Trichloroethylene	79-01-6	131.39	HAP	1.04E-06	1.46E-06	2.43E-07	2.74E-06	0.3	0.4	0.1	0.8	4.22E-04
Xylene (Total)	1330-20-7	106.17	HAP	1.72E-04	1.23E-04	4.00E-05	3.35E-04	53.1	37.9	12.3	103.3	5.17E-02

Actual Emissions of Largest Individual HAP 0.08

610_Boise ID

Estimated Annual Emissions of Air Toxics

Unrestricted Potential-to-Emit Total Unrestricted SST Laundered (lbs) 17,520,000

Compound	CAS Number	Molecular Weight	HAP?	Emission Factors (lb/lb SST)				Annual Emission Rates				
				WWT	*Dryers*	*Washer*	Facility Wide	WWT	Dryers	Washers	Facility-Wide (lb/yr)	Facility-Wide (tpy)
1,2,4-Trimethylbenzene	95-63-6	120.19		5.67E-05	8.59E-05	7.03E-06	1.50E-04	993.3	1504.2	123.2	2620.8	1.310
1,3,5-Trimethylbenzene	108-67-8	120.19		1.70E-05	2.42E-05	2.41E-06	4.36E-05	297.1	424.5	42.2	763.8	0.382
2,2,4-Trimethylpentane	540-84-1	114.23	HAP	1.43E-05	2.99E-06	7.22E-06	2.45E-05	250.7	52.4	126.5	429.5	0.215
2-propanol	71-23-8	60.1		2.98E-05	6.68E-06	1.01E-05	4.66E-05	522.4	117.1	176.9	816.4	0.408
2-Propanone	67-64-1	58.08		2.46E-05	5.84E-06	3.40E-06	3.38E-05	430.4	102.3	59.6	592.3	0.296
4-ethyltoluene	622-96-8	120.19		1.52E-05	2.03E-05	2.28E-06	3.78E-05	267.2	355.8	40.0	663.0	0.331
Benzene	71-43-2	78.11	HAP	2.62E-06	5.11E-07	9.77E-07	4.10E-06	45.9	8.9	17.1	71.9	0.036
Chloroform	67-66-3	119.38	HAP	1.24E-05	6.52E-07	1.47E-07	1.32E-05	216.9	11.4	2.6	230.9	0.115
Chloromethane	74-87-3	50.49	HAP	1.56E-07	5.61E-07	6.75E-08	7.85E-07	2.7	9.8	1.2	13.8	0.007
Cyclohexane	110-82-7	84.16		4.38E-06	8.76E-07	2.10E-06	7.35E-06	76.8	15.3	36.7	128.8	0.064
Dichlorodifluoromethane (FREON 12)	75-71-8	120.91		3.88E-07	8.78E-07	1.11E-07	1.38E-06	6.8	15.4	1.9	24.1	0.012
Ethanol (ethyl alcohol)	64-17-5	46.07		2.72E-05	6.66E-06	2.12E-06	3.59E-05	475.9	116.8	37.1	629.8	0.315
Ethylbenzene	100-41-4	106.17	HAP	3.56E-05	2.19E-05	9.13E-06	6.66E-05	623.3	383.9	160.0	1167.2	0.584
Heptane	142-82-5	100.2		5.34E-05	9.30E-06	3.07E-05	9.34E-05	935.2	163.0	537.9	1636.1	0.818
Hexane	110-54-3	86.18	HAP	8.83E-06	1.12E-06	4.95E-06	1.49E-05	154.7	19.6	86.8	261.1	0.131
Methyl Ethyl Ketone (2-Butanone)	78-93-3	72.11	HAP	6.57E-06	8.02E-06	9.64E-07	1.55E-05	115.1	140.5	16.9	272.4	0.136
Methylene Chloride(Dichloromethane)	75-09-2	84.93	HAP	1.40E-05	3.79E-06	8.59E-06	2.64E-05	245.1	66.4	150.5	462.0	0.231
Styrene	100-42-5	104.15	HAP	4.36E-07	1.71E-06	2.25E-07	2.37E-06	7.6	29.9	3.9	41.5	0.021
Tetrachloroethylene	127-18-4	165.83	HAP	3.15E-04	7.17E-05	1.04E-04	4.91E-04	5517.6	1256.5	1821.9	8596.0	4.298
Toluene	108-88-3	92.14	HAP	1.54E-04	4.32E-05	5.96E-05	2.56E-04	2691.6	757.6	1044.7	4493.9	2.247
Trichloroethylene	79-01-6	131.39	HAP	1.04E-06	1.46E-06	2.43E-07	2.74E-06	18.2	25.6	4.3	48.0	0.024
Xylene (Total)	1330-20-7	106.17	HAP	1.72E-04	1.23E-04	4.00E-05	3.35E-04	3018.2	2158.4	701.3	5877.9	2.939

Unrestricted Potential Emissions of Largest Individual HAP 4.30

610_Boise ID

Estimated Hourly Emissions of Air Toxics

Process Unit Summary

	Process Unit Type	Number of Units by Type	Max Soiled Textile per load (lbs)	Effective Cycle Time (hr)1	Max SST2 (lbs/hr)	Max SST (lbs/yr)	Max SST (lbs/yr)	Max SST (lbs/yr)
Shop Towel Processing - Equipment Throughput (from "SST VOC_HAP" Worksheet)	Washer Type 1	3	1000	1.5	2000	17520000	17520000	17,520,000
	Pony Washer Type 1	1	175	1.5				
				1.5				
				1.5				
				1.5				
				1.5				
				1.5				
				1.5				
	Dryer Type 1	1	750	0.75	1000	8760000	20440000	
	Dryer Type 2	1	1000	0.75	1333	11680000		
	ony Dryer Type	1	219	0.75				
				0.75				
				0.75				
				0.75				
				0.75				
				0.75				

Potential Hourly Emissions

Max Hourly SST Throughput (lb/hr): 2,000

				Emission Factors (lb/lb SST)				Hourly Emission Rates (lb/hr)				REGULATORY THRESHOLDS (lb/hr)	
Compound	CAS Number	Molecular Weight	HAP?	WWT	Dryers	Washer	Facility Wide	Washers	Dryers	WWT	Facility Wide	Non-Carcinogenic Screening Emission Level (IDAPA 58.01.01.585)	Above/Below 10 Percent Screening Level
1,2,4-Trimethylbenzene	95-63-6	120.19		5.67E-05	8.59E-05	7.03E-06	1.50E-04	1.41E-02	1.72E-01	1.13E-01	0.30		
1,3,5-Trimethylbenzene	108-67-8	120.19		1.70E-05	2.42E-05	2.41E-06	4.36E-05	4.82E-03	4.85E-02	3.39E-02	0.09		
2,2,4-Trimethylpentane	540-84-1	114.23	HAP	1.43E-05	2.99E-06	7.22E-06	2.45E-05	1.44E-02	5.98E-03	2.86E-02	0.05	23.3	BELOW
2-propanol	71-23-8	60.1		2.98E-05	6.68E-06	1.01E-05	4.66E-05	2.02E-02	1.34E-02	5.96E-02	0.09	33.3	BELOW
2-Propanone	67-64-1	58.08		2.46E-05	5.84E-06	3.40E-06	3.38E-05	6.81E-03	1.17E-02	4.91E-02	0.07	119.0	BELOW
4-ethyltoluene	622-96-8	120.19		1.52E-05	2.03E-05	2.28E-06	3.78E-05	4.57E-03	4.06E-02	3.05E-02	0.08		
Benzene	71-43-2	78.11	HAP	2.62E-06	5.11E-07	9.77E-07	4.10E-06	1.95E-03	1.02E-03	5.23E-03	0.01		
Chloroform	67-66-3	119.38	HAP	1.24E-05	6.52E-07	1.47E-07	1.32E-05	2.94E-04	1.30E-03	2.48E-02	0.03		
Chloromethane	74-87-3	50.49	HAP	1.56E-07	5.61E-07	6.75E-08	7.85E-07	1.35E-04	1.12E-03	3.12E-04	0.00	6.9	BELOW
Cyclohexane	110-82-7	84.16		4.38E-06	8.76E-07	2.10E-06	7.35E-06	4.19E-03	1.75E-03	8.76E-03	0.01	70.0	BELOW
Dichlorodifluoromethane (FREON 12)	75-71-8	120.91		3.88E-07	8.78E-07	1.11E-07	1.38E-06	2.22E-04	1.76E-03	7.77E-04	0.00		
Ethanol (ethyl alcohol)	64-17-5	46.07		2.72E-05	6.66E-06	2.12E-06	3.59E-05	4.23E-03	1.33E-02	5.43E-02	0.07	125.0	BELOW
Ethylbenzene	100-41-4	106.17	HAP	3.56E-05	2.19E-05	9.13E-06	6.66E-05	1.83E-02	4.38E-02	7.12E-02	0.13	29.0	BELOW
Heptane	142-82-5	100.2		5.34E-05	9.30E-06	3.07E-05	9.34E-05	6.14E-02	1.86E-02	1.07E-01	0.19	109.0	BELOW
Hexane	110-54-3	86.18	HAP	8.83E-06	1.12E-06	4.95E-06	1.49E-05	9.90E-03	2.24E-03	1.77E-02	0.03	12.0	BELOW
Methyl Ethyl Ketone (2-Butanone)	78-93-3	72.11	HAP	6.57E-06	8.02E-06	9.64E-07	1.55E-05	1.93E-03	1.60E-02	1.31E-02	0.03	39.3	BELOW
Methylene Chloride(Dichloromethane)	75-09-2	84.93	HAP	1.40E-05	3.79E-06	8.59E-06	2.64E-05	1.72E-02	7.58E-03	2.80E-02	0.05		
Styrene	100-42-5	104.15	HAP	4.36E-07	1.71E-06	2.25E-07	2.37E-06	4.49E-04	3.42E-03	8.72E-04	0.00	6.7	BELOW
Tetrachloroethylene	127-18-4	165.83	HAP	3.15E-04	7.17E-05	1.04E-04	4.91E-04	2.08E-01	1.43E-01	6.30E-01	0.98		
Toluene	108-88-3	92.14	HAP	1.54E-04	4.32E-05	5.96E-05	2.56E-04	1.19E-01	8.65E-02	3.07E-01	0.51	25.0	BELOW
Trichloroethylene	79-01-6	131.39	HAP	1.04E-06	1.46E-06	2.43E-07	2.74E-06	4.87E-04	2.92E-03	2.07E-03	0.01	17.9	BELOW
Xylene (Total)	1330-20-7	106.17	HAP	1.72E-04	1.23E-04	4.00E-05	3.35E-04	8.01E-02	2.46E-01	3.45E-01	0.67	29.0	BELOW

Hourly emissions of largest individual HAP 9.81E-01

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: February 4, 2020

TO: Zach Pierce, Permit Writer, Air Program

FROM: Pao Baylon, Modeling Review Analyst, Air Program

PROJECT: P-2019.0025 PROJ 62239, Initial Permit for an Existing Laundry Facility located in Nampa, Idaho.

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs) as it relates to air quality impact analyses.

Contents

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a non-carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
acfm	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ASOS	Automated Surface Observing System
BMP	Best Management Practices
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
CFR	Code of Federal Regulations
Cintas	Cintas Corporation (permittee)
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon monoxide
DEM	Digital Elevation Map
DEQ	Idaho Department of Environmental Quality
DV	Design Values
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
GEP	Good Engineering Practice
Haley &Aldrich	Haley & Aldrich, Inc. (permittee's permitting and modeling consultant)
HAP	Hazardous Air Pollutant
hr	Hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
lb/hr	Pounds per hour
m	Meters
m/sec	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NED	National Elevation Dataset
NO	Nitrogen oxide
NO_2	Nitrogen dioxide
NOx	Oxides of Nitrogen
NWS	National Weather Service
O_3	Ozone
OLM	Ozone Limiting Method
Pb	Lead

PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	Parts per billion
PRIME	Plume Rise Model Enhancement
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	Potential to Emit
PVMRM	Plume Volume Molar Ratio Method
SIL	Significant Impact Level
SO_2	Sulfur dioxide
TAP	Toxic Air Pollutant
tpy	Tons per year
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compounds
WWT	Wastewater Treatment
°F	Degrees Fahrenheit
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

Cintas Corporation (Cintas) submitted a Permit to Construct (PTC) application for its existing laundering facility located in Nampa, Idaho. The facility has no existing permits. Project-specific air quality analyses involving atmospheric dispersion modeling of estimated emissions associated with the facility were submitted to DEQ to demonstrate that applicable emissions do not result in violation of a National Ambient Air Quality Standard (NAAQS) or Toxic Air Pollutant (TAP) increment as required by the Idaho Administrative Procedures Act 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03). This memorandum provides a summary of the applicability assessment for analyses and air impact analyses used to demonstrate compliance with applicable NAAQS and TAP increments, as required by Idaho Air Rules Section 203.02 and 203.03.

Haley & Aldrich, Inc. (Haley & Aldrich), on behalf of Cintas, prepared the PTC application and performed ambient air impact analyses for this project. DEQ review of submitted data and DEQ analyses summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that estimated emissions associated with operation of the facility will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not address/evaluate compliance with other rules or analyses not pertaining to the air impact analyses. Evaluation of emission estimates was the responsibility of the DEQ permit writer and is addressed in the main body of the DEQ Statement of Basis, and emission calculation methods were not evaluated in this modeling review memorandum.

Table 1 presents key assumptions and results to be considered in the development of the permit. Idaho Air Rules require air impact analyses be conducted in accordance with methods outlined in 40 CFR 51, Appendix W *Guideline on Air Quality Models* (Appendix W). Appendix W requires that air quality impacts be assessed using atmospheric dispersion models with emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

The submitted information and analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emission estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from emissions associated with the project, when appropriately combined with co-contributing sources and background concentrations, were below applicable NAAQS at ambient air locations where and when the project has a significant impact; 5) showed that TAP emission increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments. This conclusion assumes that conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition. The DEQ permit writer should use Table 1 and other information presented in this memorandum to generate appropriate permit provisions/restrictions to assure emissions do not exceed applicable regulatory thresholds requiring further analyses and to assure the requirements of Appendix W are met regarding emissions representative of design capacity or permit allowable rates.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES.	
Criteria/Assumption/Result	**Explanation/Consideration**
General Emission Rates. Emission rates used in the air impact analyses, as listed in Table 5 of this memorandum, must represent maximum potential emissions as given by design capacity, inherently limited by the nature of the process or configuration of the facility, or as limited by the issued permit for the specific pollutant and averaging period.	Compliance has not been demonstrated for emission rates greater than those used in the air impact analyses.
Air Impact Analyses for Criteria Pollutant Emissions. Total allowable emission rates of all criteria pollutants are below levels defined as Below Regulatory Concern (BRC).	Project-specific air impact analyses demonstrating compliance with NAAQS, as required by Idaho Air Rules Section 203.02, are required for pollutant increases above BRC thresholds, or for pollutants having an emission increase that is greater than Level I modeling applicability thresholds (where the BRC exclusion cannot be used).
Air Impact Analyses for TAP Emissions. Allowable emissions of TAPs other than chloroform, methylene chloride, and tetrachloroethylene are below screening emission levels (ELs). Analyses demonstrating compliance with chloroform, methylene chloride, and tetrachloroethylene TAP increments were performed.	A TAP increment compliance demonstration would be required for any TAPs with emissions above ELs.
Approved T-RACT Ambient Impacts. Modeled impacts from methylene chloride are below the AACC, satisfying preconstruction TAP compliance requirements under IDAPA 58.01.01.210. The ambient impacts for chloroform and tetrachloroethylene demonstrate compliance with the Toxic Air Pollutant Reasonably Available Control Technology (T-RACT) allowable increments. T-RACT increments allow a 1 in 100,000 cancer risk versus the 1 in 1,000,000 risk level incorporated in Idaho Air Rules Section 586 and use the maximum ambient impact as the design concentration.	Impacts from chloroform and tetrachloroethylene are both below 10 times the AACCs, and therefore demonstrate preconstruction compliance for air toxics by demonstrating T-RACT. Chloroform Maximum Impact and UTM Coordinates: 0.0690 micrograms per cubic meter, annual average ($\mu g/m^3$, ann. avg.), at a receptor located at 536,972.43 meters (m) Easting and 4,824,158.59 m Northing, NAD83 datum. Tetrachloroethylene Maximum Impact and UTM Coordinates: 2.47 $\mu g/m^3$, ann. avg., at a receptor located at 536,964.89 m Easting and 4,824,158.59 m Northing, NAD83 datum.

[a] Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
[b] Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

Summary of Submittals and Actions

May 23, 2019	Application was received by DEQ.
June 21, 2019	Application was determined incomplete.
July 19, 2019	Applicant responded to DEQ's incompleteness letter.
August 9, 2019	DEQ received supplemental application materials from the applicant.
September 6, 2019	Application was determined incomplete.
October 28, 2019	Applicant responded to DEQ's incompleteness letter.
November 6, 2019	Application was determined incomplete.
December 6, 2019	Applicant responded to DEQ's incompleteness letter and submitted a

T-RACT analysis.

December 18, 2019 Application was determined complete by DEQ.

2.0 Background Information

This section provides background information applicable to the project and the location of the facility. It also provides a brief description of the applicable air impact analyses requirements for the project.

2.1 Project Description

Cintas operates an industrial laundering facility at 2302 E. Railroad St., Nampa, Idaho, chiefly designed to launder uniforms. Pollutant-emitting processes conducted at the facility include washing, drying, and wastewater treatment (WWT). In 2011, the U.S. EPA issued a Testing Order requiring Cintas to conduct stack tests to measure the emissions of volatile organic compounds (VOC) and Hazardous Air Pollutants (HAP) from the laundering of shop towels at its Cumberland, Rhode Island facility. Results of the emission testing indicate that VOCs and HAPs are emitted from washers, dryers, and the WWT system while laundering shop towels. Additionally, in 2017, Cintas performed a comprehensive emission test for particulate from textile drying at its Grand Rapids, Michigan location. The facility has no existing air permits. The PTC addresses all air pollutant-emitting activities associated with the facility.

2.2 Facility Location and Area Classification

The facility is located in Nampa, within Canyon County (Northing: 4,824,200 m; Easting: 536,950 m; UTM Zone 11). This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$). The area is not classified as non-attainment for any criteria pollutants.

2.3 Air Impact Analyses Required for All Permits to Construct

Idaho Air Rules Sections 203.02 and 203.03:

> *No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:*
>
> ***02. NAAQS.*** *The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*
>
> ***03. Toxic Air Pollutants.*** *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Atmospheric dispersion modeling, using computerized simulations, is used to demonstrate compliance with both NAAQS and TAPs. Idaho Air Rules Section 202.02 states:

__02. Estimates of Ambient Concentrations__. All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).

2.4 Significant Impact Level and Cumulative NAAQS Impact Analyses

If specific criteria pollutant emission increases associated with the proposed permitting project cannot qualify for a BRC exemption as per Idaho Air Rules Section 221, then the permit cannot be issued unless the application demonstrates that applicable emission increases will not cause or significantly contribute to a violation of NAAQS, as required by Idaho Air Rules Section 203.02.

The first phase of a NAAQS compliance demonstration is to evaluate whether the proposed facility/project could have a significant impact to ambient air. Section 3.1.1 of this memorandum describes the applicability evaluation of Idaho Air Rules Section 203.02. The Significant Impact Level (SIL) analysis for a new facility or proposed modification to a facility involves modeling estimated criteria air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. Air impact analyses are required by Idaho Air Rules to be conducted in accordance with methods outlined in Appendix W. Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

A facility or modification is considered to have a significant impact on air quality if maximum modeled impacts to ambient air exceed the established SIL listed in Idaho Air Rules Section 006 (referred to as a "significant contribution" in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b. Table 2 lists the applicable SILs.

Table 2. APPLICABLE REGULATORY LIMITS.

Pollutant	Averaging Period	Significant Impact Levels[a] ($\mu g/m^3$)[b]	Regulatory Limit[c] ($\mu g/m^3$)	Modeled Design Value Used[d]
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6[th] highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8[th] highest[j]
	Annual	0.2	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2[nd] highest[n]
	8-hour	500	10,000[m]	Maximum 2[nd] highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4[th] highest[q]
	3-hour	25	1,300[m]	Maximum 2[nd] highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8[th] highest[t]
	Annual	1.0	100[r]	Maximum 1[st] highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1[st] highest[n]
	Quarterly	NA	1.5[r]	Maximum 1[st] highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m. Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w. Annual 4th highest daily maximum 8-hour concentration averaged over three years.

If modeled maximum pollutant impacts to ambient air from the emission sources associated with a new facility or modification exceed the SILs, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (typically the design values consistent with the form of the standard) from potential/allowable emissions resulting from the project and emissions from any nearby co-contributing sources (including existing emissions from the facility that are unrelated to the project), and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-period at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis for the modeling domain.

If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. If project-specific impacts are below the SIL, then the project does not have a significant contribution to the specific violations.

Compliance with Idaho Air Rules Section 203.02 is generally demonstrated if: a) applicable specific criteria pollutant emission increases are at a level defined as BRC, using the criteria established by DEQ regulatory interpretation[1]; or b) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling all emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the total project-wide emission increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emission increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated. If DEQ determines that T-RACT is used to control emissions of carcinogenic TAPs, then modeled concentrations of 10 times the AACCs are considered acceptable, as per Idaho Air Rules Section 210.12.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion.

3.0 Analytical Methods and Data

This section describes the methods and data used in the analyses to demonstrate compliance with applicable air quality impact requirements. The DEQ Statement of Basis provides a discussion of the methods and data used to estimate criteria and TAP emission rates.

3.1 Emission Source Data

Emissions of criteria pollutants and TAPs resulting from operation of the existing facility were estimated by Haley & Aldrich for various applicable averaging periods. The calculation of potential emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emission estimates is not addressed in this modeling memorandum. DEQ air impact analysts are responsible for assuring that potential emission rates provided in the emission inventory are properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emission rates used in the impact modeling applicability analyses and any modeling analyses, as listed in Table 5 of this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emission inventory. All modeled criteria air pollutant and TAP emission rates must be equal to or greater than the facility's potential emissions calculated in the PTC emission inventory or proposed permit allowable emission rates.

3.1.1 Modeling Applicability and Modeled Criteria Pollutant Emission Rates

If project-specific emission increases for criteria pollutants would qualify for a BRC permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more pollutants exceeding the BRC threshold of 10 percent of emissions defined by Idaho Air Rules as significant, then a NAAQS compliance demonstration may not be required for those pollutants with emissions below BRC levels. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant.[1]" The interpretation policy also states that the exemption criteria of uncontrolled potential to emit (PTE) not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year. The BRC exemption cannot be used to exempt a project from a pollutant-specific NAAQS compliance demonstration in most cases where a PTC is required for the action regardless of emission quantities, such as the modification of an existing emission or throughput limit.

A NAAQS compliance demonstration must be performed for pollutant increases that would not qualify for the BRC exemption from the requirement to demonstrate compliance with NAAQS.

Site-specific air impact modeling analyses may not be necessary for some pollutants, even where such emissions do not qualify for the BRC exemption. DEQ has developed modeling applicability thresholds, below which a site-specific modeling analysis is not required. DEQ generic air impact modeling analyses that were used to develop the modeling thresholds provide a conservative SIL analysis for projects with emissions below identified threshold levels. Project-specific modeling applicability thresholds are provided in the *Idaho Air Modeling Guideline*[2]. These thresholds were based on assuring an ambient impact of less than the established SIL for specific pollutants and averaging periods.

If total project-specific emission rate increases of a pollutant are below Level I Modeling Applicability Thresholds, then project-specific air impact analyses are not necessary for permitting. Use of Level II Modeling Applicability Thresholds is conditional, requiring DEQ approval. DEQ approval is based on dispersion-affecting characteristics of the emission sources such as stack height, stack gas exit velocity, stack gas temperature, distance from sources to ambient air, presence of elevated terrain, and potential exposure to sensitive public receptors.

NAAQS compliance demonstrations were not required for this project since the submitted application demonstrated that the project qualified for the BRC NAAQS compliance demonstration exemption. Table

3 provides a comparison between facility-wide allowable emissions and BRC levels.

Table 3. CRITERIA POLLUTANT NAAQS COMPLIANCE DEMONSTRATION APPLICABILITY.			
Criteria Pollutant	**BRC Level (ton/year)**	**Applicable Facility-Wide PTE Emissions (ton/year)**	**Air Impact Analyses Required?**
PM_{10}[a]	1.5	1.37	No
$PM_{2.5}$[b]	1.0	0.97	No
Carbon Monoxide (CO)	10.0	0.84	No
Sulfur Dioxide (SO_2)	4.0	0.01	No
Nitrogen Oxides (NOx)	4.0	1.00	No
Lead (Pb)	0.06	0	No
Volatile Organic Compounds (VOCs)	4.0	1.90	No

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NOx, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses cannot be used to estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource-intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O_3 within the context of permitting a new stationary source has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

> *. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."*
>
> *The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."*

DEQ determined it was not appropriate or necessary to require a quantitative source-specific O_3 impact analysis because allowable emission estimates of VOCs and NOx are below the 100 tons/year threshold. Additionally, both VOC and NOx emissions satisfied BRC exemption criteria.

3.1.2 TAPs Modeling Applicability

TAP emission regulations under Idaho Air Rules Section 210 are only applicable for new or modified sources constructed after July 1, 1995.

Facility-wide emissions of chloroform, methylene chloride, and tetrachloroethylene exceed the applicable screening emission levels (ELs) of Idaho Air Rules Section 586. Chloroform, methylene chloride, and tetrachloroethylene are carcinogenic TAPs that are regulated on a long-term averaging basis. Therefore, the appropriate emission rates for impact analyses are maximum annual emissions, expressed as an average pound/hour value over an 8,760-hour period.

Air impact modeling analyses were then required to demonstrate that maximum impacts of chloroform, methylene chloride, and tetrachloroethylene are below applicable ambient increment standards expressed in Idaho Air Rules Section 586 as AACCs. However, given that the facility is implementing T-RACT, compliance with the toxic standards can be demonstrated by comparison to 10 times the AACCs. T-RACT is applicable only for carcinogenic TAPs.

Table 4 provides a summary of TAP emission increases for the project for those TAPs that had an increase exceeding the ELs of Idaho Air Rules Section 585 or 586. When T-RACT is used, DEQ has determined that compliance with a concentration of 10 times the AACCs is assured if emissions remain below 10 times the ELs. This approach is valid because conservative modeling was used to generate the ELs of Idaho Air Rules Section 586, assuring that impacts are less than AACCs when emissions are less than ELs. Consequently, if emissions are below 10 times the ELs, it is assured that impacts are below 10 times AACCs. Nevertheless, TAPs modeling was performed to verify that maximum modeled impacts are below 10 times the AACCs.

Table 4. TAP EMISSION INCREASES THAT TRIGGER MODELING.

Toxic Air Pollutant	Emissions (lb/hr)[a]	Screening Emission Level (lb/hr)	% of Screening Emission Level
Chloroform[b]	8.20E-04	2.80E-04	293%
Methylene chloride[b]	1.64E-03	1.60E-03	103%
Tetrachloroethylene[b]	3.05E-02	1.30E-02	235%

a. Pounds per hour.
b. Carcinogenic TAP. ELs are annual maximum emissions expressed as pounds/hour. The emission rate is the annual emissions divided by 8,760 hours/year.

Table 5 lists the modeled emission rates used in the TAPs Impact Analyses.

Table 5. MODELED EMISSION RATES FOR TAPS IMPACT ANALYSES.

Source ID	Source Description	Toxic Air Pollutant	Emission Rate (lb/hr)[a]
DRY1	Dryer #1	Chloroform[b]	1.74E-05
		Methylene chloride[b]	1.01E-04
		Tetrachloroethylene[b]	1.91E-03
DRY2	Dryer #2	Chloroform	2.32E-05
		Methylene chloride	1.35E-04
		Tetrachloroethylene	2.55E-03
WWT	Wastewater Treatment Room and Washers	Chloroform	7.79E-04
		Methylene chloride	1.40E-03
		Tetrachloroethylene	2.61E-02

a. Pounds per hour.
b. Carcinogenic TAP. The emission rate is the annual emissions divided by 8,760 hours/year.

3.1.3 Emission Release Parameters

Table 6 lists emission release parameters, including stack height, exhaust temperature, exhaust velocity, and stack diameter for point sources modeled in the air impact analyses, in metric and English units, while Table 7 lists release parameters for the single volume source in the modeling analysis. English units are enclosed in parentheses. Emission release parameters were based on information provided in the application. Justification for emission release parameters is summarized in the next section.

Table 6. POINT SOURCE STACK PARAMETERS IN METRIC UNITS (ENGLISH UNITS ARE ENCLOSED IN PARENTHESES).								
Release Point	Description	UTM[a] Coordinates		Stack Height in m (ft)[b]	Stack Gas Flow Temp. in K (°F)[c]	Stack Gas Flow Velocity in m/sec (fps)[d]	Modeled Stack Diameter in m (ft)	Orient. Of Release[e]
		Easting-X in meters	Northing-Y in meters					
DRY1	Dryer #1	536,945.33	4,824,188.21	9.02 (29.6)	333.15 (140)	0.001 (0.0033)	0.001 (0.0033)	H
DRY2	Dryer #2	536,950.49	4,824,184.84	9.35 (30.7)	333.15 (140)	0.001 (0.0033)	0.001 (0.0033)	H

a. Universal Transverse Mercator.
b. m: meters; ft: feet.
c. K: Kelvin; °F: degrees Fahrenheit.
d. m/sec: meters per second; fps: feet per second.
e. H: horizontal release.

Table 7. VOLUME SOURCE RELEASE PARAMETERS IN METRIC UNITS (ENGLISH UNITS ARE ENCLOSED IN PARENTHESES).						
Source	Description	UTM[a] Coordinates		Release Height in m (ft)[b]	Horizontal Dimension in m (ft)	Vertical Dimension in m (ft)
		Easting - X in meters	Northing - Y in meters			
WWT	Wastewater Treatment Room and Washers	536,946.87	4,824,168.95	3.81 (12.5)	4.55 (14.9)	3.54 (11.6)

a. Universal Transverse Mercator.
b. m: meters; ft: feet.

3.1.4 Emission Release Parameter Justification

Dryers

Model IDs: DRY1, DRY2

DRY1 and DRY2 were modeled with stack heights of 9.02 m (29.6 ft) and 9.35 m (30.7 ft), respectively. Images from Google Earth suggest that the dryer stacks extend approximately 5 feet above the 25-foot building height. Therefore, modeled stack heights for DRY1 and DRY2 are reasonably acceptable.

Both dryers were modeled with an exit temperature of 333.15 Kelvin (140°F) based on stack tests from an equivalent facility in Cumberland, Rhode Island. DEQ performed sensitivity runs using more conservative (i.e., lower) exhaust temperatures and found that the facility is safely below 10 times the AACCs.

The dryers were modeled with stack diameters equal to 0.001 meters and exhaust velocities equal to 0.001 meters/second. By setting the stack diameter and/or exhaust velocity to 0.001, plume rise from hot, buoyant plumes is eliminated. Modeled results are therefore conservative, as emissions from the dryers will not account for plume rise.

Dryer release parameters were appropriately documented and justified.

Wastewater Treatment Room and Washers

Model ID: WWT

Emissions from the washers and the wastewater treatment (WWT) room are released from within the building and do not get released uniformly through any single vent or stack. There are no windows in these spaces, and doors, equipped with door closers, are kept shut. Bay doors are typically kept closed except for deliveries of WWT chemicals. The primary mechanism for release is a cluster of three passive vents located near where the WWT connects with the main building. These emissions were modeled as a single volume source. Although modeling the vents as a volume source may not be conservative, modeled concentrations from the TAPs impact analyses are so far below T-RACT-adjusted increments that compliance is still assured.

The area occupied by wastewater treatment operations and the washers is approximately 4,130 square feet. To represent this area, a side length of 64.25 feet was used. The initial horizontal dimension was calculated by dividing the side length by 4.3. The calculated value is 4.55 meters (14.9 feet).

Building height is 25 feet above ground level. The initial vertical plume dimension was calculated by dividing the building height by 2.15. The calculated value is 3.54 m (11.6 feet).

The release height is typically set to half the building height. WWT was modeled with a release height of 3.81 meters (12.5 feet).

Release parameters for volume source WWT were appropriately documented and justified.

3.2 T-RACT Analysis

The T-RACT analysis submitted by Haley & Aldrich on behalf of Cintas focused on control of VOCs from emission sources associated with shop towel laundering. The emissions of VOCs from the process are relatively small and the portions that are TAPs are even smaller. The submitted application evaluated the technical feasibility of available control technologies such as thermal oxidation, catalytic oxidation, adsorption, condensation and other systems, limitation on throughput and best management practices (BMP), and stripper/washer/condenser system. DEQ determined that BMPs coupled with limitations on production volume are T-RACT for TAPs in Idaho Air Rules Section 586. The T-RACT demonstration that was submitted with the application was approved by DEQ. Review and approval of T-RACT is the responsibility of the permit writer.

3.3 Background Concentrations

Background concentrations are used if a cumulative NAAQS impact analysis is needed to demonstrate compliance with applicable NAAQS. Cumulative NAAQS analyses were not required for this project because emissions of all criteria pollutants were below levels defined as BRC, and as such, a NAAQS compliance demonstration was not required for these emissions.

3.4 Impact Modeling Methodology

This section describes the modeling methods used by the applicant and/or DEQ to demonstrate preconstruction compliance with applicable air quality standards.

3.4.1 General Overview of Impact Analyses

Haley & Aldrich performed the project-specific air pollutant emission inventory and air impact analyses that were submitted with the application. The submitted information/analyses, in combination with results from DEQ's air impact analyses, demonstrate compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 8 provides a brief description of parameters used in the modeling analyses.

Table 8. MODELING PARAMETERS.

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Nampa, Idaho	The area is an attainment or unclassified area for all criteria pollutants.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 19191.
Meteorological Data	Boise surface data; Boise upper air data	See Section 3.4.4 of this memorandum for additional details of the meteorological data.
Terrain	Considered	1/3 arc second National Elevation Dataset (NED) was acquired from the USGS for the surrounding area. AERMAP version 18081 was used to process terrain elevation data for all buildings and receptors. See Section 3.4.5 for more details.
Building Downwash	Considered	See Section 3.4.6.
NOx Chemistry	Not considered	NOx was not modeled because facility-wide emissions qualify for a BRC exemption.
Receptor Grid	**SIL Analysis** SIL Analysis was not performed because facility-wide emissions of all criteria pollutants qualify for a BRC exemption.	
	Cumulative NAAQS Impact Analyses Cumulative NAAQS Impact Analysis was not performed because facility-wide emissions of all criteria pollutants qualify for a BRC exemption.	
	TAPs Analyses The following receptor grid was used in the TAPS Analysis:	
	Grid 1	5-meter spacing along the ambient air boundary.
	Grid 2	25-meter spacing in a 975-meter by 975-meter grid centered on the facility.

3.4.2 Modeling Protocol and Modeling Methodology

No modeling protocol was submitted to DEQ. However, final project-specific modeling and other required impact analyses were generally conducted using data and methods described in the *Idaho Air Quality Modeling Guideline*[2].

3.4.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in Appendix W. The refined, steady-state, multiple-source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight-line trajectory of ISCST3, but it includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

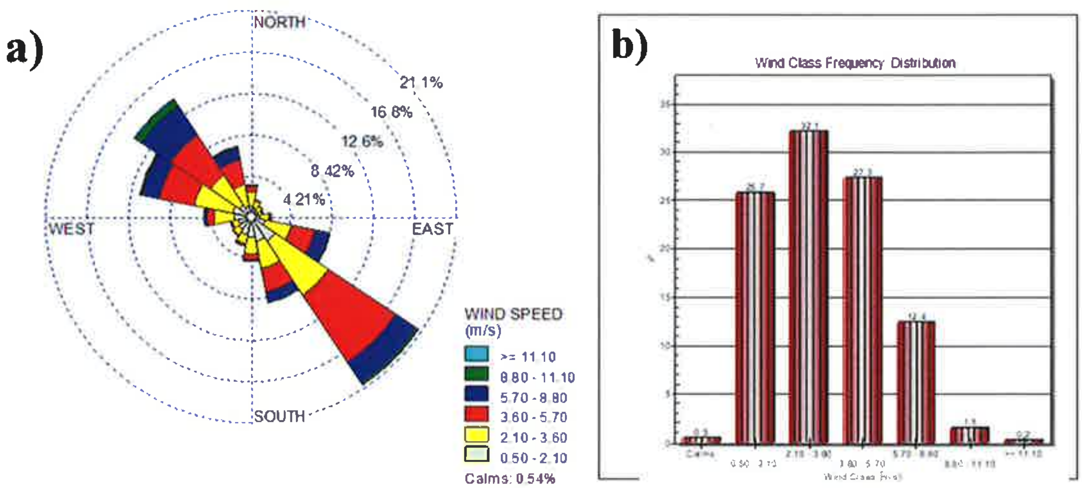
AERMOD version 19191 was used by DEQ for its verification analyses to evaluate impacts of the facility. This version was the current version at the time the revised application was received by DEQ.

3.4.4 Meteorological Data

DEQ processed a meteorological dataset from Boise, Idaho (KBOI; station ID 726810-24131) covering the years 2014-2018. The upper air soundings required by AERMET were obtained from the Boise airport station (site ID 24131). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. DEQ modeling staff evaluated annual moisture conditions for the AERSURFACE runs based on thirty years of Boise airport precipitation data. Conditions were determined to be "wet" for 2014 and 2017, and "average" for 2015, 2016, and 2018. Average moisture content is defined as within a 30 percentile of the 30-year mean of 11.3 inches.

Figure 1 shows a wind rose and wind speed histogram at Boise Airport. On average, winds are dominated by southeasterlies with magnitudes of between 2.10 and 3.60 meters/second. Calms were relatively low at 0.54%, and less than one percent of the data were missing from the five-year record.

Figure 1. (a) WIND ROSE AND (b) WIND SPEED HISTOGRAM AT BOISE AIRPORT IN IDAHO (2014-2018).



AERMINUTE version 15271 was used to process Automated Surface Observing Systems (ASOS) wind data for use in AERMET. AERMET version 19191 was used to process surface and upper air data and to generate a model-ready meteorological data input file. The "adjust u star" (ADJ_U*) option was applied in AERMET to enhance model performance during low wind speeds under stable conditions.

The original application used meteorological data from 2012-2016, processed by DEQ using AERMET version 16216. This was determined to be adequate for minor source permitting at the location of the Cintas facility at the time of submittal. However, DEQ performed verification analyses using the most recent available meteorological data (2014-2018) and most recent version of AERMET (version 19191). All modeling results described in this modeling memo pertain to the meteorological data covering the years 2014-2018, processed by DEQ using AERMET version 19191.

3.4.5 Effects of Terrain on Modeled Impacts

Submitted ambient air impact analyses used terrain data extracted from United States Geological Survey (USGS) National Elevation Dataset (NED) files.

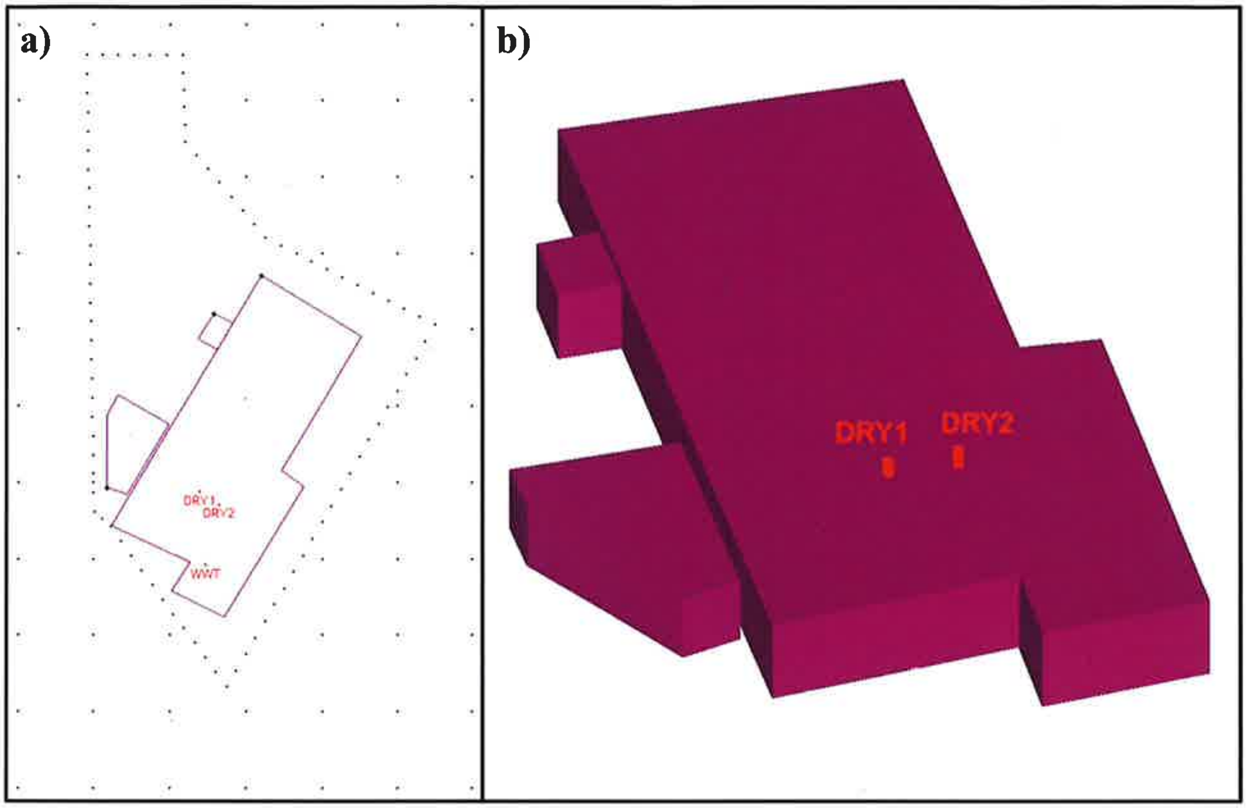
The terrain preprocessor AERMAP version 18081 was used by Haley & Aldrich to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. Figure 2 depicts the full receptor grid used in the modeling analyses, overlaid on a terrain image from Google Earth.

Figure 2. THE FULL RECEPTOR GRID CENTERED AT THE CINTAS FACILITY IN NAMPA, IDAHO.

3.4.6 Facility Layout and Downwash

Figure 3 shows the facility's structures and emission sources in the modeling analyses. Red dots in Figure 3a represent point and volume sources. Figure 3b depicts a three-dimensional view of the modeled buildings and point sources, as viewed from the southwest.

Figure 3. CINTAS MODEL SETUP WITH POINT AND VOLUME SOURCES LABELED.



DEQ verified proper identification of the site location, equipment locations, and the ambient air boundary by comparing a graphical representation of the modeling input file to plot plans submitted in the application. Aerial photographs on Google Earth (available at https://www.google.com/earth) were also used to assure that horizontal coordinates were accurate as described in the application.

Potential downwash effects on emission plumes were accounted for in the model by using building dimensions and locations (locations of building corners, base elevation, and building heights). Dimensions and orientation of proposed buildings were used as input to the Building Profile Input Program for the Plume Rise Model Enhancements downwash algorithm (BPIP-PRIME version 04274) to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information for input to AERMOD.

3.4.7 NOx Chemistry

NOx was not modeled because facility-wide emissions qualify for a BRC exemption from NAAQS demonstration requirements.

3.4.8 Ambient Air Boundary

Ambient air is defined in Section 006 of the Idaho Air Rules as "that portion of the atmosphere, external to buildings, to which the general public has access." To exclude areas of the site from consideration as ambient air, the permittee must have the legal and practical ability to control access to such areas of the site.

Figure 4 shows the ambient air boundary used by Cintas in the modeling analysis. During facility operations, the southwest side of the facility is actively used as an entrance for Cintas fleet vehicles, with each vehicle typically performing at least one drop-off per shift. During active shifts, vehicle operators and other Cintas employees involved in loading/unloading are able to identify pedestrians lingering in the area and direct them elsewhere. During inactive shifts, there would be no emissions of carcinogenic TAPs. To account for the possibility of pedestrian traffic using the accessible parking area as a cutoff from E. Railroad St. to S. Sugar Ave. (and vice versa), the ambient air boundary was modeled to stretch between the southernmost fenceline and the southwest corner of the main building. This boundary is conservative and reasonable as it delineates the area effectively enclosed by the facility's fencing and structures, and it accounts for transitory public pedestrian use. DEQ determined that the ambient air boundary was adequately supported.

Figure 4. CINTAS AMBIENT AIR BOUNDARY.

3.4.9 Receptor Network

Table 8 describes the receptor network used in the submitted modeling analyses. The full grid, along with the fenceline receptors, includes a total of 1,666 receptors (Figure 2). The receptor grids used in the model provided good resolution of the maximum design concentrations for the project and provided extensive coverage. DEQ determined that the receptor grid used in the submitted modeling analyses was adequate to resolve maximum modeled impacts.

The receptor grid used in the submitted modeling analyses met the minimum recommendations specified in the *Idaho Air Quality Modeling Guideline*[2], and DEQ determined that the receptor network was effective in reasonably assuring compliance with applicable air quality standards at all ambient air locations.

3.4.10 Good Engineering Practice Stack Height

An allowable good engineering practice (GEP) stack height may be established using the following equation in accordance with Idaho Air Rules Section 512.03.b:

$H = S + 1.5L$, where:

H = good engineering practice stack height measured from the ground-level elevation at the base of the stack.

S = height of the nearby structure(s) measured from the ground-level elevation at the base of the stack.

L = lesser dimension, height or projected width, of the nearby structure.

All sources from the Cintas facility are below GEP stack height. Therefore, consideration of downwash caused by nearby buildings was required.

4.0 NAAQS and TAPs Impact Modeling Results

4.1 Results for NAAQS Analyses

A NAAQS impact analysis was not performed for the Cintas facility. Idaho Air Rules Section 203.02, requiring air impact analyses demonstrating compliance with NAAQS, is not applicable to pollutants having project emissions increase that are less than BRC levels, provided the project would have qualified for a BRC permitting exemption except for the emissions levels of another criteria pollutant exceeding the ton/year BRC threshold.

4.2 Results for TAPs Impact Analyses

Dispersion modeling for TAPs was required to demonstrate compliance with TAP increments specified by Idaho Air Rules Section 586 for carcinogenic TAPs. This project is expected to cause emission increases that exceed the screening emission levels (ELs) for carcinogenic TAPs only – chloroform, methylene chloride, and tetrachloroethylene. Results of the TAPs impact analyses are listed in Table 9.

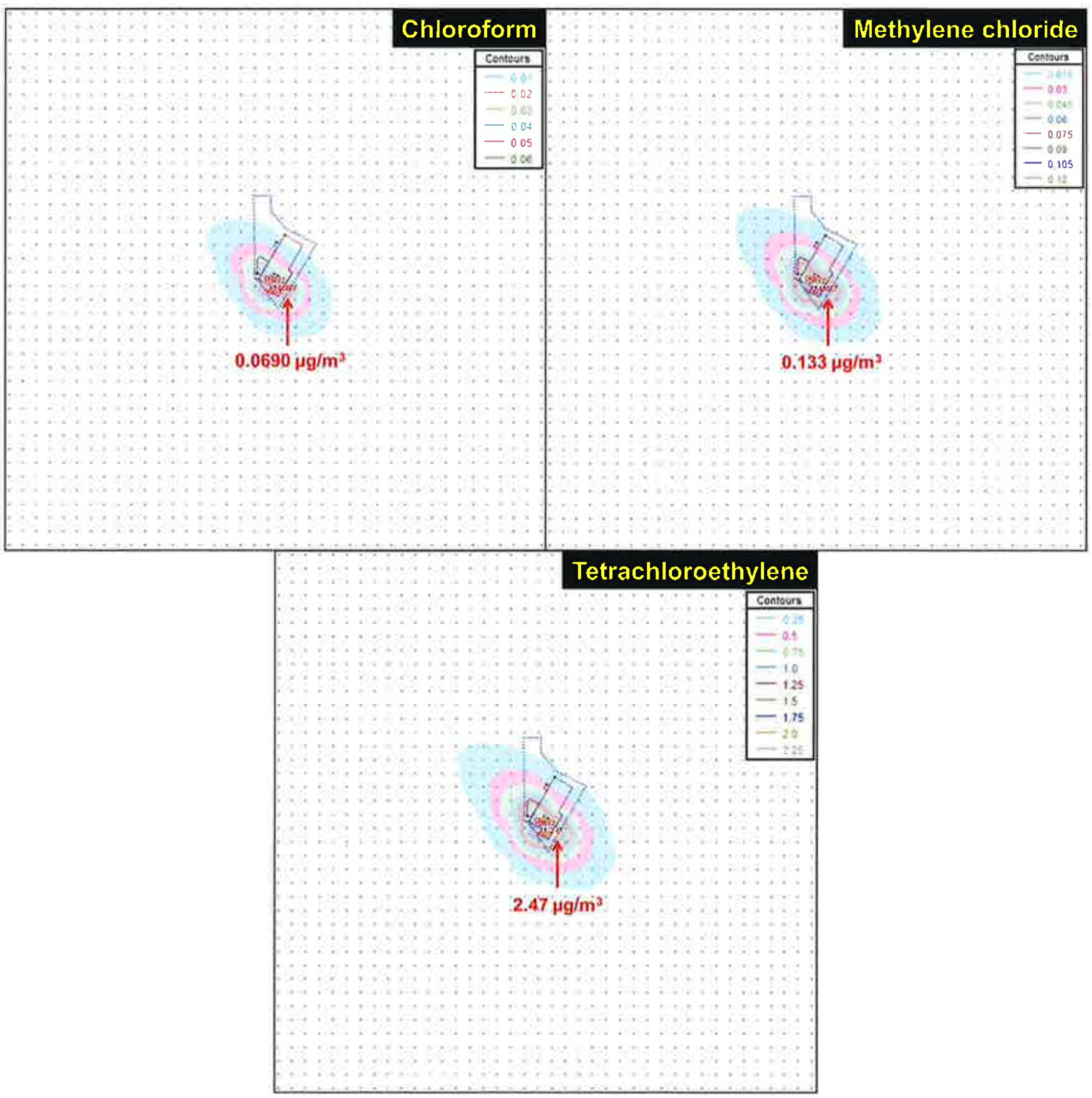
Modeled impacts from methylene chloride are below the AACC. Modeled impacts from chloroform and tetrachloroethylene exceed the AACC. Since DEQ determined that T-RACT will be used to control TAP emissions, concentrations of up to 10 times the AACCs are acceptable as per Idaho Air Rules Section 210.12. Maximum modeled concentrations of all carcinogenic TAPs were well below values of 10 times the AACCs.

Table 9. TAPS AIR IMPACT ANALYSIS RESULTS.					
Toxic Air Pollutant	**Maximum Modeled Concentration (µg/m³)[a]**	**AACC[b] (µg/m³)**	**Percent of AACC**	**T-RACT[c] AACC (µg/m³)**	**Percent of T-RACT AACC**
Chloroform	0.0690	4.30E-02	160%	4.30E-01	16.0%
Methylene chloride	0.133	2.40E-01	55.4%	2.40	5.54%
Tetrachloroethylene	2.47	2.1	118%	21	11.8%

a. Micrograms per cubic meter.
b. Acceptable ambient concentration for carcinogens (AACC). Modeled impact and AACC represent annual or period-average concentration.
c. Toxic Air Pollutant Reasonably Available Control Technology.

Figure 5 show plots of maximum modeled concentrations for the TAPs impact analyses. These plots show that high concentrations are limited to a relatively small area southeast of the facility.

Figure 5. MAXIMUM MODELED CONCENTRATIONS FOR TAPS IMPACT ANALYSES.



5.0 Conclusions

The information submitted with the PTC application, combined with DEQ air impact analyses, demonstrated to DEQ's satisfaction that emissions from the Cintas facility, coupled with its Toxic Air Pollutant Reasonably Available Control Technology, will not cause or significantly contribute to a violation of any applicable ambient air quality standard or TAP increment.

References

1. *Policy on NAAQS Compliance Demonstration Requirements.* Idaho Department of Environmental Quality Policy Memorandum. July 11, 2014.

2. *State of Idaho Guideline for Performing Air Quality Impact Analyses*. Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

3. *Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard.* Office of Air Quality Planning and Standards. Air Quality Modeling Group. Research Triangle Park, NC. Guidance memorandum from R. Chris Owen and Roger Brode to Regional Dispersion Modeling Contacts. September 30, 2014.

APPENDIX C – FACILITY DRAFT COMMENTS

No comments were received from the facility.

APPENDIX D – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

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:	**Cintas Corporation**
Address:	**2302 E. Railroad St.**
City:	**Nampa**
State:	**ID**
Zip Code:	**83687**
Facility Contact:	**Micah Crist**
Title:	**General Manager**
AIRS No.:	**027-000178**

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	1.0	0	1.0
SO_2	0.0	0	0.0
CO	0.8	0	0.8
PM10	1.4	0	1.4
VOC	1.9	0	1.9
Total:	0.0	0	**5.1**
Fee Due	**$ 2,500.00**		

Comments: