

JAN 03 2018

Gurjit Mahil
Aramark Uniform & Career Apparel LLC
7679 S. Longe Street
Stockton, CA 95206

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-4599
Project Number: N-1171225

Dear Mr. Mahil:

Enclosed for your review and comment is the District's analysis of Aramark Uniform & Career Apparel LLC's application for an Authority to Construct for a commercial laundry operation consisting of fifteen washers, fifteen laundry dryers, and wastewater treatment system for the laundering of soiled shop towels and use of VOC containing detergents, at 7679 S. Longe Street in Stockton, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Kai Chan of Permit Services at (209) 557-6451.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:kc

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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4800 Enterprise Way
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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Commercial Shop Towel and Laundry Washing and Drying Operations

Facility Name: Aramark Uniform & Career Apparel LLC Date: December 20, 2017
Mailing Address: 7679 S. Longe Street Engineer: Kai Chan
Stockton, CA 95206 Lead Engineer: Nick Peirce
Contact Person: Patricia Stickney of Short Elliott Hendrickson (Consultant)
Telephone: (608) 239-2998
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Facility Contact: Gurjit Mahil (Plant Manager)
Telephone: (209) 234-0105
E-Mail: mahil-gurjit@aramark.com
Application #(s): N-4599-3-0, through '-18-0
Project #: N-1171225
Deemed Complete: June 26, 2017

I. Proposal:

Aramark Uniform & Career Apparel LLC is requesting District permits for their existing commercial laundering operations with nine washing machines and associated waste water treatment system along with twenty-three laundry dryers. These laundry dryers were previously exempt per District determination on Aug. 4th 2014. However, the exemptions were based on daily laundry loads limits, which the applicant is proposing to exceed and waive the exemptions. The applicant is proposing to utilize VOC containing detergents to launder soiled shop towels and is also proposing to install six new washers and four new laundry dryers, which will also be used for the processing of shop towels.

This facility also operates one laundry steam tunnel served by a 1.5 MMBtu/hr Leonard natural gas-fired dryer, twelve 1.5 MMBtu/hr Lavatech natural gas-fired laundry dryers (D7 thru D18), and three 0.395 MMBtu/hr Unimac Pony natural gas-fired laundry dryers (D23 thru D25), all of which are exempt from District permits as "low-emitting units" per Rule 2020, Section 6.19. as determined in Section VIII. under District Rule 2020 (Exemptions) of this document.

II. Applicable Rules:

Rule 2020: Exemptions (12/17/14)
Rule 2201: New and Modified Stationary Source Rule (4/21/11)
Rule 2410: Prevention of Significant Deterioration (11/26/12)
Rule 2520: Federally Mandated Operating Permits (6/21/01)
Rule 4001: New Source Performance Standards (4/14/99)
Rule 4002: National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101: Visible Emissions (2/17/05)
Rule 4102: Nuisance (12/17/92)
Rule 4201: Particulate Matter Concentration (12/17/92)
Rule 4202: Particulate Matter – Emission Rate (12/17/92)

Rule 4301: Fuel Burning Equipment (12/17/92)
Rule 4309: Dryers, Dehydrators, and Ovens (12/15/05)
Rule 4801 Sulfur Compounds (12/17/92)
California Health & Safety Code 41700 - Health Risk Assessment
California Health & Safety Code 42301.6 - School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location:

The equipment will be operated at 7679 S. Longe Street in Stockton, CA. This facility and its associated equipment are not located within 1,000 feet of a K-12 School. Therefore, the public noticing requirement of California Health and Safety Code 42301.6 is not required for this project.

IV. Process Description:

Aramark Uniform & Career Apparel, LLC (Aramark) is primarily a uniform and career apparel rental business that provides uniforms in the manufacturing, healthcare, food processing, and service industries. This facility in Stockton provides commercial laundering services primarily for the healthcare industry, which launders uniforms, healthcare scrubs, entrance mats, food grade towels, napkins, table linens, and shop towels. A shop towel is a piece of cotton fabric or other material that is used to clean equipment, parts, objects or surfaces of general soil, grease or oil and may contain small amounts of solvents. This facility does not launder printer towels, furniture rags, or other solvent laden towels.

Soiled laundry is delivered to the facility in trucks and unloaded in the unloading bay where it is sorted into slings or totes. When a sling or tote is full of a particular type of laundry it is weighed and raised onto an overhead conveyor where it is conveyed to the washing machines and staged for laundering. The appropriate computer-controlled wash formula is selected by the operator. The wash formula determines the water volume and temperature, detergent type and quantity, and wash time. The soiled laundry is then loaded in the washing machine and washed with the selected detergent and hot water. Washing times vary depending on the type of laundry being washed. After the wash cycle, the clean wet laundry is placed into slings or totes and transferred to the appropriate dryer for drying. The clean dry laundry is then sorted for delivery to the customer.

Wastewater generated by the washing machines from the laundering process is discharged into trenches beneath the wash alley and flows to the wastewater treatment area. When laundering shop towels, the wastewater is discharged into the trench under the washer that leads to the process wastewater pit. The water is pumped through a screen for removal of large solids and fibrous material, through a heat exchanger, and into the process equalization (EQ) tank, where it is pH adjusted if necessary. From here the wastewater is pumped to the Dissolved Air Flotation (DAF) system where it is chemically treated for further removal of contaminants and to the final EQ tank. pH is monitored and may be adjusted before discharge to the City sewer system. Wastewater sludge skimmed from the DAF system is stored and hauled away.

PM₁₀ will be emitted from the lint filters associated with the laundry dryers and NO_x, CO, VOC, PM₁₀, and SO_x will also be emitted from the combustion of natural gas by the laundry dryers and steam tunnel dryers. VOC and HAPs will be emitted only from the processing of the solvent laden shop towels from the VOC containing detergents, washing machines, wastewater settling pit, and wastewater treatment room.

Operating Schedule & Process Rates:

The proposed laundry operations may operate up to 24 hrs/day and 365 days/year at the following processing rates as summarized in the following table:

ATC Permit No.	Process Rates
N-4599-3-0 (D1) N-4599-4-0 (D2) N-4599-5-0 (D3) N-4599-6-0 (D4) N-4599-7-0 (D5) N-4599-8-0 (D6)	Laundry Processing Rates: 12.72 tons/day and 4,642.8 tons/year (Based on a processing rate of 0.53 tons/hr, and operating 24 hr/day and 365 days/year) Proposed Dryer Heat Input Rates: 27.3 MMBtu/day and 9,965 MMBtu/year
N-4599-9-0 (D19) N-4599-10-0 (D20) N-4599-11-0 (D21) N-4599-12-0 (D22)	Laundry Processing Rates: 2.64 tons/day and 963.6 tons/year (Based on a processing rate of 0.11 tons/hr, and operating 24 hr/day and 365 days/year) Dryer Heat Input Rates: 38.4 MMBtu/day and 14,016 MMBtu/year (Based on a heat input rate of 1.6 MMBtu/hr, and operating 24 hr/day and 365 days/year)
N-4599-13-0 (D26)	Laundry Processing Rates: 15.6 tons/day and 5,694.0 wet tons/year (Based on a processing rate of 0.65 tons/hr, and operating 24 hr/day and 365 days/year) Soiled Shop Towel Processing Rates: 38,400 lb/day (Based on a processing rate of 1,600 lb/hr and operating 24 hr/day) and 1,450,000 lb/year (SLC) Dryer Heat Input Rates: 45.6 MMBtu/day and 16,644 MMBtu/year (Based on a heat input rate of 1.9 MMBtu/hr, and operating 24 hr/day and 365 days/year)
N-4599-14-0 (D27) N-4599-15-0 (D28)	Laundry Processing Rate: 8.64 tons/day and 3,153.6 tons/year (Based on a processing rate of 0.36 tons/hr, and operating 24 hr/day and 365 days/year) Soiled Shop Towel Processing Rates: 21,600 lb/day (Based on a processing rate of 900 lb/hr and operating 24 hr/day) and 1,450,000 lb/year (SLC) Dryer Heat Input Rates: 43.2 MMBtu/day and 15,768 MMBtu/year (Based on a heat input rate of 1.8 MMBtu/hr, and operating 24 hr/day and 365 days/year)
N-4599-16-0 (D29) N-4599-17-0 (D30)	Laundry Processing Rate: 13.2 tons/day and 4,818.0 tons/year (Based on a processing rate of 0.55 tons/hr, and operating 24 hr/day and 365 days/year) Soiled Shop Towel Processing Rates: 32,400 lb/day (Based on a processing rate of 1,350 lb/hr and operating 24 hr/day) and 1,450,000 lb/year (SLC) Dryer Heat Input Rates: 43.2 MMBtu/day and 15,768 MMBtu/year (Based on a heat input rate of 1.8 MMBtu/hr, and operating 24 hr/day and 365 days/year)

N-4599-18-0	Soiled Shop Towels Processing Rate: 146,400 lb/day & 1,450,000 lb/year VOC Containing Detergent Usage Rate: 137 gal/day & 35,000 gal/year VOC Containing Detergent Booster Usage Rate: 12 gal/day & 1,500 gal/year
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V. Equipment Listing:

Permit Description:

- N-4599-3-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer (0.53 ton/hr capacity) with an on-board lint screen (D1).
- N-4599-4-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer (0.53 ton/hr capacity) with an on-board lint screen (D2).
- N-4599-5-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer (0.53 ton/hr capacity) with an on-board lint screen (D3).
- N-4599-6-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer (0.53 ton/hr capacity) with an on-board lint screen (D4).
- N-4599-7-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer (0.53 ton/hr capacity) with an on-board lint screen (D5).
- N-4599-8-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer (0.53 ton/hr capacity) with an on-board lint screen (D6).
- N-4599-9-0:** Laundry drying operation consisting of one 1.6 MMBtu/hr Jenson Model DTX140 natural gas-fired dryer (0.11 ton/hr capacity) with a Jensen Model DT140 low NOx burner and on-board lint screen (D19).
- N-4599-10-0:** Laundry drying operation consisting of one 1.6 MMBtu/hr Jenson Model DTX140 natural gas-fired dryer (0.11 ton/hr capacity) with a Jensen Model DT140 low NOx burner and on-board lint screen (D20).
- N-4599-11-0:** Laundry drying operation consisting of one 1.6 MMBtu/hr Jenson Model DTX140 natural gas-fired dryer (0.11 ton/hr capacity) with a Jensen Model DT140 low NOx burner and on-board lint screen (D21).
- N-4599-12-0:** Laundry drying operation consisting of one 1.6 MMBtu/hr Jenson Model DTX140 natural gas-fired dryer (0.11 ton/hr capacity) with a Jensen Model DT140 low NOx burner and on-board lint screen (D22).
- N-4599-13-0:** Laundry drying operation consisting of one 1.9 MMBtu/hr Jenson Model DTX800 natural gas-fired dryer (0.65 ton/hr capacity) with a Jensen Model T444 low NOx burner and on-board lint screen (D26). This unit may be used to dry laundered shop towels.
- N-4599-14-0:** Laundry drying operation consisting of one 1.8 MMBtu/hr Ellis Model 450 WD7664 natural gas-fired dryer (0.36 ton/hr capacity) with a Maxon Ovenpak LE low NOx burner and on-board lint screen (D27). This unit may be used to dry laundered shop towels.

N-4599-15-0: Laundry drying operation consisting of one 1.8 MMBtu/hr Ellis Model 450 WD7664 natural gas-fired dryer (0.36 ton/hr capacity) with a Maxon Ovenpak LE low NOx burner and on-board lint screen (D28). This unit may be used to dry laundered shop towels.

N-4599-16-0: Laundry drying operation consisting of one 1.8 MMBtu/hr Ellis Model 675 WD7673 natural gas-fired dryer (0.55 ton/hr capacity) with a Maxon Ovenpak LE low NOx burner and on-board lint screen (D29). This unit may be used to dry laundered shop towels.

N-4599-17-0: Laundry drying operation consisting of one 1.8 MMBtu/hr Ellis Model 675 WD7673 natural gas-fired dryer (0.55 ton/hr capacity) with a Maxon Ovenpak LE low NOx burner and on-board lint screen (D30). This unit may be used to dry laundered shop towels.

N-4599-18-0: Laundering operation consisting of fifteen washing machines, wastewater settling pit with waste screen, and wastewater treatment system.

VI. Emission Control Technology Evaluation:

N-4599-3-0, '-4-0, '-5-0, '-6-0, '-7-0, and '-8-0:

There will be NO_x, VOC, CO, PM₁₀, and SO_x emissions due to the combustion of natural gas in these dryers. The dryers will be fired exclusively on PUC quality natural gas, which results in cleaner emissions than other hydrocarbon fuels. Per the equipment manufacturer, the dryer will be equipped with a burner system that can achieve a maximum NO_x emissions rate of 0.073 lb-NO_x/MMBtu (60 ppmvd @ 3% O₂) and a CO emission rate of 0.111 lb/MMBtu (150 ppmvd @ 3% O₂). PM₁₀ will also be emitted due to the lint in the materials dried in these units and will be controlled with onboard lint filters operating with a control efficiency of at least 99%.

N-4599-9-0, '-10-0, '-11-0, '-12-0, and '-13-0:

There will be NO_x, VOC, CO, PM₁₀, and SO_x emissions due to the combustion of natural gas in these dryers. The dryers will be fired exclusively on PUC quality natural gas, which results in cleaner emissions than other hydrocarbon fuels. Per the equipment manufacturer, the dryer will be equipped with a burner system that can achieve a maximum NO_x emissions rate of 0.0364 lb-NO_x/MMBtu (30 ppmvd @ 3% O₂) and a CO emission rate of 0.222 lb/MMBtu (300 ppmvd @ 3% O₂). PM₁₀ will also be emitted due to the lint in the materials dried in these units and will be controlled with onboard lint filters operating with a control efficiency of at least 99%.

For ATC permit N-4599-13-0, when drying laundered shop towels VOC and HAPs will also be emitted and no emissions control equipment is proposed for these emissions.

N-4599-14-0, '-15-0, '-16-0, and '-17-0:

There will be NO_x, VOC, CO, PM₁₀, and SO_x emissions due to the combustion of natural gas in these dryers. The dryers will be fired exclusively on PUC quality natural gas, which results in cleaner emissions than other hydrocarbon fuels. Per the equipment manufacturer, the dryer will be equipped with a burner system that can achieve a maximum NO_x emissions rate of

0.0364 lb-NO_x/MMBtu (30 ppmvd @ 3% O₂) and a CO emission rate of 0.084 lb/MMBtu. PM₁₀ will also be emitted due to the lint in the materials dried in these units and will be controlled with onboard lint filters operating with a control efficiency of at least 99%.

When drying laundered shop towels VOC and HAPs will also be emitted and no emissions control equipment is proposed for these emissions.

N-4599-18-0:

There will be VOC and HAPs emitted from the washing machines, wastewater settling pit, and wastewater treatment room when processing soiled shop towels, and when using VOC containing detergents and detergent boosters. The soiled shop towels received for washing are received and stored in air-tight bags prior to washing to minimum these fugitive emissions prior to washing. No other emissions control is being proposed for this operation.

VII. General Calculations:

A. Assumptions:

N-4599-3-0, '-4-0, '-5-0, '-6-0, '-7-0, '-8-0, '-9-0, '-10-0, '-11-0, and '-12-0:

1. PM₁₀ will be emitted from the drying of soiled laundry through the lint filters associated with the laundry dryers, and NO_x, CO, VOC, PM₁₀, and SO_x will also be emitted from the combustion of natural gas in the laundry dryers.
2. The laundry dryers will only be fired on PUC-regulated natural gas.
3. Natural gas heating value of 1,000 Btu/scf (District Practice).

N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0:

1. PM₁₀ will be emitted from the drying of soiled laundry through the lint filters associated with the laundry dryers, and NO_x, CO, VOC, PM₁₀, and SO_x will also be emitted from the combustion of natural gas in the laundry dryers.
2. VOC and HAPs will be emitted from the processing of soiled shop towels.
3. The laundry dryers will only be fired on PUC-regulated natural gas.
4. Natural gas heating value of 1,000 Btu/scf (District Practice).

N-4599-18-0:

1. VOC and HAPs will be emitted from the washing machines, wastewater settling pit, and wastewater treatment room from the use of VOC containing detergents and when processing soiled shop towels.
2. Since the soiled shop towels are received in sealed air-tight bags, no VOC and HAPs will be emitted from the soiled shop towels prior to washing.

B. Emission Factors:

PM₁₀ Emissions from the Lint Filters serving the Laundry Dryers:

PM₁₀ emissions from the lint filters serving the laundry dryers as proposed by the applicant and are based on a source test provided by the applicant performed at an Aramark Uniform Services facility located at Waterloo, IA on April 17 & 18, 2003. The highest emission factors as determined from this source test will be used with a 50% margin of compliance factor as proposed by the applicant and includes PM₁₀ emissions from natural gas combustion as indicated below:

$EF_{PM10/Lint\ Filters} = 0.13\ lb\text{-}PM_{10}/\text{ton of laundry dried}$

VOC and HAP Emissions from the Drying of the Soiled Shop Towels:

The EFs for VOC and HAP emissions from the drying of laundered soiled shop towels are based on a source test provided by the applicant and conducted on Oct. 25, 2013 at Aramark Uniform & Career Apparel, LLC Sacramento, CA facility. The highest emission factors as determined from this source test will be used with a 50% margin of compliance factor as proposed by the applicant. The EFs as listed in the following table:

Soiled Shop Towel Emission Factors ($EF_{Shop\ Towels\ Drying}$)		
Pollutant	$EF_{Shop\ Towels\ Drying}$	Source
VOC	0.00201 lb-VOC/lb of shop towels processed	Applicant's provided source test results (10/25/13).
HAPs	0.0000696 lb-HAPs/lb of shop towels processed	Applicant's provided source test results (10/25/13).

Emissions from the Combustion of Natural Gas in the 1.8 MMBtu/hr Milnor Model 6464 Laundry Dryers (D1 through D6):

For these laundry dryers, the emission factors (EFs) for the combustion of natural gas for NOx and CO are based on information provided by the application from the equipment manufacturer. VOC will be based on the applicant's proposed emission rates from USEPA AP-42, Table 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated above. The EF for SOx, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors ($EF_{Natural\ Gas}$)		
Pollutant	$EF_{Natural\ Gas}$	Source
NOx	0.073 lb/MMBtu (60 ppmvd @ 3% O ₂)	Equipment Manufacturer.
CO	0.111 lb/MMBtu (150 ppmvd @ 3% O ₂)	Equipment Manufacturer.
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SOx	0.00285 lb/MMBtu	District Policy APR-1720

Emissions from the Combustion of Natural Gas in the 1.6 MMBtu/hr Jenson Model DTX140 Laundry Dryers (D19 thru D22):

For these laundry dryers, the emission factors (EFs) for the combustion of natural gas for NOx and CO are based on information provided by the application from the equipment manufacturer. VOC will be based on the applicant's proposed emission rates from USEPA AP-42, Table 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated above. The EF for SOx, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF_{Natural Gas})		
Pollutant	EF_{Natural Gas}	Source
NO _x	0.0364 lb/MMBtu (30 ppmvd @ 3% O ₂)	Equipment Manufacturer.
CO	0.222 lb/MMBtu (300 ppmvd @ 3% O ₂)	Equipment Manufacturer.
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SO _x	0.00285 lb/MMBtu	District Policy APR-1720

Emissions from the Combustion of Natural Gas in the 1.9 MMBtu/hr Jenson Model DTX800 Laundry Dryers (D26):

For these laundry dryers, the emission factors (EFs) for the combustion of natural gas for NO_x and CO are based on information provided by the application from the equipment manufacturer. VOC will be based on the emission rates from USEPA AP-42, Table 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated above. The EF for SO_x, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF_{Natural Gas})		
Pollutant	EF_{Natural Gas}	Source
NO _x	0.0364 lb/MMBtu (30 ppmvd @ 3% O ₂)	Equipment Manufacturer.
CO	0.222 lb/MMBtu (300 ppmvd @ 3% O ₂)	Equipment Manufacturer.
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SO _x	0.00285 lb/MMBtu	District Policy APR-1720

Emissions from the Combustion of Natural Gas in the 1.8 MMBtu/hr Ellis Model 450 WD7664 Laundry Dryers (D27 & D28):

For these laundry dryers, the emission factors (EFs) for the combustion of natural gas for NO_x are based on information provided by the application from the equipment manufacturer. CO and VOC will be based on the emission rates from USEPA AP-42, Tables 1.4-1 and 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated above. The EF for SO_x, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF_{Natural Gas})		
Pollutant	EF_{Natural Gas}	Source
NO _x	0.0364 lb/MMBtu (30 ppmvd @ 3% O ₂)	Equipment Manufacturer.
CO	0.084 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-1 (7/98).
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SO _x	0.00285 lb/MMBtu	District Policy APR-1720

Emissions from the Combustion of Natural Gas in the 1.8 MMBtu/hr Ellis Model 675 WD7673 Laundry Dryers (D29 & 30):

For these laundry dryers, the emission factors (EFs) for the combustion of natural gas for NO_x are based on information provided by the application from the equipment manufacturer. CO and VOC will be based on the emission rates from USEPA AP-42, Tables 1.4-1 and 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated above. The EF for SO_x, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF_{Natural Gas})		
Pollutant	EF_{Natural Gas}	Source
NO _x	0.0364 lb/MMBtu (30 ppmvd @ 3% O ₂)	Equipment Manufacturer.
CO	0.084 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-1 (7/98).
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SO _x	0.00285 lb/MMBtu	District Policy APR-1720

VOC and HAP Emissions from the Washing Machines, Wastewater Settling Pit, and Wastewater Treatment Room during the processing of the Soiled Shop Towels:

The EFs for VOC and HAP emissions from the washing of soiled shop towels, waste water treatment (WWT) system, and other fugitive sources are based on a source test provided by the applicant and conducted on Oct. 25, 2013 at Aramark Uniform & Career Apparel, LLC Sacramento, CA facility. The highest emission factors as determined from this source test will be used with a 50% margin of compliance factor as proposed by the applicant. In addition, the soiled shop towel emission factors are the combined total from the washing machines, settling pit, and wastewater treatment room:

Soiled Shop Towel Emission Factors (EF_{Shop Towels Washing})		
Pollutant	EF_{Shop Towels Washing}	Source
VOC (Washers)	0.00006 lb-VOC/lb of shop towels processed	Applicant's provided source test results (10/25/13).
VOC (WWT)	0.0001 lb-VOC/lb of shop towels processed	Applicant's provided source test results (10/25/13).
VOC (Fugitives)	0.00033 lb-VOC/lb of shop towels processed	Applicant's provided source test results (10/25/13).
HAPs (Washers, WWT, & Fugitives)	0.0000208 lb-HAPs/lb of towels processed	Applicant's provided source test results (10/25/13).

VOC Emissions from the Usage of VOC containing Detergents and Detergent Boosters:
EFs for VOC emissions from the usage of VOC containing detergents and detergent boosters will be based on the VOC content of the proposed detergent and booster based on the provided Safety Data Sheet (SDS) from the manufacturer as listed in the following table:

Detergent & Detergent Booster VOC Content (EF_{Detergent & Booster Usage})		
Detergent	EF_{Detergent & Booster}	Source
TCX-0L123 (Detergent)	0.064 lb-VOC/gallon	Manufacturer's provided SDS.
TCX-6L125 (Booster)	1.40 lb-VOC/gallon	Manufacturer's provided SDS.

C. Calculations:

1. Pre-Project Potential to Emit (PE1):

Daily and Annual PE1 Calculations:

N-4599-3-0 through '-18-0:

Since these units are considered to be new emissions unit the daily and annual pre-project potential to emit (PE1) are equal to zero for each affected pollutant.

2. Post-Project Potential to Emit (PE2):

Daily and Annual PE2 Calculations:

N-4599-3-0, '-4-0, '-5-0, '-6-0, '-7-0 and '-8-0:

PM₁₀ Emissions from the Lint Filters:

Emissions from the lint filters are based on the applicant's proposed laundry drying rate of 12.72 tons/day and 4,642.8 tons/year. Therefore:

$$PE2_{PM10/Lint\ Filters} = \text{Laundry Drying Rate (tons/day or tons/year)} \\ \times EF_{PM10/Lint\ Filters} \text{ (lb-PM}_{10}\text{/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM10/day)	Annual PE2 _{PM10/Lint Filter} (lb-PM10/year)
	tons/day	tons/year			
PM ₁₀	12.72	4,642.8	0.13	1.65	603.6

Emissions due to the combustion of Natural Gas from the 1.8 MMBtu/hr Laundry Dryer:

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 27.3 MMBtu/day and 9,965 MMBtu/year. Therefore:

$$PE2_{\text{Natural Gas}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times \text{EF lb/MMBtu}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Natural Gas} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	27.3	9,965	0.073	2.0	727.4
CO	27.3	9,965	0.111	3.0	1,106.1
VOC	27.3	9,965	0.0055	0.15	54.8
SOx	27.3	9,965	0.00285	0.078	28.4

Combined Total PE2 from each Laundry Drying Operations D1 thru D6:

$$\text{Daily PE2}_{N-4599-3-0 \text{ thru } '-8-0} = \text{Daily PE2}_{\text{PM10/Lint Filters}} + \text{Daily PE2}_{\text{Natural Gas}}$$

$$\text{Annual PE2}_{N-4599-3-0 \text{ thru } '-8-0} = \text{Annual PE2}_{\text{PM10/Lint Filters}} + \text{Annual PE2}_{\text{Natural Gas}}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 _{Natural Gas} (lb/day)	Daily PE2 _{N-4599-3-0 thru '-8-0} (lb/day)
NOx	0	2.0	2.0
CO	0	3.0	3.0
VOC	0	0.15	0.2
PM ₁₀	1.65	0	1.7
SOx	0	0.078	0.1

Pollutant	Annual PE2 _{Lint Filters} (lb/year)	Annual PE2 _{Natural Gas} (lb/year)	Annual PE2 _{N-4599-3-0 thru '-8-0} (lb/year)
NOx	0	727.4	727
CO	0	1,106.1	1,106
VOC	0	54.8	55
PM ₁₀	603.6	0	604
SOx	0	28.4	28

N-4599-9-0, '-10-0, '-11-0, and '-12-0:

PM₁₀ Emissions from the Lint Filters:

Emissions from the lint filters are based on the applicant's proposed laundry drying rate of 2.64 tons/day and 963.6 tons/year. Therefore:

$$PE2_{\text{PM10/Lint Filters}} = \text{Laundry Drying Rate (tons/day or tons/year)} \times \text{EF}_{\text{PM10/Lint Filters}} \text{ (lb-PM10/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /day)	Annual PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /year)
	tons/day	tons/year			
PM ₁₀	2.64	963.6	0.13	0.34	125.3

Emissions due to the combustion of Natural Gas from the 1.6 MMBtu/hr Laundry Dryer:

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 38.4 MMBtu/day and 14,016 MMBtu/year. Therefore:

$$PE2_{\text{Natural Gas}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times \text{EF lb/MMBtu}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Natural Gas} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	38.4	14,016	0.0364	1.40	510.2
CO	38.4	14,016	0.222	8.52	3,111.6
VOC	38.4	14,016	0.0055	0.21	77.1
SOx	38.4	14,016	0.00285	0.11	39.9

Combined Total PE2 from each Laundry Drying Operations D19 thru D22:

$$\text{Daily PE2}_{N-4599-9-0 \text{ thru } '12-0} = \text{Daily PE2}_{PM10/Lint Filters} + \text{Daily PE2}_{\text{Natural Gas}}$$

$$\text{Annual PE2}_{N-4599-9-0 \text{ thru } '12-0} = \text{Annual PE2}_{PM10/Lint Filters} + \text{Annual PE2}_{\text{Natural Gas}}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 _{Natural Gas} (lb/day)	Daily PE2 _{N-4599-9-0 thru '12-0} (lb/day)
NOx	0	1.40	1.4
CO	0	8.52	8.5
VOC	0	0.21	0.2
PM ₁₀	0.34	0	0.3
SOx	0	0.11	0.1

Pollutant	Annual PE2 _{Lint Filters} (lb/year)	Annual PE2 _{Natural Gas} (lb/year)	Annual PE2 _{N-4599-9-0 thru '12-0} (lb/year)
NOx	0	510.2	510
CO	0	3,111.6	3,112
VOC	0	77.1	77
PM ₁₀	125.3	0	125
SOx	0	39.9	40

N-4599-13-0:

PM₁₀ Emissions from the Lint Filter:

Emissions from the lint filter is based on the applicant's proposed laundry drying rate of 15.6 tons/day and 5,694.0 tons/year. Therefore:

$$PE2_{PM10/Lint Filters} = \text{Laundry Drying Rate (tons/day or tons/year)} \times \text{EF}_{PM10/Lint Filters} \text{ (lb-PM}_{10}\text{/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/wet ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /day)	Annual PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /year)
	tons/day	tons/year			
PM ₁₀	15.6	5,694.0	0.13	2.0	740.2

VOC & HAP Emissions from the Drying of the Laundered Shop Towels:

Emissions from the drying of the laundered shop towels is based on a maximum annual processing rate of 38,400 lb/day and 377,000 lb/year based on a combined annual limit of 1,450,000 lb/year (SLC) for all five shop towel drying operations. It is assumed that this unit will emit 26% of the combined annual limit of 1,450,000 lb/year (SLC). Therefore:

$$PE2_{VOC/Shop\ Towels} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \\ \times EF_{VOC/Shop\ Towels\ Drying} \text{ (lb-VOC/lb of towels processed)}$$

$$PE2_{HAPs/Shop\ Towels} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \\ \times EF_{HAPs/Shop\ Towels\ Drying} \text{ (lb-HAPs/lb of towels processed)}$$

Pollutant	EF _{Shop Towels Drying} (lb/lb-towels processed)	Daily PE2 _{Shop Towels Drying}	Annual PE2 _{Shop Towels Drying}
VOC	0.00201	77.18 lb-VOC/day	757.7 lb-VOC/year
HAPs	0.0000696	2.67 lb-HAPs/day	26.2 lb-HAPs/year

Emissions due to the combustion of Natural Gas from the 1.9 MMBtu/hr Laundry Dryer:

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 45.6 MMBtu/day and 16,644 MMBtu/year. Therefore:

$$PE2_{Natural\ Gas} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times EF \text{ lb/MMBtu}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Natural Gas} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	45.6	16,644	0.0364	1.66	605.8
CO	45.6	16,644	0.222	10.12	3,695.0
VOC	45.6	16,644	0.0055	0.25	91.5
SOx	45.6	16,644	0.00285	0.13	47.4

Combined Total PE2 from the Laundry Drying Operation D26:

$$\text{Daily PE2}_{N-4599-13-0} = \text{Daily PE2}_{PM10/Lint\ Filters} + \text{Daily PE2}_{VOC/Shop\ Towels} \\ + \text{Daily PE2}_{Natural\ Gas}$$

$$\text{Annual PE2}_{N-4599-13-0} = \text{Annual PE2}_{PM10/Lint\ Filters} + \text{Annual PE2}_{VOC/Shop\ Towels} \\ + \text{Annual PE2}_{Natural\ Gas}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 _{Shop Towels} (lb/day)	Daily PE2 _{Natural Gas} (lb/day)	Daily PE2 _{N-4599-13-0} (lb/day)
NOx	0	0	1.66	1.7
CO	0	0	10.12	10.1
VOC	0	77.18	0.25	77.4
PM ₁₀	2.0	0	0	2.0
SOx	0	0	0.13	0.1
HAPs	0	2.67	0	2.7

Pollutant	Annual PE2 _{Lint Filters} (lb/year)	Annual PE2 _{Shop Towels} (lb/year)	Annual PE2 _{Natural Gas} (lb/year)	Annual PE2 _{N-4599-13-0} (lb/year)
NOx	0	0	605.8	606
CO	0	0	3,695.0	3,695
VOC	0	757.7	91.5	849
PM ₁₀	740.2	0	0	740
SOx	0	0	47.4	47
HAPs	0	26.2	0	26

N-4599-14-0 & -15-0:

PM₁₀ Emissions from the Lint Filter:

Emissions from the lint filter is based on the applicant's proposed laundry drying rate of 8.64 tons/day and 3,153.6 tons/year. Therefore:

$$PE2_{PM10/Lint\ Filters} = \text{Laundry Drying Rate (tons/day or tons/year)} \\ \times EF_{PM10/Lint\ Filters} \text{ (lb-PM}_{10}\text{/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /day)	Annual PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /year)
	tons/day	tons/year			
PM ₁₀	8.64	3,153.6	0.13	1.12	410.0

VOC & HAP Emissions from the Drying of the Laundered Shop Towels:

Emissions from the drying of the laundered shop towels is based on a maximum annual processing rate of 21,600 lb/day and 217,500 lb/year based on a combined annual limit of 1,450,000 lb/year (SLC) for all five shop towel drying operations. It is assumed that each unit will emit 15% of the combined annual limit of 1,450,000 lb/year (SLC). Therefore:

$$PE2_{VOC/Shop\ Towels} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \\ \times EF_{VOC/Shop\ Towels\ Drying} \text{ (lb-VOC/lb of towels processed)}$$

$$PE2_{HAPs/Shop\ Towels} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \\ \times EF_{HAPs/Shop\ Towels\ Drying} \text{ (lb-HAPs/lb of towels processed)}$$

Pollutant	EF _{Shop Towels Drying} (lb/lb-towels processed)	Daily PE2 _{Shop Towels Drying}	Annual PE2 _{Shop Towels Drying}
VOC	0.00201	43.42 lb-VOC/day	437.2 lb-VOC/year
HAPs	0.0000696	1.50 lb-HAPs/day	15.1 lb-HAPs/year

Emissions due to the combustion of Natural Gas from the 1.8 MMBtu/hr Laundry Dryer:

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 43.2 MMBtu/day and 15,768 MMBtu/year. Therefore:

$$PE2_{\text{Natural Gas}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times \text{EF lb/MMBtu}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Natural Gas} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	43.2	15,768	0.0364	1.57	574.0
CO	43.2	15,768	0.084	3.63	1,324.5
VOC	43.2	15,768	0.0055	0.24	86.7
SOx	43.2	15,768	0.00285	0.12	44.9

Combined Total PE2 from the Laundry Drying Operation D27 & D28:

$$\text{Daily PE2}_{N-4599-14-0 \ \& \ '-15-0} = \text{Daily PE2}_{PM10/Lint \ Filters} + \text{Daily PE2}_{VOC/Shop \ Towels} + \text{Daily PE2}_{\text{Natural Gas}}$$

$$\text{Annual PE2}_{N-4599-14-0 \ \& \ '-15-0} = \text{Annual PE2}_{PM10/Lint \ Filters} + \text{Annual PE2}_{VOC/Shop \ Towels} + \text{Annual PE2}_{\text{Natural Gas}}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 _{Shop Towels} (lb/day)	Daily PE2 _{Natural Gas} (lb/day)	Daily PE2 _{N-4599-14-0 & '-15-0} (lb/day)
NOx	0	0	1.57	1.6
CO	0	0	3.63	3.6
VOC	0	43.42	0.24	43.7
PM ₁₀	1.12	0	0	1.1
SOx	0	0	0.12	0.1
HAPs	0	1.50	0	1.5

Pollutant	Annual PE2 _{Lint Filters} (lb/year)	Annual PE2 _{Shop Towels} (lb/year)	Annual PE2 _{Natural Gas} (lb/year)	Annual PE2 _{N-4599-14-0 & '-15-0} (lb/year)
NOx	0	0	574.0	574
CO	0	0	1,324.5	1,325
VOC	0	437.2	86.7	524
PM ₁₀	410.0	0	0	410
SOx	0	0	44.9	45
HAPs	0	15.1	0	15

N-4599-16-0 & '-17-0:

PM₁₀ Emissions from the Lint Filter:

Emissions from the lint filter is based on the applicant's proposed laundry drying rate of 13.2 tons/day and 4,818.0 tons/year. Therefore:

$$PE2_{PM10/Lint \ Filters} = \text{Laundry Drying Rate (tons/day or tons/year)} \times \text{EF}_{PM10/Lint \ Filters} \text{ (lb-PM}_{10}\text{/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /day)	Annual PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /year)
	tons/day	tons/year			
PM ₁₀	13.2	4,818.0	0.13	1.72	626.3

VOC & HAP Emissions from the Drying of the Laundered Shop Towels:

Emissions from the drying of the laundered shop towels is based on a maximum annual processing rate of 32,400 lb/day and 319,000 lb/year based on a combined annual limit of 1,450,000 lb/year (SLC) for all five shop towel drying operations. It is assumed that each unit will emit 22% of the combined annual limit of 1,450,000 lb/year (SLC). Therefore:

$$\text{PE2}_{\text{VOC/Shop Towels}} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \times \text{EF}_{\text{VOC/Shop Towels Drying (lb-VOC/lb of towels processed)}}$$

$$\text{PE2}_{\text{HAPs/Shop Towels}} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \times \text{EF}_{\text{HAPs/Shop Towels Drying (lb-HAPs/lb of towels processed)}}$$

Pollutant	EF _{Shop Towels Drying} (lb/lb-towels processed)	Daily PE2 _{Shop Towels Drying}	Annual PE2 _{Shop Towels Drying}
VOC	0.00201	65.12 lb-VOC/day	641.2 lb-VOC/year
HAPs	0.0000696	2.26 lb-HAPs/day	22.2 lb-HAPs/year

Emissions due to the combustion of Natural Gas from the 1.8 MMBtu/hr Laundry Dryer:

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 43.2 MMBtu/day and 15,768 MMBtu/year. Therefore:

$$\text{PE2}_{\text{Natural Gas}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times \text{EF lb/MMBtu}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Natural Gas} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	43.2	15,768	0.0364	1.57	574.0
CO	43.2	15,768	0.084	3.63	1,324.5
VOC	43.2	15,768	0.0055	0.24	86.7
SOx	43.2	15,768	0.00285	0.12	44.9

Combined Total PE2 from the Laundry Drying Operation D27 & D28:

$$\text{Daily PE2}_{\text{N-4599-16-0 \& -17-0}} = \text{Daily PE2}_{\text{PM10/Lint Filters}} + \text{Daily PE2}_{\text{VOC/Shop Towels}} + \text{Daily PE2}_{\text{Natural Gas}}$$

$$\text{Annual PE2}_{\text{N-4599-16-0 \& -17-0}} = \text{Annual PE2}_{\text{PM10/Lint Filters}} + \text{Annual PE2}_{\text{VOC/Shop Towels}} + \text{Annual PE2}_{\text{Natural Gas}}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 _{Shop Towels} (lb/day)	Daily PE2 _{Natural Gas} (lb/day)	Daily PE2 _{N-4599-16-0 & '17-0} (lb/day)
NOx	0	0	1.66	1.7
CO	0	0	3.63	3.6
VOC	0	65.12	0.24	65.4
PM ₁₀	1.72	0	0	1.7
SOx	0	0	0.12	0.1
HAPs	0	2.26	0	2.3

Pollutant	Annual PE2 _{Lint Filters} (lb/year)	Annual PE2 _{Shop Towels} (lb/year)	Annual PE2 _{Natural Gas} (lb/year)	Annual PE2 _{N-4599-16-0 & '17-0} (lb/year)
NOx	0	0	574.0	574
CO	0	0	1,324.5	1,325
VOC	0	641.2	86.7	728
PM ₁₀	626.3	0	0	626
SOx	0	0	44.9	45
HAPs	0	22.2	0	22

N-4599-18-0:

VOC & HAP Emissions from the Washing of the Soiled Shop Towels:

Emissions from the washing of the soiled shop towels are based on a maximum daily and annual processing rate of 146,400 lb/day and 1,450,000 lb/year, respectively. Therefore:

$$PE2_{VOC/Shop\ Towels} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \\ \times EF_{VOC/Shop\ Towels\ Washing} \text{ (lb-VOC/lb of towels processed)}$$

$$PE2_{HAPs/Shop\ Towels} = \text{Shop Towels Processing Rate (lb/day or lb/year)} \\ \times EF_{HAPs/Shop\ Towels\ Washing} \text{ (lb-HAPs/lb of towels processed)}$$

Pollutant	EF _{Shop Towels Washing} (lb/lb-towels processed)	Daily PE2 _{Shop Towels Washing}	Annual PE2 _{Shop Towels Washing}
VOC (Washing)	0.00006	8.78 lb-VOC/day	87 lb-VOC/year
VOC (WWT)	0.0001	14.64 lb-VOC/day	145 lb-VOC/year
VOC (Fugitive)	0.00033	48.31 lb-VOC/day	479.5 lb-VOC/year
VOC (Combined)	0.00049	71.7 lb-VOC/day	712 lb-VOC/year
HAPs (Combined)	0.0000208	3.0 lb-HAPs/day	30 lb-HAPs/year

VOC Emissions from the Usage of VOC containing Detergents and Detergent Boosters:

VOC emissions from the usage of the detergents are based on a maximum daily and annual usage rate of 137 gal/day and 35,000 gal/year, respectively. For the detergent booster VOC emissions are based on a maximum daily and annual usage rate of 12 gal/day and 1,500 gal/year. Therefore:

$$\begin{aligned} \text{PE2}_{\text{VOC/Detergents}} &= \text{Detergent Usage Rate (gal/day or gal/year)} \\ &\times \text{Detergent VOC Content (lb-VOC/gal)} \\ &+ \text{Booster Usage Rate (gal/day or gal/year)} \\ &\times \text{Booster VOC Content (lb-VOC/gal)} \end{aligned}$$

Pollutant	VOC Content (lb-VOC/gal)		Daily PE2 _{VOC/Detergents} (lb-VOC/day)	Annual PE2 _{VOC/Detergents} (lb-VOC/year)
	Detergent	Booster		
VOC	0.064	1.40	25.6	4,340

Combined Total PE2 from the Laundering Operations:

$$\begin{aligned} \text{Daily PE2}_{\text{N-4599-18-0}} &= \text{Daily PE2}_{\text{VOC/Shop Towels Washing}} \\ &+ \text{Daily PE2}_{\text{HAPs/Shop Towels Washing}} + \text{Daily PE2}_{\text{VOC/Detergents}} \end{aligned}$$

$$\begin{aligned} \text{Annual PE2}_{\text{N-4599-18-0}} &= \text{Annual PE2}_{\text{VOC/Shop Towels Washing}} \\ &+ \text{Annual PE2}_{\text{HAPs/Shop Towels Washing}} + \text{Annual PE2}_{\text{VOC/Detergents}} \end{aligned}$$

Pollutant	Daily PE2 _{Shop Towels Washing} (lb/day)	Daily PE2 _{Detergents} (lb/day)	Daily PE2 _{N-4599-18-0} (lb/day)
VOC	71.7	25.6	97.3
HAPs	3.0	0	3.0

Pollutant	Annual PE2 _{Shop Towels Washing} (lb/year)	Annual PE2 _{Detergents} (lb/year)	Annual PE2 _{N-4599-18-0} (lb/year)
VOC	712	4,340	5,052
HAPs	30	0	30

3. Pre-Project Stationary Source Potential to Emit (SSPE1):

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site. There are no ERCs listed for this facility.

Permit #	SSPE1 (lb/year) ⁽¹⁾					
	NOx	CO	VOC	PM ₁₀	SOx	HAPs
N-4599-1-0	2,344	7,927	906	1,610	459	0
N-4599-2-2	2,344	7,927	906	1,610	459	0
Total	4,688	15,854	1,812	3,220	918	0

4. Post-Project Stationary Source Potential to Emit (SSPE2):

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

¹ Unless otherwise noted, the pre-project annual emissions from the permit unit at this facility were obtained from Project #N-1011269.

SSPE2 (lb/year)						
Permit #	NOx	CO	VOC	PM ₁₀	SOx	HAPs
N-4599-1-0	2,344	7,927	906	1,610	459	0
N-4599-2-2	2,344	7,927	906	1,610	459	0
N-4599-3-0 (ATC Permit)	727	1,106	55	604	28	0
N-4599-4-0 (ATC Permit)	727	1,106	55	604	28	0
N-4599-5-0 (ATC Permit)	727	1,106	55	604	28	0
N-4599-6-0 (ATC Permit)	727	1,106	55	604	28	0
N-4599-7-0 (ATC Permit)	727	1,106	55	604	28	0
N-4599-8-0 (ATC Permit)	727	1,106	55	604	28	0
N-4599-9-0 (ATC Permit)	510	3,112	77	125	40	0
N-4599-10-0 (ATC Permit)	510	3,112	77	125	40	0
N-4599-11-0 (ATC Permit)	510	3,112	77	125	40	0
N-4599-12-0 (ATC Permit)	510	3,112	77	125	40	0
N-4599-13-0 (ATC Permit)	606	3,695	849	740	47	26
N-4599-14-0 (ATC Permit)	574	1,325	524	410	45	15
N-4599-15-0 (ATC Permit)	574	1,325	524	410	45	15
N-4599-16-0 (ATC Permit)	574	1,325	728	626	45	22
N-4599-17-0 (ATC Permit)	574	1,325	728	626	45	22
N-4599-18-0 (ATC Permit)	0	0	5,052	0	0	30
Total	13,992	43,933	10,855	10,156	1,473	130

5. Major Source Determination:

A. Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

There are no ERCs, transportable non-road IC engines, or fugitive emissions at this facility. Therefore:

Major Source Determination (lb/year)						
	NOx	CO	VOC	PM ₁₀	PM _{2.5}	SOx
SSPE1	4,688	7,927	1,812	3,220	3,220	918
SSPE2	13,992	43,933	10,855	10,156	10,156	1,473
Major Source Threshold	20,000	200,000	20,000	140,000	140,000	140,000
Major Source	No	No	No	No	No	No

Note: PM_{2.5} assumed to be equal to PM₁₀.

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

B. Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source thresholds are 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase ⁽²⁾	2.34	0.91	0.46	7.93	1.61	1.61
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source	No	No	No	No	No	No

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE):

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant. Therefore BE = PE1.

N-4599-3-0 through '-18-0:

Since these are new emission units, BE = PE1 = 0 for all pollutants.

7. SB-288 Major Modification:

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

² The estimated facility annual PE totals are based on the SSPE1 totals as determined above in Section VII.3.

8. Federal Major Modification:

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (140,000 lb/year).

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination:

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source. As determined in Section VII.5.B. above in this document, the facility is NOT an existing PSD Major Source.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

Project Emissions Increase – New Major Source Determination:

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The estimated project annual PE for NO₂ (calculated as NO_x), VOC, SO₂ (calculated as SO_x), CO, PM (assumed to be equal to PM₁₀), and PM₁₀ are based on the Annual PE₂ totals as determined in Section VII.C.2.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

Project PSD Major Source Determination (tons/year)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Total PE from New and Modified Units⁽³⁾	4.65	4.52	0.28	14.04	3.47	3.47
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source	No	No	No	No	No	No

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix G.

³ The estimated project annual PE totals are based on the Annual PE2 totals as determined in Section VII.C.2.

VIII. Compliance Determination

Rule 2020 – Exemptions:

This rule specifies emissions units that are not required to obtain an Authority to Construct (ATC) or Permit to Operate (PTO). This rule also specifies the recordkeeping requirements to verify the exemption and outlines the compliance schedule for emissions units that lose the exemption after installation.

The facility will also operate the following permit equipment, which are not used to dry laundered shop towels:

One Natural Gas Direct-Fired Steam Tunnel and Fifteen Natural Gas Direct-Fired Dryers:

- Laundry steam tunnel served by one 1.5 MMBtu/hr Leonard Model VTP-32 natural gas-fired dryer.
- Twelve laundry drying operations each consisting of one 1.5 MMBtu/hr Lavatech Model TT7486 natural gas-fired dryer with Eclipse Minnox low NOx burners.
- Three laundry drying operations each consisting of one 0.395 MMBtu/hr Unimac Pony natural gas-fired dryer.

Steam Tunnel Dryer (T1):

According to the applicant the steam tunnels are only used to remove wrinkles from laundered clothing, no shop towels are processed through the steam tunnels. Steam is provided by their permitted boilers and the associated direct-fired dryer is used to dry the clothing after steaming.

Emission Factors (EFs) from the Combustion of Natural Gas in the 1.5 MMBtu/hr Leonard Model VTP-32 Steam Tunnel Dryer (T1):

For the existing steam tunnel dryer, the emission factors (EFs) for the combustion of natural gas for NOx and CO are based on information provided by the applicant from the equipment manufacturer. CO, and VOC will be based on the applicant's proposed emission rates from USEPA AP-42, Table 1.4-1 and 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is based on the emission factor from District FYI-328 (dated 6/12/14). The EF for SOx, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF_{Natural Gas})		
Pollutant	EF_{Natural Gas}	Source
NOx	0.109 lb/MMBtu (90 ppmvd @ 3% O ₂)	Equipment Manufacturer
CO	0.0591 lb/MMBtu (80 ppmvd @ 3% O ₂)	Equipment Manufacturer
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	0.003 lb/MMBtu	District FYI-328
SOx	0.00285 lb/MMBtu	District Policy APR-1720

Emissions due to the combustion of Natural Gas from the Steam Tunnel Dryer (T1):

Emissions from the combustion of natural gas in the existing laundry dryer is based on the maximum heat input rates of 18.21 MMBtu/day and 6,647 MMBtu/year. Therefore:

$$PE2_{\text{Steam Tunnel Dryer}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times EF_{\text{Natural Gas lb/MMBtu}}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Steam Tunnel Dryer} (lb/day)	Annual PE2 _{Steam Tunnel Dryer} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	18.21	6,647	0.109	2.0	725
CO	18.21	6,647	0.0591	1.1	393
VOC	18.21	6,647	0.0055	0.1	37
PM ₁₀	18.21	6,647	0.003	0.05	20
SOx	18.21	6,647	0.00285	0.05	19

Twelve 1.5 MMBtu/hr Lavatech Model TT7486 Laundry Dryers (D7 through D18):
According to the applicant these laundry dryers are only used for normal laundry and no shop towels are dried through these dryers. Each dryer is also served by lint filters, which is an integral part of the unit and not an add-on control device.

PM₁₀ Emissions from the Lint Filters:

Emissions from the lint filters are based on the applicant's proposed laundry drying rate of 14.88 tons/day and 5,431.2 tons/year. The PM₁₀ emission factor is based on the emission factor as stated in Section VII.B. of this document. Therefore:

$$PE2_{PM10/Lint\ Filters} = \text{Laundry Drying Rate (tons/day or tons/year)} \\ \times EF_{PM10/Lint\ Filters} \text{ (lb-PM}_{10}\text{/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /day)	Annual PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /year)
	tons/day	tons/year			
PM ₁₀	14.88	5,431.2	0.13	1.93	706.1

Emission Factors (EFs) from the Combustion of Natural Gas in the 1.5 MMBtu/hr Lavatech Model TT7486 Laundry Dryers (D7 thru D18):

For these laundry dryers, the emission factors (EFs) for the combustion of natural gas for NOx and CO are based on information provided by the application from the equipment manufacturer. VOC will be based on the emission rates from USEPA AP-42, Table 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated in Section VII.B. of this document. The EF for SOx, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF _{Natural Gas})		
Pollutant	EF _{Natural Gas}	Source
NOx	0.0061 lb/MMBtu (5 ppmvd @ 3% O ₂)	Equipment Manufacturer.
CO	0.0222 lb/MMBtu (30 ppmvd @ 3% O ₂)	Equipment Manufacturer.
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SOx	0.00285 lb/MMBtu	District Policy APR-1720

Emissions due to the combustion of Natural Gas from each 1.5 MMBtu/hr Lavatech Model TT7486 Laundry Dryer (D7 through D18):

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 36.0 MMBtu/day and 13,140 MMBtu/year. Therefore:

$$PE2_{\text{Natural Gas}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times \text{EF lb/MMBtu}$$

Pollutant	Heat Input Rate		EF ^{Natural Gas} (lb/MMBtu)	Daily PE2 ^{Natural Gas} (lb/day)	Annual PE2 ^{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NOx	36.0	13,140	0.0061	0.22	80.2
CO	36.0	13,140	0.0222	0.80	291.7
VOC	36.0	13,140	0.0055	0.20	72.3
SOx	36.0	13,140	0.00285	0.10	37.4

Combined Total PE2 from each Laundry Drying Operation D7 through D18:

$$\text{Daily PE2}_{D7 \text{ through } D18} = \text{Daily PE2}_{\text{PM}_{10}/\text{Lint Filters}} + \text{Daily PE2}_{\text{Natural Gas}}$$

$$\text{Annual PE2}_{D7 \text{ through } D18} = \text{Annual PE2}_{\text{PM}_{10}/\text{Lint Filters}} + \text{Annual PE2}_{\text{Natural Gas}}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 ^{Natural Gas} (lb/day)	Daily PE2 _{D7 through D18} (lb/day)
NOx	0	0.22	0.2
CO	0	0.80	0.8
VOC	0	0.20	0.2
PM ₁₀	1.93	0	1.9
SOx	0	0.10	0.1

Pollutant	Annual PE2 _{Lint Filters} (lb/year)	Annual PE2 ^{Natural Gas} (lb/year)	Annual PE2 _{D7 through D18} (lb/day)
NOx	0	80.2	80
CO	0	291.7	292
VOC	0	72.3	72
PM ₁₀	706.1	0	706
SOx	0	37.4	37

Three 0.395 MMBtu/hr Unimac Pony Laundry Dryers (D23 through D25):

According to the applicant these laundry dryers are only used for normal laundry and no shop towels are dried through these dryers. Each dryer is also served by lint filters, which is an integral part of the unit and not an add-on control device.

PM₁₀ Emissions from the Lint Filters:

Emissions from the lint filters are based on the applicant's proposed laundry drying rate of 3.36 tons/day and 1,226.4 tons/year. The PM₁₀ emission factor is based on the emission factor as stated in Section VII.B. of this document. Therefore:

$$PE2_{\text{PM}_{10}/\text{Lint Filters}} = \text{Laundry Drying Rate (tons/day or tons/year)} \times \text{EF}_{\text{PM}_{10}/\text{Lint Filters}} \text{ (lb-PM}_{10}\text{/tons of laundry dried)}$$

Pollutant	Drying Rate		EF _{Lint Filters} (lb/ton)	Daily PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /day)	Annual PE2 _{PM10/Lint Filter} (lb-PM ₁₀ /year)
	tons/day	tons/year			
PM ₁₀	3.36	1,226.4	0.13	0.44	159.4

Emissions from the Combustion of Natural Gas in the 0.395 MMBtu/hr Unimac Pony Laundry Dryers (D23 through D25):

For these existing laundry dryers, the emission factors (EFs) for the combustion of natural gas for NO_x, CO, and VOC will be based on the applicant's proposed emission rates from USEPA AP-42, Table 1.4-1 and 1.4-2. The EF for PM₁₀ when burning PUC quality natural gas is included in the emission factor for the lint filters serving the dryer as stated in Section VII.B. of this document. The EF for SO_x, when burning natural gas is based on mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720. The EF is summarized in the following table:

Natural Gas Combustion Emission Factors (EF _{Natural Gas})		
Pollutant	EF _{Natural Gas}	Source
NO _x	0.1 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-1 (7/98).
CO	0.084 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-1 (7/98).
VOC	0.0055 lb/MMBtu	Applicant's proposal based on EPA's AP-42, Table 1.4-2 (7/98).
PM ₁₀	N.A.	Included in EF for the lint filters.
SO _x	0.00285 lb/MMBtu	District Policy APR-1720

Emissions due to the combustion of Natural Gas from each 0.395 MMBtu/hr Unimac Pony Laundry Dryer (D23 through D25):

Emissions from the combustion of natural gas in the existing laundry dryers are based on the applicant's proposed heat input rates of 9.48 MMBtu/day and 3,460.2 MMBtu/year. Therefore:

$$PE2_{\text{Natural Gas}} = \text{Heat Input (MMBtu/day, MMBtu/yr)} \times EF_{\text{Natural Gas lb/MMBtu}}$$

Pollutant	Heat Input Rate		EF _{Natural Gas} (lb/MMBtu)	Daily PE2 _{Natural Gas} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)
	MMBtu/day	MMBtu/year			
NO _x	9.48	3,460.2	0.1	0.95	346.0
CO	9.48	3,460.2	0.084	0.80	290.7
VOC	9.48	3,460.2	0.0055	0.05	19.0
SO _x	9.48	3,460.2	0.00285	0.03	9.9

Combined Total PE2 from each Laundry Drying Operations D23 thru D25:

$$\text{Daily PE2}_{D23 \text{ through } D25} = \text{Daily PE2}_{PM10/Lint \text{ Filters}} + \text{Daily PE2}_{\text{Natural Gas}}$$

$$\text{Annual PE2}_{D23 \text{ thru } D25} = \text{Annual PE2}_{PM10/Lint \text{ Filters}} + \text{Annual PE2}_{\text{Natural Gas}}$$

Pollutant	Daily PE2 _{Lint Filters} (lb/day)	Daily PE2 _{Natural Gas} (lb/day)	Daily PE2 _{D23 thru D25} (lb/day)
NOx	0	0.95	1.0
CO	0	0.80	0.8
VOC	0	0.05	0.1
PM ₁₀	0.44	0	0.4
SOx	0	0.03	0.0

Pollutant	Annual PE2 _{Lint Filters} (lb/day)	Annual PE2 _{Natural Gas} (lb/year)	Annual PE2 _{D23 thru D25} (lb/day)
NOx	0	346.0	346
CO	0	290.7	291
VOC	0	19.0	19
PM ₁₀	159.4	0	159
SOx	0	9.9	10

Per District rule 2020 (Exemptions), Section 6.19, a low emitting unit shall not require an Authority to Construct or Permit to Operate provided the uncontrolled Hazardous Air Pollutant (HAP) emissions do not cause a significant health risk to the public. Section 3.10 of this rule defines a low emitting unit as an emissions unit with uncontrolled emissions rate of each air contaminant of less than or equal to 2 lb/day, or if greater than 2 lb/day, is less than or equal to 75 lb/year. As determined above the uncontrolled emissions from each steam tunnel dryer and each laundry dryer is less than 2 lb/day for any one pollutant; therefore, these units are “low emitting units”. Based on the results of the health risk analysis (refer to Appendix F) for these units, the uncontrolled HAP emissions will not cause a significant health risk to the public. Therefore, these units are exempt from District permits per Rule 2020, Section 6.19.

Rule 2201 - New and Modified Stationary Source Review Rule:

A. Best Available Control Technology (BACT):

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New Emissions Units – PE > 2 lb/day

N-4599-3-0, '-4-0, '-5-0, '-6-0, '-7-0, & '-8-0:

New Emissions Unit BACT Applicability				
Pollutant	Daily PE _{2N-4599-3-0 thru '-8-0} (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	2.0	> 2.0	n/a	No
CO	3.0	> 2.0 and SSPE2 ≥ 200,000 lb/year	43,933	No
VOC	0.2	> 2.0	n/a	No
PM ₁₀	1.7	> 2.0	n/a	No
SO _x	0.1	> 2.0	n/a	No

As determined in the table above, BACT is NOT triggered for any affected pollutant from the emissions unit associated with these permit units.

N-4599-9-0, '-10-0, '-11-0, and '-12-0:

New Emissions Unit BACT Applicability				
Pollutant	Daily PE _{2N-4599-9-0 thru '-12-0} (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	1.4	> 2.0	n/a	No
CO	8.5	> 2.0 and SSPE2 ≥ 200,000 lb/year	43,933	No
VOC	0.2	> 2.0	n/a	No
PM ₁₀	0.3	> 2.0	n/a	No
SO _x	0.1	> 2.0	n/a	No

As determined in the table above, BACT is NOT triggered for any affected pollutant from the emissions unit associated with these permit units.

N-4599-13-0:

New Emissions Unit BACT Applicability				
Pollutant	Daily PE _{2N-4599-13-0} (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	1.7	> 2.0	n/a	No
CO	10.1	> 2.0 and SSPE2 ≥ 200,000 lb/year	43,933	No
VOC	77.4	> 2.0	n/a	Yes
PM ₁₀	2.0	> 2.0	n/a	No
SO _x	0.1	> 2.0	n/a	No

As determined in the table above, BACT is only triggered for VOC emissions from the drying of shop towels under this permit unit.

N-4599-14-0 and '-15-0:

New Emissions Unit BACT Applicability				
Pollutant	Daily PE ₂ _{N-4599-14-0 & '-15-0} (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	1.6	> 2.0	n/a	No
CO	3.6	> 2.0 and SSPE2 ≥ 200,000 lb/year	43,933	No
VOC	43.7	> 2.0	n/a	Yes
PM ₁₀	1.1	> 2.0	n/a	No
SO _x	0.1	> 2.0	n/a	No

As determined in the table above, BACT is only triggered for VOC emissions from the drying of shop towels under this permit unit.

N-4599-16-0 and '-17-0:

New Emissions Unit BACT Applicability				
Pollutant	Daily PE ₂ _{N-4599-16-0 & '-17-0} (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	1.7	> 2.0	n/a	No
CO	3.6	> 2.0 and SSPE2 ≥ 200,000 lb/year	43,933	No
VOC	65.4	> 2.0	n/a	Yes
PM ₁₀	1.7	> 2.0	n/a	No
SO _x	0.1	> 2.0	n/a	No

As determined in the table above, BACT is only triggered for VOC emissions from the drying of shop towels under this permit unit.

N-4599-18-0:

New Emissions Unit BACT Applicability				
Pollutant	Daily PE ₂ _{N-4599-18-0} (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/year)	BACT Triggered
NO _x	0	> 2.0	n/a	No
CO	0	> 2.0 and SSPE2 ≥ 200,000 lb/year	43,933	No
VOC	97.3	> 2.0	n/a	Yes
PM ₁₀	0	> 2.0	n/a	No
SO _x	0	> 2.0	n/a	No

As determined in the table above, BACT is only triggered for VOC emissions from the drying of shop towels under this permit unit.

b. Relocation of Emissions Units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for any affected pollutant. Therefore BACT is not triggered for any affected pollutant.

2. BACT Guidance:

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule." For source categories or classes covered in the BACT Clearinghouse, relevant information under each of the steps may be simply cited from the Clearinghouse without further analysis.

N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0:

The District's current BACT Clearinghouse Guideline 1.9.4, covers natural gas-fired laundry dryers used on solvent-laden towels. Refer to Appendix B for a copy of this BACT Guideline.

N-4599-18-0:

The District's revised BACT Clearinghouse Guideline 4.11.7, covers shop towel laundering operations consisting of sorting tables, washing machines, and waste water treatment system. Refer to Appendix D for a copy of the revised BACT Guideline.

3. Top-Down BACT Analysis

N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0:

VOC Emissions:

The applicant is proposing to limit the VOC emissions to not exceed 0.00201 lb/lb of shop towels processed without the use of any control device. The applicant will be utilizing the most stringent control technique that has not been eliminated in the Top-Down BACT analysis in Appendix C of this document. Therefore, BACT for VOC is being proposed.

N-4599-18-0:

VOC Emissions:

The applicant is proposing to utilize closed containers to store the solvent-laden shop towels for evaporative loss minimization, which is the achieved-in-practice BACT control method for VOC emissions. The applicant will be utilizing the most stringent

control technique that has not been eliminated in the Top-Down BACT analysis in Appendix E of this document. Therefore, BACT for VOC is being proposed.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_x	SO_x	PM₁₀	CO	VOC
SSPE2	13,992	1,473	10,156	43,933	10,855
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore, offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modification,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSPE2 of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications:

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7. and VII.C.8., this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day:

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant; therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold:

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	4,688	13,992	20,000 lb/year	No
SO _x	918	1,473	54,750 lb/year	No
PM ₁₀	3,220	10,156	29,200 lb/year	No
CO	15,854	43,933	200,000 lb/year	No
VOC	1,812	10,855	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year:

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	13,992	4,688	9,304	20,000 lb/year	No
SO _x	1,473	918	555	20,000 lb/year	No
PM ₁₀	10,156	3,220	6,936	20,000 lb/year	No
CO	43,992	15,854	28,138	20,000 lb/year	Yes
VOC	10,855	1,812	9,043	20,000 lb/year	No

As demonstrated above, the SSIPEs for CO is greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

e. Title V Significant Permit Modification:

Since this facility does not have a Title V operating permit, this change is not a Title V significant modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for SSIPE > 20,000 lb/year for CO emissions. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC permits for this project.

D. Daily Emissions Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

N-4599-3-0, '-4-0, '-5-0, '-6-0, '-7-0, and '-8-0:

For these laundry drying operations, the DELs are stated in the form of emission factors (lb/MMBtu and lb/ton laundry dried), the proposed daily and annual natural gas usage rates, and the maximum design capacity of the laundry dryer as stated in the equipment description (0.53 ton/hr laundry processing capacity) and operating 24 hr/day and 365 days/year. The following permit conditions will be placed on each Authority to Construct (ATC) and Permit to Operate (PTO) to enforce the requirements of this section:

- *The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]*
- *PM₁₀ emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on a PM₁₀ emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]*
- *The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]*
- *The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]*
- *Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]*

N-4599-9-0, '-10-0, '-11-0, and '-12-0:

For these laundry drying operations, the DELs are stated in the form of emission factors (lb/MMBtu and lb/ton laundry dried), the maximum design capacity of the laundry dryer as stated in the equipment description (1.6 MMBtu/hr (heat input rate capacity) and 0.11 ton/hr (laundry processing capacity)), and operating 24 hr/day and 365 days/year. The following permit conditions will be placed on each ATC permit and PTO to enforce the requirements of this section:

- *The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]*
- *PM₁₀ emissions from the laundry dryer (including natural gas combustion) shall not exceed 0.34 pounds in any one day (based on a PM₁₀ emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]*
- *The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]*
- *Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]*

N-4599-13-0:

For this laundry drying operation, the DELs are stated in the form of emission factors (lb/MMBtu, lb/ton laundry dried, and lb/lb soiled shop towels processed), the maximum design capacity of the laundry dryer as stated in the equipment description (1.9 MMBtu/hr (heat input rate capacity) and 0.65 ton/hr (laundry processing capacity)), operating 24 hr/day and 365 days/year, and the maximum daily and annual quantity of soiled shop towels processed. The following permit conditions will be placed on the ATC permit and PTO to enforce the requirements of this section:

- *PM₁₀ emissions from the laundry dryer (including natural gas combustion) shall not exceed 2.0 pounds in any one day (based on a PM₁₀ emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]*
- *The total quantity of shop towels processed shall not exceed 38,400 soiled weight pounds in any one day. [District Rule 2201]*
- *The total facility-wide quantity of soiled shop towels processed shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]*
- *VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]*
- *The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]*
- *Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]*

N-4599-14-0 and '-15-0:

For these laundry drying operations, the DELs are stated in the form of emission factors (lb/MMBtu, lb/ton laundry dried, and lb/lb soiled shop towels processed), the maximum design capacity of the laundry dryer as stated in the equipment description (1.8 MMBtu/hr (heat input rate capacity) and 0.36 ton/hr (laundry processing capacity)) operating 24 hr/day and 365 days/year, and the maximum daily and annual quantity of soiled shop towels processed. The following permit conditions will be placed on each ATC permit and PTO to enforce the requirements of this section:

- *PM₁₀ emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.1 pounds in any one day (based on a PM₁₀ emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]*
- *The total quantity of shop towels processed shall not exceed 21,600 soiled weight pounds in any one day. [District Rule 2201]*
- *The total facility-wide quantity of soiled shop towels processed shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]*
- *VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]*
- *The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]*
- *Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.084 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]*

N-4599-16-0 and '-17-0:

For these laundry drying operations, the DELs are stated in the form of emission factors (lb/MMBtu, lb/ton laundry dried, and lb/lb soiled shop towels processed), the maximum design capacity of the laundry dryer as stated in the equipment description (1.8 MMBtu/hr (heat input rate capacity) and 0.55 ton/hr (laundry processing capacity)) operating 24 hr/day and 365 days/year, and the maximum daily and annual quantity of soiled shop towels processed. The following permit conditions will be placed on each ATC permit and PTO to enforce the requirements of this section:

- *PM₁₀ emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on a PM₁₀ emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]*
- *The total quantity of shop towels processed shall not exceed 32,400 soiled weight pounds in any one day. [District Rule 2201]*
- *The total facility-wide quantity of soiled shop towels processed shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rule 2201]*

- *VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]*
- *The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]*
- *Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.084 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]*

N-4599-18-0:

For the laundering operation, the DEL is stated in the form of an emission factors (lb/lb-soiled shop towels washed, VOC content of the detergent (lb-VOC/gal) and VOC content of the detergent booster (lb-VOC/gal)) along with the maximum daily and annual quantity of soiled shop towels washed and detergents/boosters used. The following permit conditions will be placed on the ATC permit and PTO to enforce the requirements of this section:

- *The total quantity of soiled shop towels washed shall not exceed 146,400 soiled weight pounds in any one day and 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rule 2201]*
- *VOC emissions from the washing of soiled shop towels shall not exceed 0.00049 pounds per pound of soiled shop towels washed. [District Rule 2201]*
- *The total quantity of VOC containing detergents used shall not exceed 137 gallons in any one day and 35,000 gallons in any rolling 12-month period. [District Rule 2201]*
- *The total quantity of VOC containing detergent boosters used shall not exceed 12 gallons in any one day and 1,500 gallons in any rolling 12-month period. [District Rule 2201]*
- *The maximum VOC content of the VOC containing detergents used shall not exceed 0.064 lb-VOC/gallon. [District Rule 2201]*
- *The maximum VOC content of the VOC containing detergent boosters used shall not exceed 1.40 lb-VOC/gallon. [District Rule 2201]*

In order to ensure compliance with the DELs listed above, the facility will not launder print towels or furniture towels, since these items would release significantly more VOCs than soiled shop towels. The following permit conditions will be placed on the ATC and PTO to enforce the requirements of this section:

- *Neither print towels nor furniture towels shall be laundered at this facility. Any print towels or furniture towels sent to this facility shall be bagged and stored outside in a covered area prior to being sent off-site for laundering. [District Rule 2201]*
- *No shop towels that contain, or are saturated with free liquid shall be laundered at this facility. Shop towels that contain free liquid shall not be received from any customer's facilities. [District Rule 2201]*

- *Soiled shop towels shall be processed separately from other textile goods. [District Rule 2201]*

E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules.

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Record Keeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the ATC permit and PTO:

N-4599-3-0, '-4-0, '-5-0, '-6-0, '-7-0, and '-8-0:

Since these laundry dryers are operating at the maximum laundry processing rate capacity for 24 hrs/day and 365 days/year, daily and annual records of the quantity of laundry dried is not required. However, the applicant is requesting to limit the daily and annual heat input rate of these units below the maximum heat input rate capacity; therefore, daily and cumulative annual records of the natural gas usage rates will be required using the following conditions:

- *A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized, and maintained. [District Rule 2201]*
- *During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]*
- *On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]*
- *All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]*

N-4599-9-0, '-10-0, '-11-0, and '-12-0:

Since these laundry dryers are operating at the maximum laundry processing rate and natural gas fuel usage rate capacities for 24 hrs/day and 365 days/year, daily

and annual records of the quantity of laundry dried and natural gas usages are not necessary.

N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0:

Since these laundry dryers are operating at the maximum laundry processing rate capacity for 24 hrs/day and 365 days/year, daily and annual records of the quantity of laundry dried is not required. However, the applicant is requesting to limit the daily and annual quantity of soiled shop towels processed below the maximum processing capacity of the dryers; therefore, daily and cumulative annual records of the quantity of soiled shop towels processed will be required using the following conditions:

- *During each day of operation, the permittee shall maintain daily records of the total quantity of shop towels processed by the dryer (in soiled weight pounds). [District Rules 1070 and 2201]*
- *On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the total facility-wide quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]*
- *All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]*

N-4599-18-0:

VOC emissions from the washing machines and wastewater treatment system are due to the processing of soiled shop towels and the use of VOC containing detergents. Therefore, daily and annual records of the quantity of soil shop towels processed and the quantity of VOC containing detergents used are required using the following permit conditions:

- *During each day of operation, the permittee shall maintain daily records of the following:*
 - (a). *Total facility-wide quantity of shop towels processed by the washing machines (in soiled weight pounds);*
 - (b). *Total facility-wide quantity of VOC containing detergents used in the washing machines (in gallons).*
 - (c). *Total facility-wide quantity of VOC containing detergent boosters used in the washing machines (in gallons). [District Rules 1070 and 2201]*
- *On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the following:*
 - (a). *Total facility-wide quantity of shop towels processed by the washing machines (in soiled weight pounds);*
 - (b). *Total facility-wide quantity of VOC containing detergents used in the washing machines (in gallons).*
 - (c). *Total facility-wide quantity of VOC containing detergent boosters used in the washing machines (in gallons). [District Rules 1070 and 2201]*

- *The permittee shall maintain records of each VOC containing detergent and detergent booster used at the facility. The records shall include the manufacturer's product data sheet or safety data sheet (SDS) and shall state the VOC content in grams/liter or pounds/gallon. [District Rules 1070 and 2201]*
- *All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]*

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to **Appendix F** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Rule 2410 – Prevention of Significant Deterioration:

N-4599-3-0 through '-18-0:

As shown in Section VII. C. 9. above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 - Federally Mandated Operating Permits:

N-4599-3-0 through '-18-0:

Since this facility's potential emissions do not exceed any major source threshold of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4001 - New Source Performance Standards

N-4599-3-0 through '-18-0:

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to laundry drying operations, soiled shop towel laundering operations and associated wastewater treatment operations.

Rule 4002 – National Emissions Standards for Hazardous Air Pollutants

N-4599-3-0 through '-18-0:

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to laundry drying operations, soiled shop towel laundering operations and associated wastewater treatment operations.

Rule 4101 - Visible Emissions:

N-4599-3-0 through '-18-0:

Rule 4101 states that no person shall discharged into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any one hour which is dark as or darker than Ringelmann 1 (or 20% opacity). Opacity is expected to be less than 20% provided that all of the equipment is maintained and operated properly.

Therefore, the following condition will be listed on each ATC permit and PTO to ensure compliance:

- *{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]*

Therefore, compliance with this rule is expected.

Rule 4102 – Nuisance:

N-4212-4-0, '-5-0, '-6-0, & '-7-0:

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

The following condition will be listed on each ATC permit and PTO to ensure compliance:

- *{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]*

California Health & Safety Code 41700 (Health Risk Analysis):

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix F), the total facility prioritization score including this project was greater than one. Therefore, an HRA

was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below in the following table:

RMR Summary						
Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required?	Special Permit Requirements?
Unit 3-0	0.0375	0.00	0.00	0.000457×10 ⁻⁶	No	Yes
Unit 4-0	0.0375	0.00	0.00	0.000456×10 ⁻⁶	No	Yes
Unit 5-0	0.0375	0.00	0.00	0.00045×10 ⁻⁶	No	Yes
Unit 6-0	0.0375	0.00	0.00	0.000445×10 ⁻⁶	No	Yes
Unit 7-0	0.0375	0.00	0.00	0.000439×10 ⁻⁶	No	Yes
Unit 8-0	0.0375	0.00	0.00	0.000436×10 ⁻⁶	No	Yes
Unit 9-0	0.0528	0.00	0.00	0.000821×10 ⁻⁶	No	Yes
Unit 10-0	0.0528	0.00	0.00	0.000813×10 ⁻⁶	No	Yes
Unit 11-0	0.0528	0.00	0.00	0.000804×10 ⁻⁶	No	Yes
Unit 12-0	0.0528	0.00	0.00	0.000791×10 ⁻⁶	No	Yes
Unit 13-0	0.340	0.00	0.00	0.00295×10 ⁻⁶	No	No
Unit 14-0	0.220	0.00	0.00	0.00159×10 ⁻⁶	No	No
Unit 15-0	0.220	0.00	0.00	0.00155×10 ⁻⁶	No	No
Unit 16-0	0.294	0.00	0.00	0.00191×10 ⁻⁶	No	No
Unit 17-0	0.294	0.00	0.00	0.00186×10 ⁻⁶	No	No
Unit 18-0	0.855	0.00	0.00	0.0138×10 ⁻⁶	No	No
Exempt Determination (Leonard Tunnel Dryer) ¹	0.0251	2.0×10 ⁻⁵	1.0×10 ⁻⁵	0.000385×10 ⁻⁶	No	Yes
Exempt Determination (12 Lavatech Dryers) ¹	0.594	2.4×10 ⁻⁴	2.4×10 ⁻⁴	0.0097×10 ⁻⁶	No	Yes
Exempt Determination (3 Unimac Pony Dryers) ¹	0.0309	1.34×10 ⁻⁵	3.0×10 ⁻⁵	0.000606×10 ⁻⁶	No	Yes
Project Totals	>1	6.05×10 ⁻³	3.19×10 ⁻⁴	0.0295×10 ⁻⁶		
Facility Totals	>1	6.05×10 ⁻³	3.19×10 ⁻⁴	0.0295×10 ⁻⁶		

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 20 in a million). As outlined by the HRA Summary in Appendix F of this report, the emissions increases for this project was determined to be less than significant.

To ensure that human health risks will not exceed District allowable levels, the following conditions will be included on the ATC permits and PTOs:

N-4599-3-0 through '-12-0:

- *The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]*

N-4599-13-0 through '-18-0:

No additional conditions for compliance with this rule are required for these permit units.

Rule 4201 - Particulate Matter Concentration:

N-4599-3-0 through '-17-0:

Section 3.0 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter. Since the laundry dryers will be fired exclusively on natural gas fuel, it is reasonable to assume the PM emissions will be the same as the PM₁₀ emissions. Thus, the particulate concentration in the exhaust of the laundry dryers may be calculated as follows:

$$\begin{aligned}\text{PM Concentration} &= 0.003 \text{ lb-PM}_{10}/\text{MMBtu} \times \text{MMBtu}/8,578 \text{ dscf} \times 7,000 \text{ gr/lb} \\ &= 0.0024 \text{ gr/dscf} < 0.1 \text{ gr/dscf}\end{aligned}$$

For the lint filters serving the laundry dryers D1 through D6, the PM concentration is calculated as follows:

Max Quantity of PM Emissions: 3.4 lb PM/day⁽⁴⁾
Max Operating Hours: 24 hr/day (1,440 min/day)
Air Flow Rate: 3,347 cfm

$$\begin{aligned}\text{PM Concentration} &= (3.4 \text{ lb PM/day} \times 7,000 \text{ grains/lb}) \div (3,347 \text{ scfm} \times 1,440 \text{ min/day}) \\ &= 0.005 \text{ grains/scf} < 0.1 \text{ gr/dscf}\end{aligned}$$

For the lint filters serving the laundry dryers D19 through D22, the PM concentration is calculated as follows:

Max Quantity of PM Emissions: 0.68 lb PM/day⁽⁵⁾
Max Operating Hours: 24 hr/day (1,440 min/day)
Air Flow Rate: 3,227 cfm

$$\begin{aligned}\text{PM Concentration} &= (0.68 \text{ lb PM/day} \times 7,000 \text{ grains/lb}) \div (3,227 \text{ scfm} \times 1,440 \text{ min/day}) \\ &= 0.001 \text{ grains/scf} < 0.1 \text{ gr/dscf}\end{aligned}$$

⁴ Based on a PM₁₀ fraction of 0.5 lb-PM₁₀/lb-PM, the PM Emissions = 1.7 lb-PM₁₀/day + 0.5 lb-PM₁₀/lb-PM = 3.4 lb PM/day.

⁵ Based on a PM₁₀ fraction of 0.5 lb-PM₁₀/lb-PM, the PM Emissions = 0.34 lb-PM₁₀/day + 0.5 lb-PM₁₀/lb-PM = 0.68 lb PM/day.

For the lint filters serving the laundry dryers D26, the PM concentration is calculated as follows:

Max Quantity of PM Emissions: 4.0 lb PM/day⁽⁶⁾
Max Operating Hours: 24 hr/day (1,440 min/day)
Air Flow Rate: 3,858 cfm

$$\begin{aligned}\text{PM Concentration} &= (4.0 \text{ lb PM/day} \times 7,000 \text{ grains/lb}) \div (3,858 \text{ scfm} \times 1,440 \text{ min/day}) \\ &= 0.005 \text{ grains/scf} < 0.1 \text{ gr/dscf}\end{aligned}$$

For the lint filters serving the laundry dryers D27 and D28, the PM concentration is calculated as follows:

Max Quantity of PM Emissions: 2.2 lb PM/day⁽⁷⁾
Max Operating Hours: 24 hr/day (1,440 min/day)
Air Flow Rate: 3,452 cfm

$$\begin{aligned}\text{PM Concentration} &= (2.2 \text{ lb PM/day} \times 7,000 \text{ grains/lb}) \div (3,452 \text{ scfm} \times 1,440 \text{ min/day}) \\ &= 0.003 \text{ grains/scf} < 0.1 \text{ gr/dscf}\end{aligned}$$

For the lint filters serving the laundry dryers D29 and D30, the PM concentration is calculated as follows:

Max Quantity of PM Emissions: 3.4 lb PM/day⁽⁸⁾
Max Operating Hours: 24 hr/day (1,440 min/day)
Air Flow Rate: 3,452 cfm

$$\begin{aligned}\text{PM Concentration} &= (3.4 \text{ lb PM/day} \times 7,000 \text{ grains/lb}) \div (3,452 \text{ scfm} \times 1,440 \text{ min/day}) \\ &= 0.005 \text{ grains/scf} < 0.1 \text{ gr/dscf}\end{aligned}$$

Therefore, as long as these units are properly maintained and operated, compliance with District Rule 4201 requirements is expected. Therefore, the following condition will be listed on each ATC permit and PTO to ensure compliance:

- *{14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]*

Rule 4301 - Fuel Burning Equipment:

N-4599-3-0 through '-17-0:

Pursuant to Section 3.1 of this rule, this rule applies only to units that produce heat or power via indirect heat transfer. The proposed laundry dryers are direct-fired units. Thus, this rule does not apply.

⁶ Based on a PM₁₀ fraction of 0.5 lb-PM₁₀/lb-PM, the PM Emissions = 2.0 lb-PM₁₀/day + 0.5 lb-PM₁₀/lb-PM = 4.0 lb PM/day.

⁷ Based on a PM₁₀ fraction of 0.5 lb-PM₁₀/lb-PM, the PM Emissions = 1.1 lb-PM₁₀/day + 0.5 lb-PM₁₀/lb-PM = 2.2 lb PM/day.

⁸ Based on a PM₁₀ fraction of 0.5 lb-PM₁₀/lb-PM, the PM Emissions = 1.7 lb-PM₁₀/day + 0.5 lb-PM₁₀/lb-PM = 3.4 lb PM/day.

Rule 4309 – Dryers, Dehydrators, and Ovens:

N-4599-3-0 through '-17-0:

This rule applies to any dryer, dehydrator, or oven with a total rated heat input of 5 MMBtu/hr or greater.

The highest heat input for the proposed laundry dryers is 1.9 MMBtu/hr. Therefore, the proposed dryers are not subject to the requirements of this Rule, and no further discussion is required.

Rule 4801 - Sulfur Compounds

N-4599-3-0 through '-17-0:

Section 3.1 prohibits emissions of sulfur compounds as SO₂ in excess of 0.2% by volume (2,000 ppmv) averaged over 15 minutes.

From Section VII.B. of this document, the SO₂ emissions from the laundry dryers are calculated based on an emission factor of 0.00285 lb-SO_x/MMBtu.

$$\begin{aligned}\text{lb-SO}_2/\text{exhaust vol.} &= (\text{lb-SO}_2/\text{MMBtu}) \div (\text{F factor}) \\ &= (0.00285 \text{ lb-SO}_2/\text{MMBtu}) \div (8,578 \text{ dscf/MMBtu}) \\ &= 3.32 \times 10^{-7} \text{ lb-SO}_2/\text{dscf}\end{aligned}$$

$$\text{Volume SO}_2/\text{exhaust vol.} = nRT/P$$

$$\begin{aligned}\text{Where, } n &= \text{moles SO}_x = (3.32 \times 10^{-7} \text{ lb-SO}_2/\text{dscf}) \div (64 \text{ lb-SO}_2/\text{lb-mol}) \\ &= 5.0 \times 10^{-9} \text{ lb-mol/dscf} \\ R &= \text{Universal gas constant} = 10.73 \text{ psi-ft}^3/\text{lb-mol-}^\circ\text{R} \\ T &= 60^\circ\text{F standard temperature} = 520^\circ \text{R} \\ P &= \text{Standard atmospheric pressure} = 14.7 \text{ psi}\end{aligned}$$

$$\begin{aligned}\text{Volume SO}_2/\text{exhaust vol.} &= [(5.0 \times 10^{-9} \text{ lb-mol/dscf}) \times (10.73 \text{ psi-ft}^3/\text{lb-mol-}^\circ\text{R}) \times \\ &\quad (520^\circ \text{R})] \div 14.7 \text{ psi} \\ &= 1.9 \times 10^{-6} \text{ dscf-SO}_2/\text{dsc- exhaust} \\ &= 1.9 \text{ ppmv} \ll 2,000 \text{ ppmv}\end{aligned}$$

Compliance with this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

N-4599-3-0 through '-18-0:

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

N-4599-3-0 through '-18-0:

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

District CEQA Findings

The County of San Joaquin (County) is the public agency having principal responsibility for approving the project. As such, the County served as the Lead Agency (CCR §15367). In approving the project, the Lead Agency prepared and adopted a Negative Declaration. The Lead agency filed a Notice of Determination, stating that the environmental document was adopted pursuant to the provisions of CEQA and concluding that the project would not have a significant effect on the environment.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CCR §15381). As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096).

The District has considered the Lead Agency's environmental document. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District

rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct (ATC) permits N-4599-3-0 through '-18-0 subject to the permit conditions on the attached draft Authority to Construct permits in Appendix A.

X. Billing Information

ATC Permit Number	Fee Schedule	Fee Description	Annual Fee
N-4599-3-0 through '-8-0	3020-02-E	1.8 MMBtu/hr Dryer	\$451.00
N-4599-9-0 through '-12-0	3020-02-E	1.6 MMBtu/hr Dryer	\$451.00
N-4599-13-0	3020-02-E	1.9 MMBtu/hr Dryer	\$451.00
N-4599-14-0 and '-15-0	3020-02-E	1.8 MMBtu/hr Dryer	\$451.00
N-4599-16-0 and '17-0	3020-02-E	1.8 MMBtu/hr Dryer	\$451.00
N-4599-18-0	3020-05-E	Total Wastewater Storage Tanks: 119,030 Gallons	\$270.00

XI. Appendices

- Appendix A:** Draft Authority to Construct Permits N-4599-3-0 through '-18-0
- Appendix B:** District BACT Clearinghouse Guideline 1.9.4
- Appendix C:** Top-Down BACT Analysis for VOC Emissions for ATC Permits N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0
- Appendix D:** Revised District BACT Clearinghouse Guideline 4.11.7
- Appendix E:** Top-Down BACT Analysis for VOC Emissions for ATC Permit N-4599-18-0
- Appendix F:** Risk Management Review (RMR) Summary
- Appendix G:** Quarterly Net Emissions Change (QNEC)
- Appendix H:** Source Test Results Summaries

Appendix A

Draft Authority To Construct Permits N-4599-3-0 through '-18-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-3-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC

MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR MILNOR MODEL 6464 NATURAL GAS-FIRED DRYER (0.53 TONS/HR CAPACITY) WITH AN ON-BOARD LINT SCREEN (D1).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on PM10 emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the laundry dryer shall be installed, utilized, and maintained operational. [District Rule 2201]
9. The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-4599-3-0 Dec 26 2017 1:56PM - CHANK Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
12. On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available fro District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-4-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST

STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR MILNOR MODEL 6464 NATURAL GAS-FIRED DRYER (0.53 TONS/HR CAPACITY) WITH AN ON-BOARD LINT SCREEN (D2).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on PM10 emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the laundry dryer shall be installed, utilized, and maintained operational. [District Rule 2201]
9. The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-4599-4-0 - Dec 20 2017 1:56PM - CHANK : Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
12. On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available fro District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-5-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR MILNOR MODEL 6464 NATURAL GAS-FIRED DRYER (0.53 TON/HR CAPACITY) WITH AN ON-BOARD LINT SCREEN (D3)

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on PM10 emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the laundry dryer shall be installed, utilized, and maintained operational. [District Rule 2201]
9. The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-4599-5-0 Dec 26 2017 1:16PM - CHANK Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
12. On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available fro District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-6-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR MILNOR MODEL 6464 NATURAL GAS-FIRED DRYER (0.53 TON/HR CAPACITY) WITH AN ON-BOARD LINT SCREEN (D4)

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on PM10 emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the laundry dryer shall be installed, utilized, and maintained operational. [District Rule 2201]
9. The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-4599-6-0 Dec 26 2017 1:56PM - CHANK Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
12. On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available fro District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-7-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR MILNOR MODEL 6464 NATURAL GAS-FIRED DRYER (0.53 TON/HR CAPACITY) WITH AN ON-BOARD LINT SCREEN (D5).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on PM10 emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the laundry dryer shall be installed, utilized, and maintained operational. [District Rule 2201]
9. The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services
N-4599-7-0 Dec 26 2017 1:52PM - CHANK Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
12. On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available fro District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-8-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR MILNOR MODEL 6464 NATURAL GAS-FIRED DRYER (0.53 TONS/HR CAPACITY) WITH AN ON-BOARD LINT SCREEN (D6).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on PM10 emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the laundry dryer shall be installed, utilized, and maintained operational. [District Rule 2201]
9. The total quantity of natural gas combusted in the laundry dryer shall not exceed 27.3 MMBtu per day or 27,300 cubic feet per day and 9,965 MMBtu in any rolling 12-month period or 9,965,000 cubic feet in any rolling 12-month period (based on a natural gas heating value of 1,000 Btu/cubic feet). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-4599-8-0 Dec 26 2017 1:56 PM - CHANK Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.073 lb-NO_x/MMBtu, 0.111 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain a daily record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
12. On a monthly bases, the permittee shall maintain a rolling 12-consecutive month record of the total quantity of natural gas combusted by the laundry dryer (in MMBtu or cubic feet). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available fro District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-9-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.6 MMBTU/HR JENSON MODEL DTX140 NATURAL GAS-FIRED DRYER (0.11 TONS/HR CAPACITY) WITH A JENSON MODEL DT140 LOW NOX BURNER AND ON-BOARD LINT SCREEN (D19).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 0.34 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NOx/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
9. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-4599-9-0 Nov 30 2011 4:55PM - CHANK Joint Inspection NOT Required

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-10-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.6 MMBTU/HR JENSON MODEL DTX140 NATURAL GAS-FIRED DRYER (0.11 TON/HOUR CAPACITY) WITH A JENSON MODEL DT140 LOW NOX BURNER AND ON-BOARD LINT SCREEN (D20).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 0.34 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NOx/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
9. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

N-4599-10-0 - Nov 30 2017 4:55PM - CHANK - Joint Inspection NOT Required

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-11-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.6 MMBTU/HR JENSON MODEL DTX140 NATURAL GAS-FIRED DRYER (0.11 TON/HOUR CAPACITY) WITH A JENSON MODEL DT140 LOW NOX BURNER AND ON-BOARD LINT SCREEN (D21).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 0.34 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NOx/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
9. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

N-4599-11-0 / Nov 30 2017 4:55PM - CHANK Joint Inspection NOT Required

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-12-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.6 MMBTU/HR JENSON MODEL DTX140 NATURAL GAS-FIRED DRYER (0.11 TON/HOUR CAPACITY) WITH A JENSON MODEL DT140 LOW NOX BURNER AND ON-BOARD LINT SCREEN (D22).

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The laundry dryer shall not be used for the drying of laundered shop towels. [District Rules 2201 and 4102]
6. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]
7. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 0.34 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
8. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NOx/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201]
9. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-4599-12-0 Nov 20 2017 4:55PM - CHANK Joint Inspection NOT Required

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-13-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.9 MMBTU/HR JENSEN MODEL DTX800 NATURAL GAS-FIRED DRYER (0.65 TONS/HOUR CAPACITY) WITH A JENSEN MODEL T444 LOW NOX BURNER AND ON-BOARD LINT SCREEN (D26). THIS UNIT MAY BE USED TO DRY LAUNDERED SHOP TOWELS.

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 2.0 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
6. The total quantity of shop towels processed shall not exceed 38,400 soiled weight pounds in any one day. [District Rule 2201]
7. The total facility-wide quantity of soiled shop towels processed by the dryer shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]
8. VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]
9. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-4599-13-0 - Nov 30 2017 4:55PM - CHANK Join: Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.222 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain daily records of the total quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
12. On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the total facility-wide quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-14-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR ELLIS MODEL 450 WD7664 NATURAL GAS-FIRED DRYER (0.36 TONS/HOUR CAPACITY) WITH A MAXON OVENPAK LE LOW NOX BURNER AND ON-BOARD LINT SCREEN (D27). THIS UNIT MAY BE USED TO DRY LAUNDERED SHOP TOWELS.

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.1 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
6. The total quantity of shop towels processed shall not exceed 21,600 soiled weight pounds in any one day. [District Rule 2201]
7. The total facility-wide quantity of soiled shop towels processed by the dryer shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]
8. VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]
9. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-4599-14-0 Nov 30 2017 4:55PM -- CHANK Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.084 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain daily records of the total quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
12. On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the total facility-wide quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-15-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR ELLIS MODEL 450 WD7664 NATURAL GAS-FIRED DRYER (0.36 TONS/HOUR CAPACITY) WITH A MAXON OVENPAK LE LOW NOX BURNER AND ON-BOARD LINT SCREEN (D28). THIS UNIT MAY BE USED TO DRY LAUNDERED SHOP TOWELS.

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.1 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
6. The total quantity of shop towels processed shall not exceed 21,600 soiled weight pounds in any one day. [District Rule 2201]
7. The total facility-wide quantity of soiled shop towels processed by the dryer shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]
8. VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]
9. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-4599-15-0 Nov 30 2017 4:55PM - CHANK - Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.084 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain daily records of the total quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
12. On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the total facility-wide quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-16-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR ELLIS MODEL 675 WD7673 NATURAL GAS-FIRED DRYER (0.55 TONS/HOUR CAPACITY) WITH A MAXON OVENPAK LE LOW NOX BURNER AND ON-BOARD LINT SCREEN (D29). THIS UNIT MAY BE USED TO DRY LAUNDERED SHOP TOWELS.

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
6. The total quantity of shop towels processed shall not exceed 32,400 soiled weight pounds in any one day. [District Rule 2201]
7. The total facility-wide quantity of soiled shop towels processed by the dryer shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]
8. VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]
9. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-4599-16-0 Nov 30 2017 4:55PM - CHANIC - Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.084 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain daily records of the total quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
12. On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the total facility-wide quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-17-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

LAUNDRY DRYING OPERATION CONSISTING OF ONE 1.8 MMBTU/HR ELLIS MODEL 675 WD7673 NATURAL GAS-FIRED DRYER (0.55 TONS/HOUR CAPACITY) WITH A MAXON OVENPAK LE LOW NOX BURNER AND ON-BOARD LINT SCREEN (D30). THIS UNIT MAY BE USED TO DRY LAUNDERED SHOP TOWELS.

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. PM10 emissions from the laundry dryer (including natural gas combustion) shall not exceed 1.7 pounds in any one day (based on an emission rate of 0.13 pounds/ton of laundry dried). [District Rule 2201]
6. The total quantity of shop towels processed shall not exceed 32,400 soiled weight pounds in any one day. [District Rule 2201]
7. The total facility-wide quantity of soiled shop towels processed by the dryer shall not exceed 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rules 2201 and 4102]
8. VOC emissions from the drying of shop towels shall not exceed 0.00201 pounds per pound of shop towels processed by the dryer. [District Rule 2201]
9. The laundry dryer shall only be fired on PUC-regulated natural gas. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-4599-17-0 | Nov 30 2017 4:55PM - CHANK - Joint Inspection NOT Required

10. Emissions from the combustion of natural gas in the laundry dryer shall not exceed any of the following limits: 0.0364 lb-NO_x/MMBtu, 0.084 lb-CO/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SO_x/MMBtu. [District Rule 2201]
11. During each day of operation, the permittee shall maintain daily records of the total quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
12. On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the total facility-wide quantity of shop towels processed by the dryers (in soiled weight pounds). [District Rules 1070 and 2201]
13. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-4599-18-0

LEGAL OWNER OR OPERATOR: ARAMARK UNIFORM & CAREER APPAREL LLC
MAILING ADDRESS: 7679 S LONGE ST
STOCKTON, CA 95206-4929

LOCATION: 7679 S LONGE ST
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
LAUNDERING OPERATION CONSISTING OF FIFTEEN WASHING MACHINES, WASTEWATER SETTLING PIT WITH WASTE SCREEN, AND WASTEWATER TREATMENT SYSTEM.

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
4. All soiled shop towels shall be stored in closed containers until they are washed. [District Rule 2201]
5. Neither print towels nor furniture towels shall be laundered at this facility. Any print towels or furniture towels sent to this facility will be bagged and stored outside in a covered area prior to being sent off-site for laundering. [District Rule 2201]
6. No shop towels that contain, or are saturated with free liquid shall be laundered at this facility. Shop towels that contain free liquid shall not be received from any customer's facilities. [District Rule 2201]
7. Soiled shop towels shall be washed separately from other laundry. [District Rule 2201]
8. The total quantity of soiled shop towels washed shall not exceed 146,400 soiled weight pounds in any one day and 1,450,000 soiled weight pounds in any rolling 12-month period. [District Rule 2201]
9. VOC emissions from the washing of soiled shop towels shall not exceed 0.00049 pounds per pound of soiled shop towels washed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

DRAFT

Arnaud Marjolle, Director of Permit Services

N-4599-18-0 Dec 26 2017 1:30PM - CHANK Joint Inspection NOT Required

10. The total quantity of VOC containing detergents used shall not exceed 137 gallons in any one day and 35,000 gallons in any rolling 12-month period. [District Rule 2201]
11. The total quantity of VOC containing detergent boosters used shall not exceed 12 gallons in any one day and 1,500 gallons in any rolling 12-month period. [District Rule 2201]
12. The maximum VOC content of the VOC containing detergents used shall not exceed 0.064 lb-VOC/gallon. [District Rule 2201]
13. The maximum VOC content of the VOC containing detergent boosters used shall not exceed 1.40 lb-VOC/gallon. [District Rule 2201]
14. During each day of operation, the permittee shall maintain daily records of the following: (a). Total facility-wide quantity of soiled shop towels processed by the washing machines (in soiled weight pounds); (b). Total facility-wide quantity of VOC containing detergents used in the washing machines (in gallons); (c). Total facility-wide quantity of VOC containing detergent boosters used in the washing machines (in gallons). [District Rules 1070 and 2201]
15. On a monthly basis, the permittee shall maintain a rolling 12-consecutive month record of the following: (a). Total facility-wide quantity of shop towels processed by the washing machines (in soiled weight pounds); (b). Total facility-wide quantity of VOC containing detergents used in the washing machines (in gallons); (c). Total facility-wide quantity of VOC containing detergent boosters used in the washing machines (in gallons). [District Rules 1070 and 2201]
16. The permittee shall maintain records of each VOC containing detergent and detergent booster used at the facility. The records shall include the manufacturer's product data sheet or safety data sheet (SDS) and shall state the VOC content in grams/liter or pounds/gallon. [District Rules 1070 and 2201]
17. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

DRAFT

Appendix B
District BACT Clearinghouse Guideline 1.9.4

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.9.4*

Last Update: 10/04/1999

Dryer - Natural Gas Fired, Solvent-Laden Towels, = or < 950 lb towels/day

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		1. VOC capture and control with thermal oxidation. 2. VOC capture and control with catalytic oxidation. 3. VOC capture and control with carbon adsorption.	
NOx	0.061 lb NOx /MMBtu natural gas fired burner	0.025 lb NOx /MMBtu natural gas fired burner	Electrical Dryer
CO	0.348 lb CO/MMBtu natural gas fired burner	0.0375 lb CO/MMBtu natural gas fired burner	Electrical Dryer

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

Appendix C

**Top-Down BACT Analysis for VOC Emissions for ATC Permits
N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0**

Top-Down BACT Analysis for ATC Permits N-4599-13-0, '-14-0, '-15-0, '-16-0, and '-17-0

BACT Guideline 1.9.4 applies to natural gas-fired laundry dryers used on washed solvent-laden towels. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

BACT Analysis for VOC Emissions:

Step 1 - Identify All Control Technologies

BACT Guideline 1.9.4 lists for the following control technologies:

1. VOC Capture and Control with Thermal Oxidation.
2. VOC Capture and Control with Catalytic Oxidation.
3. VOC Capture and Control with Carbon Adsorption.

Step 2 - Eliminate Technologically Infeasible Options

None of the options are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. VOC Capture and Control with Thermal Oxidation (98% Control Efficiency).
[Technologically Feasible]
2. VOC Capture and Control with Catalytic Oxidation (98% Control Efficiency).
[Technologically Feasible]
3. VOC Capture and Control with Carbon Adsorption (95% Control Efficiency).
[Technologically Feasible]

Step 4 - Cost Effectiveness Analysis

Cost Effective Threshold:

The District's BACT Policy establishes annual cost thresholds for imposed control based upon the amount of pollutants abated by the controls. If the cost of control is at or below the threshold, the control is considered cost effective. If the cost exceeds the threshold, it is not cost effective and the control is not required. The cost effective threshold for VOC is \$17,500/ton.

Industry Standard Emissions:

Industry standard emissions are considered to be what is available to the industry as standard equipment. The VOC emissions from the dryer are primarily from the drying of the laundered solvent-laden shop towels. The industry standard for the drying of shop towels is to not use any type of VOC capture and control equipment. The uncontrolled Industry Standard Emissions (ISE) will be equal to the calculated annual VOC emissions from the proposed five laundry dryers used for the drying of laundered shop towels, which are dryers D26 through D30. Therefore:

$$\begin{aligned}
\text{Annual ISE}_{\text{VOC}} &= \text{Annual PE2}_{\text{VOC/N-4599-13-0}} \text{ (lb/year)} + \text{Annual PE2}_{\text{VOC/N-4599-14-0 \& -15-0}} \text{ (lb/year)} \\
&\quad + \text{Annual PE2}_{\text{VOC/N-4599-16-0 \& -17-0}} \\
&= 849 \text{ lb-VOC/year} + (524 \text{ lb-VOC/year} \times 2) + (728 \text{ lb-VOC/year} \times 2) \\
&= 3,353 \text{ lb-VOC/year}
\end{aligned}$$

Option 1 and 2: Capture and Control System served by a Thermal/Catalytic Oxidizer

(A). Emission Reduction:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and oxidizer destruction efficiency of 98%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned}
\text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{VOC}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\
&= 3,353 \text{ lb-VOC/year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.98 \\
&= 1.64 \text{ ton-VOC/year}
\end{aligned}$$

(B). Annualized Capital Cost to Purchase and Install a Catalytic Oxidizer with a VOC Capture System:

On May 16, 2017, Aramark Uniform & Career Apparel LLC was provided a cost estimate from Short Elliott Hendrickson Inc. (Consultant) to install a VOC capture and control system vented to a catalytic oxidizer serving the five laundry dryers (D26 thru D30) triggering BACT for this project. The purchase and installation cost of a new catalytic oxidizer is estimated to be \$957,000, based on USEPA Clean Air Control Technology Fact Sheet for Catalytic Incinerators at \$22/cfm for an estimated total air flow rate of 43,500 cfm. Therefore:

Total Control Equipment & Installation Cost = \$957,000

The annualized control equipment capital cost for this VOC control system is calculated using the following equation:

$$A = (P) \left[\frac{(i)(1+i)^n}{(1+i)^n - 1} \right] \text{ where:}$$

A: Equivalent annual capital cost of the control equipment

P: Present value of the control equipment

i: Interest rate (District policy is to use 10%)

n: Equipment life (District policy is to use 10 years)

$$A = (\$957,000) \times [(0.1) \times (1+0.1)^{10} / (1+0.1)^{10} - 1] = \$155,747/\text{year}$$

(C). Annual Operating and Maintenance Costs for a Catalytic Oxidizer:

The applicant's consultant (Short Elliott Hendrickson Inc.) also provided a cost estimate for annual operating and maintenance costs for the use of a catalytic oxidizer. The operating and maintenance costs of a catalytic oxidizer is estimated to be \$174,000, based on USEPA Clean Air Control Technology Fact Sheet for Catalytic Incinerators at \$4/cfm for an estimated total air flow rate of 43,500 cfm. Therefore:

Total Annual Operating and Maintenance Cost = \$174,000/year

(D). Total Annual Costs:

The total annual cost to install and operate a catalytic oxidizer is the following:

$$\begin{aligned} \text{Total Annual Cost} &= \text{Annualized Control Equipment Cost (\$/year)} \\ &\quad + \text{Annual Operating and Maintenance Cost (\$/year)} \\ &= \$155,747/\text{year} + \$174,000/\text{year} \\ &= \mathbf{\$329,747/\text{year}} \end{aligned}$$

(E). Cost Effectiveness of a Catalytic Oxidizer:

$$\begin{aligned} \text{Cost Effectiveness} &= \text{Total Annual Cost (\$/year)} \div \text{Emission Reduction (ton-VOC/year)} \\ &= \$329,747/\text{year} \div 1.64 \text{ ton-VOC/year} \\ &= \mathbf{\$201,065/\text{ton-VOC}} \end{aligned}$$

The cost to install and operate a catalytic oxidizer is \$201,065/ton, which is greater than the District's VOC cost-effectiveness threshold of \$17,500/ton. Therefore, this VOC control option is **not cost effective** and is being removed from consideration for this project.

Option 3: Capture and Control System served by a Carbon Adsorption System

(A). Emission Reduction:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and carbon adsorption system control efficiency of 95%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned} \text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{voc}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\ &= 3,353 \text{ lb-VOC}/\text{year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.95 \\ &= \mathbf{1.59 \text{ ton-VOC}/\text{year}} \end{aligned}$$

(B). Annualized Capital Cost to Purchase and Install a Carbon Adsorption System with a VOC Capture System:

The applicant's consultant (Short Elliott Hendrickson Inc.) also provided a cost estimate to purchase and install a VOC capture and control system vented to a carbon adsorption system serving the five laundry dryers (D26 thru D30) triggering BACT for this project. The purchase and installation costs of the carbon adsorption system is estimated to be \$520,000. Therefore:

$$\text{Total Control Equipment \& Installation Cost} = \$520,000$$

The annualized control equipment capital cost for this VOC control system is calculated using the following equation:

$$A = (P) \left[\frac{(i)(1+i)^n}{(1+i)^n - 1} \right] \text{ where:}$$

A: Equivalent annual capital cost of the control equipment

- P: Present value of the control equipment
- I: Interest rate (District policy is to use 10%)
- n: Equipment life (District policy is to use 10 years)

$$A = (\$520,000) \times [(0.1) \times (1+0.1)^{10} / (1+0.1)^{10} - 1] = \$84,628/\text{year}$$

(C). Annual Operating and Maintenance Cost for a Carbon Adsorption System:

The following operating and maintenance costs were estimated and provided by Short Elliott Hendrickson Inc. on May 16, 2017, which only includes the carbon replacement costs at \$2/pound/month for the five laundry dryers (D26 thru D30) triggering BACT for this project. Therefore:

$$\text{Total Annual Carbon Replacement Costs} = \$804,000/\text{year}$$

(D). Total Annual Costs:

The total annual cost to install and operate a carbon adsorption system is the following:

$$\begin{aligned} \text{Total Annual Cost} &= \text{Annualized Control Equipment Cost (\$/year)} \\ &\quad + \text{Annual Carbon Replacement Costs (\$/year)} \\ &= \$84,628/\text{year} + \$804,000/\text{year} \\ &= \mathbf{\$888,628/\text{year}} \end{aligned}$$

(E). Cost Effectiveness of a Carbon Adsorption System:

$$\begin{aligned} \text{Cost Effectiveness} &= \text{Total Annual Cost (\$/year)} \div \text{Emission Reduction (ton-VOC/year)} \\ &= \$888,628/\text{year} \div 1.59 \text{ ton-VOC/year} \\ &= \mathbf{\$558,886/\text{ton-VOC}} \end{aligned}$$

The cost to install and operate a carbon adsorption system is estimated to be \$22,939/ton, which is greater than the District's VOC cost-effectiveness threshold of \$17,500/ton. Therefore, this VOC control option is **not cost effective** and is being removed from consideration for this project.

Step 5 - Select BACT

The applicant is proposing to limit the VOC emissions to not exceed 0.00201 lb/lb of shop towels processed without the use of any control device. The applicant will be utilizing the most stringent control technique that has not been eliminated in the Top-Down BACT analysis above. Therefore, BACT for VOC is being proposed.

Appendix D

Revised BACT District BACT Clearinghouse Guideline 4.11.7

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 4.11.7

Emission Unit: Shop Towel Laundering consisting of Sorting Tables, Washing Machines, and Wastewater Treatment System

Industry Type: Commercial Laundry

Last Update: May 9, 2016

Equipment Rating: None

Pollutants	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Evaporative Loss Minimization (Store shop towels in closed containers.)	<ol style="list-style-type: none"> 1. At least 98% overall capture and control using a properly designed capture system served by a thermal/catalytic oxidizer, or other equivalent control achieving device or technology. 2. At least 95% overall capture and control using a properly designed capture system served by a carbon adsorption system, or other equivalent control achieving device or technology. 	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

*This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)

Appendix E

Top-Down BACT Analysis for VOC Emissions for ATC Permit N-4599-18-0

Top-Down BACT Analysis for ATC Permit N-4599-18-0

BACT Guideline 4.11.7 applies to the shop towel laundering operation consisting of washing machines and associated wastewater treatment system. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

BACT Analysis for VOC Emissions:

Step 1 - Identify All Control Technologies

BACT Guideline 4.11.7 lists for the following control technologies:

1. At least 98% overall capture and control using a properly designed capture system served by a thermal/catalytic oxidizer, or other equivalent control achieving device or technology.
2. At least 95% overall capture and control using a properly designed capture system served by a carbon adsorption system, or other equivalent control achieving device or technology.
3. Evaporative Loss Minimization (Store shop towels in closed containers).

Step 2 - Eliminate Technologically Infeasible Options

None of the options are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

It will be assumed that a properly designed capture system will capture 100% of the VOCs and HAPs from the washing machines, wastewater settling pit, and wastewater treatment room. Therefore:

Ranking of VOC Control Technologies		
Control Method	Control Efficiency (%)	Achieved in Practice
1. VOC capture and control system using a properly designed capture system served by a thermal/catalytic oxidizer or other equivalent control achieving device or technology.	98.0 ⁽⁹⁾	No
2. VOC Capture and Control System with a Carbon Adsorption System or other equivalent control achieving device or technology.	95.0 ⁽¹⁰⁾	No
3. Evaporative loss minimization (Store solvent-laden towels in closed containers).	0	Yes ⁽¹¹⁾

⁹ Thermal or catalytic oxidation for VOC and HAP control is a common control technique. It is District practice to assume that a VOC control efficiency of 98% is readily achievable.

¹⁰ Carbon adsorption for VOC control is a common control technique. It is District practice to assume that a VOC control efficiency of 95% readily achievable.

¹¹ Previously utilized by Aramark Uniform Services under permit C-45-10-0.

Step 4 - Cost Effectiveness Analysis

Cost Effective Threshold:

The District's BACT Policy establishes annual cost thresholds for imposed control based upon the amount of pollutants abated by the controls. If the cost of control is at or below the threshold, the control is considered cost effective. If the cost exceeds the threshold, it is not cost effective and the control is not required. The cost effective threshold for VOC is \$17,500/ton.

Industry Standard Emissions:

Industry standard emissions are considered to be what is available to the industry as standard equipment. For shop towel laundering operations, the industry standard is to not use any type of VOC capture and control equipment. The uncontrolled Industry Standard Emissions (ISE) will be equal to the calculated annual VOC emissions from the proposed washing machines, wastewater settling pit, and wastewater treatment room. Therefore:

$$\text{Annual ISE}_{\text{VOC}} = \text{Annual PE2}_{\text{VOC/N-4599-18-0}} = 5,052 \text{ lb-VOC/year}$$

Option 1: Capture and Control System served by a Thermal/Catalytic Oxidizer

(A). Emission Reduction:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and oxidizer destruction efficiency of 98%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned} \text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{VOC}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\ &= 5,052 \text{ lb-VOC/year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.98 \\ &= 2.48 \text{ ton-VOC/year} \end{aligned}$$

(B). Annualized Capital Cost to Purchase and Install a Catalytic Oxidizer with a VOC Capture System:

On May 16, 2017, Aramark Uniform & Career Apparel LLC was provided a cost estimate from Short Elliott Hendrickson Inc. (Consultant) to install a VOC capture and control system vented to a catalytic oxidizer serving the washing machines and wastewater treatment equipment located at the wash floor (main building) and wastewater treatment equipment room. The purchase and installation cost of a new catalytic oxidizer is estimated to be \$3,592,600, based on USEPA Clean Air Control Technology Fact Sheet for Catalytic Incinerators at \$22/cfm for an estimated total air flow rate of 163,300 cfm. Therefore:

$$\text{Total Control Equipment \& Installation Cost} = \$3,592,600$$

The annualized control equipment capital cost for this VOC control system is calculated using the following equation:

$$A = (P) \left[\frac{(i)(1+i)^n}{(1+i)^n - 1} \right] \text{ where:}$$

- A: Equivalent annual capital cost of the control equipment
- P: Present value of the control equipment
- I: Interest rate (District policy is to use 10%)
- n: Equipment life (District policy is to use 10 years)

$$A = (\$3,592,600) \times [(0.1) \times (1+0.1)^{10} / (1+0.1)^{10} - 1] = \$584,679/\text{year}$$

(C). Annual Operating and Maintenance Costs for a Catalytic Oxidizer:

The applicant's consultant (Short Elliott Hendrickson Inc.) also provided a cost estimate for annual operating and maintenance costs for the use of a catalytic oxidizer. The operating and maintenance costs of a catalytic oxidizer is estimated to be \$653,200, based on USEPA Clean Air Control Technology Fact Sheet for Catalytic Incinerators at \$4/cfm for an estimated total air flow rate of 163,300 cfm. Therefore:

$$\text{Total Annual Operating and Maintenance Cost} = \$653,200/\text{year}$$

(D). Total Annual Costs:

The total annual cost to install and operate a catalytic oxidizer is the following:

$$\begin{aligned} \text{Total Annual Cost} &= \text{Annualized Control Equipment Cost (\$/year)} \\ &\quad + \text{Annual Operating and Maintenance Cost (\$/year)} \\ &= \$584,679/\text{year} + \$653,200/\text{year} \\ &= \mathbf{\$1,237,879/\text{year}} \end{aligned}$$

(E). Cost Effectiveness of a Catalytic Oxidizer:

$$\begin{aligned} \text{Cost Effectiveness} &= \text{Total Annual Cost (\$/year)} \div \text{Emission Reduction (ton-VOC/year)} \\ &= \$1,237,879/\text{year} \div 2.48 \text{ ton-VOC/year} \\ &= \mathbf{\$499,145/\text{ton-VOC}} \end{aligned}$$

The cost to install and operate a catalytic oxidizer is \$499,145/ton, which is greater than the District's VOC cost-effectiveness threshold of \$17,500/ton. Therefore, this VOC control option is **not cost effective** and is being removed from consideration for this project.

Option 2: Capture and Control System served by a Carbon Adsorption System

(A). Emission Reduction:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and carbon adsorption system control efficiency of 95%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned} \text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{voc}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\ &= 5,052 \text{ lb-VOC/year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.95 \\ &= \mathbf{2.40 \text{ ton-VOC/year}} \end{aligned}$$

(B). Annualized Capital Cost to Purchase and Install a Carbon Adsorption System with a VOC Capture System:

The applicant's consultant (Short Elliott Hendrickson Inc.) also provided a cost estimate to purchase and install a VOC capture and control system vented to a carbon adsorption system serving the washing machines and wastewater treatment equipment located at the wash floor (main building) and wastewater treatment equipment room. The purchase and installation costs of the carbon adsorption system is estimated to be \$1,094,000. Therefore:

Total Control Equipment & Installation Cost = \$1,094,000

The annualized control equipment capital cost for this VOC control system is calculated using the following equation:

$$A = (P) \left[\frac{(i)(1+i)^n}{(1+i)^n - 1} \right] \text{ where:}$$

A: Equivalent annual capital cost of the control equipment

P: Present value of the control equipment

i: Interest rate (District policy is to use 10%)

n: Equipment life (District policy is to use 10 years)

$$A = (\$1,094,000) \times [(0.1) \times (1+0.1)^{10} / (1+0.1)^{10} - 1] = \$178,043/\text{year}$$

(C). Annual Operating and Maintenance Cost for a Carbon Adsorption System:

The following operating and maintenance costs were estimated and provided by Short Elliott Hendrickson Inc. on May 16, 2017, which only includes the carbon replacement costs at \$2/pound/month for the washing machines and wastewater treatment equipment. Therefore:

Total Annual Carbon Replacement Costs = \$1,621,400/year

(D). Total Annual Costs:

The total annual cost to install and operate a carbon adsorption system is the following:

$$\begin{aligned} \text{Total Annual Cost} &= \text{Annualized Control Equipment Cost (\$/year)} \\ &\quad + \text{Annual Carbon Replacement Costs (\$/year)} \\ &= \$178,043/\text{year} + \$1,621,400/\text{year} \\ &= \mathbf{\$1,799,443/\text{year}} \end{aligned}$$

(E). Cost Effectiveness of a Carbon Adsorption System:

$$\begin{aligned} \text{Cost Effectiveness} &= \text{Total Annual Cost (\$/year)} \div \text{Emission Reduction (ton-VOC/year)} \\ &= \$1,799,443/\text{year} \div 2.40 \text{ ton-VOC/year} \\ &= \mathbf{\$749,768/\text{ton-VOC}} \end{aligned}$$

The cost to install and operate a carbon adsorption system is estimated to be \$749,768/ton, which is greater than the District's VOC cost-effectiveness threshold of \$17,500/ton. Therefore, this VOC control option is **not cost effective** and is being removed from consideration for this project.

Step 5 - Select BACT

Since the higher-ranked options are not cost effective, the remaining, Achieved in Practice option is determined to be BACT. Therefore, BACT for this operation is satisfied with using closed containers to store the solvent-laden shop towels for evaporative loss minimization.

Appendix F
Risk Management Review (RMR) Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Kai Chan – Permit Services
 From: Georgia Stewart – Technical Services
 Date: July 28, 2017
 Facility Name: Aramark Uniform & Career Apparel, LLC
 Location: 7679 S Longe St, Stockton, CA
 Application #(s): N-4599-3-0 thru 18-0
 Project #: N-1171225

A. RMR SUMMARY

RMR Summary						
Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required?	Special Permit Requirements?
Unit 3-0	3.75E-02	0.00	0.00	4.57E-10	No	Yes
Unit 4-0	3.75E-02	0.00	0.00	4.56E-10	No	Yes
Unit 5-0	3.75E-02	0.00	0.00	4.50E-10	No	Yes
Unit 6-0	3.75E-02	0.00	0.00	4.45E-10	No	Yes
Unit 7-0	3.75E-02	0.00	0.00	4.39E-10	No	Yes
Unit 8-0	3.75E-02	0.00	0.00	4.36E-10	No	Yes
Unit 9-0	5.28E-02	0.00	0.00	8.21E-10	No	Yes
Unit 10-0	5.28E-02	0.00	0.00	8.13E-10	No	Yes
Unit 11-0	5.28E-02	0.00	0.00	8.04E-10	No	Yes
Unit 12-0	5.28E-02	0.00	0.00	7.91E-10	No	Yes
Unit 13-0	3.40E-01	0.00	0.00	2.95E-09	No	No
Unit 14-0	2.20E-01	0.00	0.00	1.59E-09	No	No
Unit 15-0	2.20E-01	0.00	0.00	1.55E-09	No	No
Unit 16-0	2.94E-01	0.00	0.00	1.91E-09	No	No
Unit 17-0	2.94E-01	0.00	0.00	1.86E-09	No	No
Unit 18-0	8.55E-01	0.00	0.00	1.38E-08	No	No
Exempt Determination (Leonard Tunnel Dryer) ¹	2.51E-02 ¹	2.00E-05 ¹	1.00E-05 ¹	3.85E-10 ¹	No	Yes
Exempt Determination (12 Lavatech Dryers) ¹	5.94E-01 ¹	2.40E-04 ¹	2.40E-04 ¹	9.70E-09 ¹	No	Yes
Exempt Determination (3 Unimac Pony Dryers) ¹	3.09E-02 ¹	1.34E-05 ¹	3.00E-05 ¹	6.06E-10 ¹	No	Yes
Project Totals	>1	6.05E-03	3.19E-04	2.95E-08		
Facility Totals	>1	6.05E-03	3.19E-04	2.95E-08		

¹Permit exemption to be based on engineering determination. The risk scores will be added to the project and facility totals if these emission units have been deemed to require a permit.

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Units # 3-0 thru 12-0

1. These units shall not be used to dry laundered shop towels.

Units # 13-0 thru 17-0

No special requirements are required.

Unit # 18-0

No special requirements are required.

Exempt Determination Laundry Operation (Dryers)

1. The permitting engineer shall inform Technical Services if permits are required for these unit(s) so Technical Services can update the facility risk score.
2. These units shall not be used to dry laundered shop towels.

B. RMR REPORT

I. Project Description

Technical Services received a request on June 26, 2017, to perform an Ambient Air Quality Analysis and a Risk Management Review for a proposed modification of a laundry and drying operation. Units 3-0 thru 8-0 consist of six laundry drying operations each consisting of one 1.8 MMBtu/hr Milnor Model 6464 natural gas-fired dryer. Units 9-0 thru 12-0 consist of four laundry drying operations each consisting of one 1.6 MMBtu/hr Jenson Model DTX140 natural gas-fired dryer. Units 3-0 thru 12-0 will not be used to dry laundered shop towels. A shop towel drying operation consisting of the following units: Unit 13-0 consisting of one 1.9 MMBtu/hr Jenson Model DTX800 natural gas-fired dryer; Units 14-0 and 15-0 consisting of two laundry drying operations each consisting of one 1.8 MMBtu/hr Ellis Model 450 WD7664 natural gas-fired dryer; and Units 16-0 and 17-0 consisting to two laundry drying operations each consisting of one Ellis Model 675 WD7673 natural gas-fired dryer. The laundering operation (Unit 18-0) consists of 15 washing machines, wastewater settling pit, and wastewater treatment system. The building is not under negative pressure; however, it is assumed emissions from Unit 18-0 will exhaust through the buildings 14 exhaust fans. A permit exemption determination for 16 (non-soiled shop towel) operations consisting of the following drying operations: one steam tunnel 1.5 MMBtu/hr Leonard natural gas-fired dryer, twelve 1.5 MMBtu/hr Lavatech natural gas-fired dryers and three 0.395 MMBtu/hr Unimac Pony natural gas dryers.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion. For the soiled shop towel washing, drying and waste water treatment operations, TAC emissions were calculated using processing rates provided by the engineer and a source test provided by Aramark from their facility in Sacramento, CA, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). The facility's prioritization score was greater than 1.0. Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 from Stockton to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 3-0 thru 8-0			
Source Type	Point*	Location Type	Rural
Stack Height (m)	13.838	Closest Receptor (m)	64
Stack Diameter. (m)	0.66	Type of Receptor	Business
Stack Exit Velocity (m/s)	4.61	Max Hours per Year	5536
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0018	NG Usage (MMscf/yr)	9.965

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters Unit 9-0 thru 12-0			
Source Type	Point*	Location Type	Rural
Stack Height (m)	12.95	Closest Receptor (m)	64
Stack Diameter. (m)	0.508	Type of Receptor	Business
Stack Exit Velocity (m/s)	7.51	Max Hours per Year	8760
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0016	NG Usage (MMscf/yr)	14.016

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters Unit 13-0			
Source Type	Point*	Location Type	Rural
Stack Height (m)	13.72	Closest Receptor (m)	64
Stack Diameter. (m)	0.61	Type of Receptor	Business
Stack Exit Velocity (m/s)	6.24	Max Hours per Year	8760
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0019	NG Usage (MMscf/yr)	16.644
Shop Towel Drying Rate (lb/hr)	1,600	Shop Towel Drying Rate (lb/yr)	377,000

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters Units 14-0 and 15-0			
Source Type	Point*	Location Type	Rural
Stack Height (m)	13.72	Closest Receptor (m)	64
Stack Diameter. (m)	0.57	Type of Receptor	Business
Stack Exit Velocity (m/s)	6.35	Max Hours per Year	8760
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0018	NG Usage (MMscf/yr)	15.768
Shop Towel Drying Rate (lb/hr)	900	Shop Towel Drying Rate (lb/yr)	217,500

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters Units 16-0 and 17-0			
Source Type	Point*	Location Type	Rural
Stack Height (m)	13.72	Closest Receptor (m)	64
Stack Diameter. (m)	0.57	Type of Receptor	Business
Stack Exit Velocity (m/s)	6.35	Max Hours per Year	8760
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0018	NG Usage (MMscf/yr)	15.768
Shop Towel Drying Rate (lb/hr)	1,350	Shop Towel Drying Rate (lb/yr)	319,000

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters Unit 18-0				
Source Type	Point*	Location Type		Rural
Shop Towel Laundry Rate (lb/hr)	6,100	Closest Receptor (m)		64
Shop Towel Laundry Rate (lb/yr)	1,450,000	Type of Receptor		Business
Point Source (Exhaust Fans)*	U18W1 ¹	U18W2 thru U18W6, U18W9 & U18W12 ²	U18W7, U18W8 & U18W13 ³	U18W10, U18W11 & U18W14 ⁴
Modeled Emission Rate (g/s)	0.071	0.071 (each)	0.071 (each)	0.071 (each)
Stack Height (m)	10.97	10.97	10.97	10.97
Stack Diameter (m)	1.02	0.81	0.81	0.81
Stack Exit Velocity (m/s)	10.48	9.1	11.37	10.0
Stack Exit Temp. (K)	299.66	299.66	299.66	299.66

* Modeled using AERMOD's option for capped stack release.

¹ REF-1 (U18W1)

² REF-2 thru 6, REF-9 & 12 (U18W2 thru U18W6, U18W9 & U18W12)

³ REF-7, 8 & 13 (U18W7, U18W8 & U18W13)

⁴ REF10, 11 & 14 (U18W10, U18W11 & U18W14)

Analysis Parameters Permit Exemption Determination Unit (Leonard Tunnel Dryer)			
Source Type	Point*	Location Type	Rural
Stack Height (m)	12.8	Closest Receptor (m)	64
Stack Diameter. (m)	0.41	Type of Receptor	Business
Stack Exit Velocity (m/s)	14.0	Max Hours per Year	4431
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0015	NG Usage (MMscf/yr)	6.65

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters Permit Exemption Determination Units - 12 Lavatech Dryers (each)			
Source Type	Point*	Location Type	Rural
Stack Height (m)	11.77	Closest Receptor (m)	64
Stack Diameter. (m)	0.59	Type of Receptor	Business
Stack Exit Velocity (m/s)	6.44	Max Hours per Year	8760
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.0015	NG Usage (MMscf/yr)	13.14

* Modeled using AERMOD's option for horizontal stack release.

Analysis Parameters			
Permit Exemption Determination Units – 3 Pony Dryers (each)			
Source Type	Point*	Location Type	Rural
Stack Height (m)	12.96	Closest Receptor (m)	64
Stack Diameter. (m)	0.41	Type of Receptor	Business
Stack Exit Velocity (m/s)	14.0	Max Hours per Year	8760
Stack Exit Temp. (°K)	360.77	Fuel Type	NG
NG Usage (MMscf/hr)	0.000395	NG Usage (MMscf/yr)	3.46

* Modeled using AERMOD's option for horizontal stack release.

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x, and PM₁₀ with the emission rates below: (Unit 18-0 has only VOC emissions.)

Unit #	NO _x (Lbs.)		SO _x (Lbs.)		CO (Lbs.)		PM ₁₀ (Lbs.)	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
3-0	0.131	727.4	0.0051	28.4	0.2	1106.1	1.92	681.2
4-0	0.131	727.4	0.0051	28.4	0.2	1106.1	1.92	681.2
5-0	0.131	727.4	0.0051	28.4	0.2	1106.1	1.92	681.2
6-0	0.131	727.4	0.0051	28.4	0.2	1106.1	1.92	681.2
7-0	0.131	727.4	0.0051	28.4	0.2	1106.1	1.92	681.2
8-0	0.131	727.4	0.0051	28.4	0.2	1106.1	1.92	681.2
9-0	0.058	510.2	0.00456	39.9	0.355	3111.6	0.446	162.9
10-0	0.058	510.2	0.00456	39.9	0.355	3111.6	0.446	162.9
11-0	0.058	510.2	0.00456	39.9	0.355	3111.6	0.446	162.9
12-0	0.058	510.2	0.00456	39.9	0.355	3111.6	0.446	162.9
13-0	0.069	605.8	0.0054	47.4	0.422	3695.0	2.009	733.2
14-0	0.0655	574.0	0.00513	44.9	0.151	1324.5	1.181	431.0
15-0	0.0655	574.0	0.00513	44.9	0.151	1324.5	1.181	431.0
16-0	0.0655	574.0	0.00513	44.9	0.151	1324.5	1.699	620.2
17-0	0.0655	574.0	0.00513	44.9	0.151	1324.5	1.699	620.2

Exempt Determination Laundry Operation (Dryers)

1. The permitting engineer shall inform Technical Services if permits are required for these unit(s) so Technical Services can perform an AAQA that includes these unit(s).

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

	Background Site	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Stockton-Hazelton (2016)	Pass	X	Pass	X	X
NO _x	Stockton-Hazelton (2016)	Pass ¹	X	X	X	Pass
SO _x	Fresno – Garland (2016)	Pass	Pass	X	Pass	Pass
PM ₁₀	Stockton-Hazelton (2016)	X	X	X	Pass ²	Pass ²
PM _{2.5}	Stockton-HD (2015)	X	X	X	Pass ³	Pass ³

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

³The court has vacated EPA's PM_{2.5} SILs. Until such time as new SIL values are approved, the District will use the corresponding PM₁₀ SILs for both PM₁₀ and PM_{2.5} analyses.

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. AAQA Summary
- E. Facility Summary

Appendix G

Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile. It is assumed that the annual emissions are evenly distributed throughout the year. Using the values in Section VII.C.2. in the evaluation above the QNEC is calculated as follows:

$$\text{QNEC (lb/quarter)} = \text{Annual PE2 (lb/year)} \div 4 \text{ Quarters/year}$$

QNEC for ATC Permits N-4599-3-0, '-2-0, '-3-0, '-4-0, '-5-0, '-6-0, '-7-0, and '-8-0					
Pollutant	Annual PE2 (lb/year)	1 st Quarter (lb/quarter)	2 nd Quarter (lb/quarter)	3 rd Quarter (lb/quarter)	4 th Quarter (lb/quarter)
NOx	727	181	182	182	182
CO	1,106	276	276	277	277
VOC	55	13	14	14	14
PM ₁₀	604	151	151	151	151
SOx	28	7	7	7	7

QNEC for ATC Permits N-4599-9-0, '-10-0, '-11-0, and '-12-0					
Pollutant	Annual PE2 (lb/year)	1 st Quarter (lb/quarter)	2 nd Quarter (lb/quarter)	3 rd Quarter (lb/quarter)	4 th Quarter (lb/quarter)
NOx	510	127	127	128	128
CO	3,112	778	778	778	778
VOC	77	19	19	19	20
PM ₁₀	125	31	31	31	32
SOx	40	10	10	10	10

QNEC for ATC Permits N-4599-13-0					
Pollutant	Annual PE2 (lb/year)	1 st Quarter (lb/quarter)	2 nd Quarter (lb/quarter)	3 rd Quarter (lb/quarter)	4 th Quarter (lb/quarter)
NOx	606	151	151	152	152
CO	3,695	923	924	924	924
VOC	849	212	212	212	213
PM ₁₀	740	185	185	185	185
SOx	47	11	12	12	12

QNEC for ATC Permits N-4599-14-0 and '-15-0					
Pollutant	Annual PE2 (lb/year)	1 st Quarter (lb/quarter)	2 nd Quarter (lb/quarter)	3 rd Quarter (lb/quarter)	4 th Quarter (lb/quarter)
NOx	574	143	143	144	144
CO	1,325	331	331	331	332
VOC	524	131	131	131	131
PM ₁₀	410	102	102	103	103
SOx	45	11	11	11	12

QNEC for ATC Permits N-4599-16-0 and '-17-0					
Pollutant	Annual PE2 (lb/year)	1 st Quarter (lb/quarter)	2 nd Quarter (lb/quarter)	3 rd Quarter (lb/quarter)	4 th Quarter (lb/quarter)
NOx	574	143	143	144	144
CO	1,325	331	331	331	332
VOC	728	182	182	182	182
PM ₁₀	626	156	156	157	157
SOx	45	11	11	11	12

QNEC for ATC Permit N-4599-18-0					
Pollutant	Annual PE2 (lb/year)	1 st Quarter (lb/quarter)	2 nd Quarter (lb/quarter)	3 rd Quarter (lb/quarter)	4 th Quarter (lb/quarter)
VOC	5,052	1,263	1,263	1,263	1,263

Appendix H

Source Test Results Summaries

SOURCE TEST REPORT
Particulate Matter (less than 10 microns)
From
Dryer #4 (S4)
(IDNR Permit #01-A-1123-S1)

ARAMARK UNIFORM SERVICES
Waterloo, Iowa

Compliance Services, Inc.
Project No. ARAMARK

Prepared By:

Neil E. Sherman, M.S.
Senior Industrial Hygienist



Compliance Services, Inc.
P.O. Box 100
Edgewood, Iowa, 52042
(563) 928-6400

Test Date: April 17 & 18, 2003

Report Date: May 16, 2003

Amended Date: May 29, 2003

C **OMPLIANCE SERVICES, Inc.**

P.O. Box 100 • Edgewood, IA 52042 • (563) 928-6400

TEST PROGRAM AND OVERVIEW

A stack test series was performed at Aramark Uniform Services, Waterloo, Iowa, on April 17 & 18, 2003. This test was conducted to determine the average concentration and emission rates of particulate matter less than 10 microns (PM10) from Dryer #4 (S4).

Mr. Neil Sherman of Compliance Services, Inc., was the test company project manager. Ms. Jean Margolina, RMT, Inc., retained the testing firm and Mr. Tom Dikos, Aramark Uniforms, coordinated production during the test. Mr. Cory Carr, Iowa Department of Natural Resources, served as the agency test observer.

SOURCE OPERATING CONDITIONS

For all test periods, operation was considered as representing normal production activities. The results of this test series represent the average operating conditions present during the test series. On the day(s) of testing the production rate was documented and included in the "Operating Data" section of this report.

TEST METHODS

The following test method summary references all test methods used to conduct this test.

Test Parameters	Reference Method(s)
Sample and Velocity Traverse for Stationary Sources	40CFR60, Appendix A, EPA Reference Method 1
Stack Gas Velocity and Volumetric Flow Rate	40CFR60, Appendix A, EPA Reference Method 2
Gas Analysis for the Determination of Dry Molecular Weight	40CFR60, Appendix A, EPA Reference Method 3
Determination of Moisture Content	40CFR60, Appendix A, EPA Reference Method 4
Determination of PM10	40CFR51, Appendix M, EPA Reference Method 201A and 202

COMPLIANCE SERVICES, Inc.

P.O. Box 100 • Edgewood, IA 52042 • (563) 928-6400

TEST METHOD SUMMARY

The method used to conduct this test was EPA Reference Method 201A and 202. The stack sample was withdrawn anisokinetically through an appropriately sized stainless steel nozzle and a performance tested in-stack cyclone separator. The sample was further withdrawn through a heated glass lined probe, a heated glass fiber filter, an EPA Method 202 series of condensing impingers, a leakless vacuum pump, a dry gas meter and a calibrated orifice.

The nozzle selected for each test met the minimum and maximum velocity range encountered during each test or met the deviation allowed by the method. The in-stack cyclone separator TSP basin was used to collect the TSP portion greater than 10 microns. A pre-weighed glass fiber filter was used to collect the PM10 filterable particulates. The first three impingers each contained 100 ml of distilled/deionized water. The fourth impinger contained a pre-weighed amount of silica gel. The impingers were kept in an ice bath to maintain a sample discharge temperature less than 68 degrees F.

Anisokinetic sampling conditions were maintained by supplying a constant orifice vacuum rate to the cyclone and varying the dwell time at each sample point, according to the stack gas velocity pressure encountered at each point.

Little or no sulfur dioxide is emitted from this source and the pH was assumed to be above 4.5. The liquid sample catch was collected from each impinger and volumetrically measured and transferred into a labeled Nalgene container. The moisture content in the stack gas was indicated by an increase in impinger liquid volume and silica gel weight. Approximately 50 ml of acetone was used to triple rinse and brush clean the nozzle, cyclone and cyclone trap for total particulates greater than 10 micron. Approximately 75 ml of acetone was used to triple rinse and brush clean the cyclone cap, stem, and front half of the filter holder. All acetone rinses included brushing of interior surfaces with an acetone resistant nylon bristle brush. Approximately 150 ml of deionized/distilled water was then used to double rinse the impingers and connecting glassware. Approximately 150 ml of methylene chloride was then used to double rinse the impingers and connecting glassware. All acetone and water rinses were added to their respective labeled Nalgene containers. All methylene chloride rinses were added to their respectively labeled glass containers with Teflon lids. Approximately 200 ml of acetone, 500 ml of distilled/deionized water, and 200 ml of methylene chloride were used as reagent blanks and placed in labeled Nalgene and glass containers, respectively.

The method used to analyze the impinger catch was EPA Method 202 (regular) and all samples were corrected for blank residues above detection limits for the method. All laboratory analyses were performed and reported by Compliance Services, Inc., Edgewood, Iowa.

COMPLIANCE SERVICES, Inc.

P.O. Box 100 • Edgewood, IA 52042 • (563) 928-6400

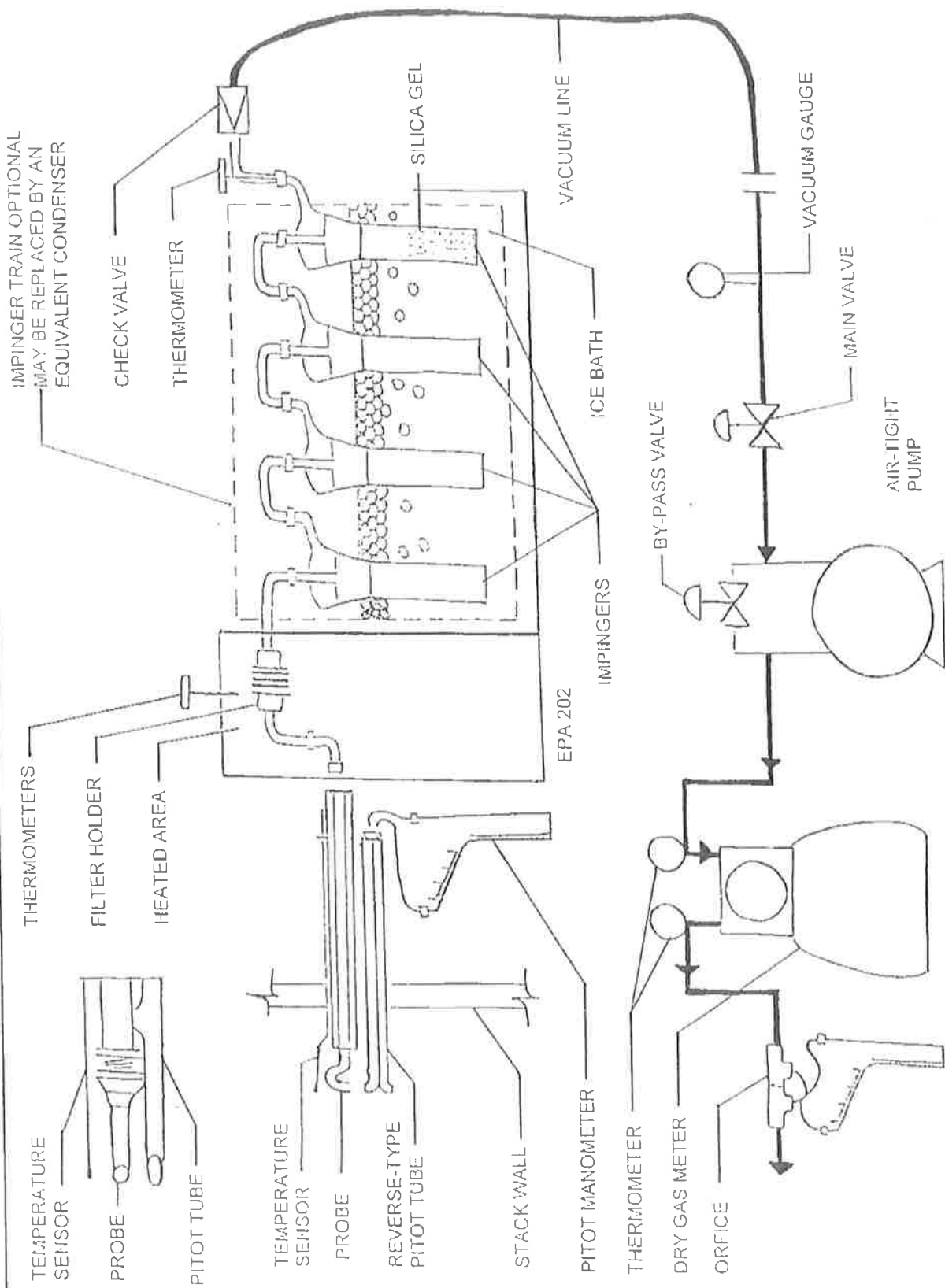


FIGURE: PARTICULATE SAMPLING TRAIN

QUALITY ASSURANCE

The quality assurance procedures used for this test program are associated with the reference methods cited in EPA Reference Methods 201A, 202, 17 and 5, as well as those published by EPA in the Quality Assurance Handbook for Air Pollution Measurement Systems: "Stationary Source Specific Methods". The following discussion is excerpted from the references above.

The construction and condition of the standard S Pitot tube used was verified by visual inspection and was assigned a 0.84 coefficient. Pitots were periodically inspected to ensure proper operating condition (no tip damage or blockage). The S-type Pitot velocity head sample train was leak checked prior to sampling, as specified by EPA Reference Method 5, and Method 2(3.1).

Prior to each test run the sampling train was leak checked at 15 inches of water vacuum with the cyclone attached to the probe. After each sample run the train was leak checked with the cyclone removed from the probe at the highest vacuum encountered during the test run. All leak checks were below the allowed 0.02 cubic feet per minute.

Prior to sampling the dry gas meter utilized received a three point calibration using EPA Reference Method 5, 7.2.2.2.1 through 7.2.2.2.5 (Critical Orifice Method). A quality control check was performed after testing according to EPA Reference Method 5, 7.2.2.2.1 through 7.2.2.2.5 (Critical Orifice Method). The dry gas meter calibration factors for each flow rate were within +/- 2% of the averaged dry gas meter calibration factor at each flow rate.

Prior to sampling, the pyrometer used for measuring temperatures during the test received a full calibration. After testing the pyrometer was checked to within 10% of the average absolute stack temperature encountered during the test, utilizing an ASTM mercury-in-glass reference thermometer. The pyrometer check indicated agreement to within 1.5% of the reference thermometer reading.

The average isokinetic sampling rate for the test was within the 80 to 120% PM10 sampling limit for test runs with no sampling point out of dp_{min} and dp_{max} range. The average D50 PM10 cut-point of the cyclone for the test was within the 9.0 to 11.0 micron range limit and all individual test run values were greater than the 9.0 micron limit for acceptable results. No production stoppages, or test equipment failures were experienced during any portion of the testing.

Prior to sampling all glassware was triple rinsed with acetone. After cleaning all glassware openings were covered with Parafilm or capped with glass until assembly for sampling. An outside clean area was designated at the sample site for the preparation of the sampling train, collection of samples, cleaning of the sampling train. After sampling all sampling train components open to the environment were either immediately cleaned or capped/sealed for further cleaning.

COMPLIANCE SERVICES, Inc.

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STACK TEST RESULTS SUMMARY

Dryer #4 (S4) (IDNR Permit #01-A-1123-S1)

PARTICULATE EMISSIONS	AVERAGE	AR-1	AR-2	AR-3
PM10 Conc. (front & back) gr/scf (C _a)	0.0007	0.0008	0.0006	0.0007
PM10 Emission Rate, lbs/hr (E)	0.037	0.042	0.034	0.036
Emission Rate Basis-Flowrate, scfm	6,148	6149	6152	6144

NOMENCLATURE

Λ	=	Flue Cross Sectional Area
ACFM	=	Actual Cubic Foot per Minute
A_n	=	Sampling Nozzle Cross Sectional Area; Square Feet
B_{ws}	=	Proportion by Volume of Water Vapor in Gas Stream
C_p	=	Pitot Tube Coefficient, Dimensionless
C_s	=	Particulate Concentration, Grains/Dry Standard Cubic Foot
DSCFM	=	Dry Standard Cubic Foot per Minute
D_n	=	Sampling Nozzle Diameter; Inches
E	=	Particulate Emission Rate, lbs/hr
ft/sec	=	Feet per Second
ΔH	=	Average Pressure Drop Across Orifice Meter, Inches H ₂ O
I	=	Isokinetic Variation, %
M_d	=	Flue Gas Molecular Weight, Dry Basis
M_w	=	Flue Gas Molecular Weight, Wet Basis
m_n	=	Total Particulate Residue Collected, Grams
P_{bar}	=	Barometric Pressure, Inches Hg
P_g	=	Stack Static Pressure, Inches H ₂ O
P_s	=	Stack Absolute Pressure, Inches Hg
P_{std}	=	Standard Absolute Pressure, 29.92 Inches Hg
$\sqrt{\Delta P}$	=	Velocity Head of Stack Gas, Inches H ₂ O
Q	=	Stack Gas Flow Rate, Dry Standard Cubic Foot Per Hour (dscfh)
T_m	=	Absolute Average Dry Gas Meter Temperature, °R
T_s	=	Absolute Average Stack Gas Temperature, °R
T_{std}	=	Standard Absolute Temperature, 528 °R
V_k	=	Total Liquid Collected in Impingers, ml. (gm)
V_m	=	Sample Volume - As Measured by Dry Gas Meter, dcf
V_s	=	Stack Gas Velocity, ft/sec
$V_{m_{std}}$	=	Sample Volume - Corrected to Standard Conditions, dscf
Y	=	Dry Gas Meter Calibration Factor, dimensionless
θ	=	Total Sample Time, Minutes
13.6	=	Specific Gravity of Hg

STACK TEST CALCULATIONS

stack absolute pres, inches Hg, P_s	$P_g/13.6 + P_{bar}$
sample volume, standard cond., $V_{m_{std}}$	$17.64 \times V_m \times Y \times P_{bar} + (\Delta H/13.6)$ T_m
water vapor volume, $V_{w_{std}}$	$V_{lc} \times 0.04071$
stack gas moisture content, %, B_{ws}	$\frac{V_{w_{std}}}{V_{m_{std}} + V_{w_{std}}}$
stack gas velocity, ft/sec, V_s	$85.49 \times C_p \times \sqrt{\Delta P} \times \frac{T_s}{P_s M_s} - 1$
stack gas flow rate, dscfh, Q	$3600 \times (1-B_{ws}) \times V_s \times A \times \frac{T_{std} \times P_s}{T_s P_{std}}$
particulate concentration, grn/dscf, C_s	$m_n \times 15.43 / V_{m_{std}}$
particulate emission rate, lb/hr, E	$\frac{C_s \times Q}{7000}$
flue gas molecular weight, dry, M_d	$0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$
flue gas molecular weight, wet, M_s	$M_d (1-B_{ws}) + 18.0 \times B_{ws}$
isokinetic sampling rate, % I	$I = \frac{0.0944 \times T_s \times V_{m_{std}}}{P_s \times V_s \times A_n \times \theta \times (1-B_{ws})}$

STACK TEST RESULTS

COMPANY:	ARAMARK UNIFORM SERVICES
SOURCE:	Dryer #4 (S4) (IDNR Permit #01-A-1123-S1)
CONTAMINANT:	PM10

STACK TEST FIELD DATA	AR-1	AR-2	AR-3
Test Date	4/17/03	4/17/03	4/18/03
Test Start Time	8:20 AM	1:59 PM	9:57 AM
Test Stop Time	1:38 PM	3:50 PM	12:48 PM
Stack cross-sectional area, sq. ft. (A)	3.140	3.140	3.140
Avg. stack gas temp, deg. R (Ts)	615.5	621.7	619.4
Stack static pressure, in. H2O (Pg)	-0.16	-0.16	-0.16
Stack velocity pressure (sqrt dlt P)	0.617	0.619	0.616
Barometric pressure, in. Hg (Pbar)	30.40	30.40	30.50
Pilot tube coeff. (Cp)	0.84	0.84	0.84
Dry gas meter coeff. (Y)	1.0092	1.0092	1.0092
Dry gas meter temp., deg. R (Tm)	511.8	512.8	515.9
Metered sample volume, cu. ft. (Vm)	71.225	48.540	48.490
Water volume collected, ml/gm (Vlc)	70.7	64.8	66.5
Test duration, min (theta)	174.3	120.2	119.4
Sampling nozzle diameter, in. (Dn)	0.2050	0.2050	0.2050
Orifice press. drop, in. H2O (dlt H)	0.50	0.50	0.50
Flue gas composition			
CO2 Percent	0.0	0.0	0.0
O2 Percent	20.9	20.9	20.9
CO Percent	0.0	0.0	0.0

STACK TEST CALCULATIONS	AR-1	AR-2	AR-3
Stack abs. pressure, in. Hg (Ps)	30.39	30.39	30.49
Sample vol. standard, dscf	75.407	51.294	51.098
Water vapor vol., wscf	3.33	3.05	3.13
Sample vol. standard, scf (Vmstd)	78.74	54.35	54.23
Stack gas moisture, (Bws)	0.0423	0.0562	0.0578
Stack gas velocity, ft/sec (Vs)	37.5	37.9	37.5
Stack gas flow Rate, scfh (Q)	368934	369128	368654
scfm	6149	6152	6144
acfm	7057	7132	7074

FLUE GAS ANALYSIS	AR-1	AR-2	AR-3
Percent CO2	0.0	0.0	0.0
Percent O2	20.9	20.9	20.9
Percent CO	0.0	0.0	0.0
Percent N2	79.1	79.1	79.1
Percent Moisture, %/100	0.0423	0.0562	0.0578
Md	28.84	28.84	28.84
Ms	28.38	28.23	28.21

COMPANY:	ARAMARK UNIFORM SERVICES
SOURCE:	Dryer #4 (94) (IDNR Permit #01-A-1123-81)
CONTAMINANT:	PM10

ISOKINETIC RATE AND PM10 CUTPOINT	AR-1	AR-2	AR-3
Ts	615.5	621.7	619.4
Ps	30.39	30.39	30.49
Bws	0.0423	0.0562	0.0578
Vmstd	75.407	51.294	51.098
Vs	37.5	37.9	37.5
An	0.000229	0.000229	0.000229
theta	174.3	120.2	119.4
Cyclone Flowrate, acfm (Qs)	0.52	0.53	0.52
us (uPs)	200.9	201.5	200.7
	Average		
Isokinetic Variation, I	100.9%	100.7%	101.3%
PM-10 Cutpoint, um	9.92	9.94	9.90

LABORATORY DATA (See Analytical Data Sheets)	AR-1	AR-2	AR-3
<i>Below 10 microns (PM10)</i>			
Method 201A Cap Residue, gm	0.0020	0.0005	0.0002
Method 201A Filter Residue, gm	0.0017	0.0013	0.0016
Mass of Inorganic CPM, gm	0.0008	0.0003	0.0005
Mass of Organic CPM, gm	0.0018	0.0009	0.0004
<i>Method Blank Correction</i>			
Mass of Method Blank, gm	0.0002	0.0002	0.0002
<i>Total Residues</i>			
PM10 Residue Weight, gm	0.0041	0.0023	0.0024

PARTICULATE EMISSIONS	AVERAGE	AR-1	AR-2	AR-3
PM10 Conc. (front & back) gr/scf (Cs)	0.0007	0.0008	0.0006	0.0007
PM10 Emission Rate, lbs/hr (E)	0.037	0.042	0.034	0.036



**Report of Compliance Test for
Reactive Organic Compounds (ROCs)**

**Phase I: Determination of the Emission Factor for the Washing of Shop Towels
Phase II: Determination of ROC Emissions during the Drying of Shop Towels**

Testing at:
**ARAMARK Uniform & Career Apparel, LLC
1419 National Drive
Sacramento, CA 95834**

Compliance Testing for:
**Sacramento Metropolitan Air Quality
Management District**

Testing Conducted on:
October 25, 2013

Testing Conducted by:
**NES, Inc.
1141 Sibley Street
Folsom, California 95630**

NES Project Number: 621.IH1678.00

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APPENDICES

Appendix A	Sampling Protocols: Measuring Reactive Organic Compound (ROC) Emissions from Washing of Red-Orange Shop Towels; and Reactive Organic Compound Sampling of the Dryer Exhaust Stacks at the Sacramento ARAMARK Facility.
Appendix B	Sampling Protocols Approval Letter from Tom Kanemoto to Mr. Robert Love, October 17, 2013
Appendix C	Field Data Sheets for Red-Orange Shop Towels Washer and Dryer ROC Emissions Sampling at ARAMARK Facility on October 25, 2013.
Appendix D	Eurofin Air Toxics Ltd. Analytical Report and Chain-of-Custody Form
Appendix E	Washer Tub Dimensions and Volume (Page 1 from Washer Manual)
Appendix F	Spread Sheet for Calculation of Flow Rates from Raw Field Data

REPORT OF COMPLIANCE TEST AND DETERMINATION OF EMISSION FACTORS FOR REACTIVE ORGANIC COMPOUNDS (ROCS)

ARAMARK Uniform & Career Apparel, LLC
Sacramento, California

INTRODUCTION

ARAMARK Uniform & Career Apparel, LLC (Aramark), at their facility in north Sacramento, cleans red-orange shop towels. The cleaning involves both washing and drying in batches of approximately 1,000 pounds. The towels are soiled with oils and greases, and the Sacramento Metropolitan Air Quality Management District (SMAQMD) is concerned about the emissions to the atmosphere of the reactive organic compounds (ROCs) from both processes. In fact, the washing and drying operations are permitted separately, and each permit requires annual testing to demonstrate compliance with the conditions of each permit. For this year (2013), the source testing for both the washing and drying operations was done on the same day, and the approval by SMAQMD of the two testing protocols and the two laboratory analyses were each combined. Therefore, the results of these two tests have been combined in this report; however, they will be reported separately in Phase I and Phase II subsections.

1.0 PHASE I: DETERMINATION OF THE EMISSION FACTOR FOR THE WASHING OF SHOP TOWELS

1.1 BACKGROUND

As part of Aramark's Permit to Operate (Permit No. 19401, Condition 10), SMAQMD requires Aramark to conduct annually a source test for ROCs from this emission source. Specifically,

"The facility shall conduct an annual ROC emission test on one of three washers to verify the emission factor in Condition 6 ..."

Since a protocol is not specified in the permit, NES, Inc. (NES) developed a sampling protocol to determine these emissions. This protocol was initially submitted to SMAQMD on October 27, 2008, and it was approved on November 5, 2008, by Tom Kanemoto in a letter addressed to Al Felato (of Aramark). The same protocol (Refer to Appendix A) was proposed for this year's testing and was approved by Mr. Kanemoto on October 17, 2013 (Refer to Appendix B). The testing was scheduled for October 25, 2013, and SMAQMD was notified eleven days ahead of time. The sampling was conducted as scheduled by Mr. Kim Worl, CIH with NES on

October 25, 2013. Mr. Chris Loscher of SMAQMD was present for a portion of the dryer emission sampling.

1.2 DESCRIPTION OF SAMPLE COLLECTION

On October 25, 2013, Mr. Worl (NES) arrived at the Aramark facility in north Sacramento at about 7:30 am. He met with Al Felato, to coordinate the sampling. The protocol specifies that a grab sample of the headspace air in a washer should be sampled just before the washer is opened to discharge that load of washed towels. The head space air in three different washer-loads was tested. Test No. 1 was conducted on Washer #13, test No. 2 was conducted on Washer #8, and test No. 3 was conducted on Washer #10.

The washer tub is essentially sealed during the washing and rinsing cycles (for example, no water escapes). However, there is a 4-inch diameter vent standpipe on the top of the washer compartment so that the pressure in the washer can equilibrate with the outside atmospheric pressure. The lint screen on this pipe remains clean for months with no maintenance, suggesting that the air flow out of this pipe is very small (the screen would be covered with lint if there was any significant flow). In a previous test, to validate this assumption, for one washing/rinsing cycle, a 30-quart plastic bag was taped tightly over the opening of the standpipe. During the cycle, it was noted that the bag slightly inflated and deflated (a maximum difference was estimated to be less than ten liters) as the water flowed into and was extracted from the washing tub. The net flux was near zero and the total tidal air flow was estimated to be much less than 1% of the headspace volume (13,271 liters [L]).

A Teflon sample line was snaked down the stand pipe so that the end of the line projected a few inches into the top of washer headspace. The other end of the line was fitted to an evacuated 6-liter Summa canister with a Swagelok fitting. Just before sealing the line to the canister and near the end of the wash/rinse cycle, approximately ten tube-volumes of headspace air were drawn through the line to ensure any "dead" air in the tube would be representative of headspace air. Shortly before the washer was to open and discharge its load, the valve on the canister was opened and a grab sample of the headspace air was drawn into the canister. A few small droplets of water were seen to form in the Teflon sample line, but they fell back down the tube and none of the droplets reached the canister. Since the ROCs of interest consist of hydrocarbons associated with greases and oils (on the shop towels), they are not expected to be water soluble and the VOC results will not be affected by trace amounts of condensation in the sampling line (total water volume of the droplets was estimated to be less than 0.5 milliliters [mL]).

The initial and final vacuums in the three canisters were measured and recorded on pre-printed field data sheets (Refer to Appendix C). In all cases, the final vacuums were at or below 5 "Hg. The sample identification numbers were ARA-2013-W-01, ARA-2013-W-02, and ARA-2013-W-03.

During the afternoon of the sampling, the three canisters were transported to eurofins Air Toxics laboratory in Folsom, California, for U.S. EPA Method TO-12 analysis (total non-methane organic compounds determination or TNMOC determination). The Air Toxics, Ltd. analytical report is reproduced in Appendix D. The washer tub volume was taken from the engineering drawings in the washer manual. The diameter of the washer tub is given on the drawings as 76 inches and the depth of the cylinder is 44 inches. The calculated volume of the washer tub is 115.5 cubic feet or 13,271 liters. The dimension page from the washer manual is reproduced in Appendix E. The soiled weights of the shop towels in each load were determined by the automatic weighing system at the facility; Aramark staff relayed to Mr. Worl what the weight was for each load as it was being sampled, and that weight was recorded in the field data sheets for each sample.

1.3 CALCULATIONS AND RESULTS OF THE SAMPLING

To determine the mass of ROC emissions from each washer, the volume of the headspace (liters) is multiplied by the ROC concentration of the headspace air (milligrams [mg]/liter):

$$\text{Mass of Total Non-Methane Organic Gases (TNMOC) (mg) =} \\ \text{Air Volume (liters) x Concentration (mg/liter)}$$

It is assumed that, at the end of the wash/rinse cycle, all of the ROCs in the headspace of each washer are lost to the atmosphere when the load is discharged.

The analytical laboratory reports the TNMOC concentration in each canister in units of parts-per-million by volume (ppmv) as heptane (molecular weight = 100 grams [g]/mole). To convert this result to mg/liter units, the ppmv result must be multiplied by the molecular weight of the calibration gas (100.0 g/mole for heptane) and divided by the volume of gas occupied by one mole of that gas at 68°F (20°C) and at one atmosphere pressure (24.04 liters/mole). Thus, (100.0 g/m)/(24.04 liters/m) = 4.160 grams/liter, and this value when multiplied by 10⁻⁶ to account for the ppmv units, produces the result in grams per liter. According to the approved protocol and the engineering drawings of the washer tub, it is assumed that the calculated air volume in the washer tub is reduced by 10%, that volume being occupied by the damp towels. Thus, the effective headspace air volume for each washer was 13,271 liters x 0.90 = 11,944 liters.

For example, for the first sample (sample control number ARA-2013-W-01), the laboratory reported TNMOC concentration was 51 ppmv:

$$51 \text{ (ppmv)} \times 4.160 \text{ (g/liter)} \times 10^{-6} = 0.0002122 \text{ (g/liter); then}$$

$$\text{TNMOC} = 11,944 \text{ (liters)} \times 0.0002122 \text{ (g/liter)} = 2.54 \text{ (g)}$$

Similar calculations were made for the second (ARA-2013-W-02) and third (ARA-2013-W-03) testing runs and are summarized in Table 1.

Table 1. Calculations of Mass Emissions from the Washing of Shop Towels

Sample Number	Volume of Tub (liters)	Concentration as Heptane (ppmv)	Total Mass of ROCs (g)	Total Mass of ROCs (pounds)
ARA-2013-W-01	11,944	51	2.54	0.006
ARA-2013-W-02	11,944	340	16.89	0.037
ARA-2013-W-03	11,944	250	12.42	0.027
Average	11,944	214	10.63	0.023

To determine an emission factor for this process (i.e., pounds [lbs] of ROC emissions per 1,000 pounds of shop towels), the results in Table 1 must be divided by the soiled weight of towels in each load times 1,000. From the field data sheets (Appendix C), the soiled weight for the three runs was 950 lbs, 1,000 lbs, and 767 lbs, respectively. Therefore, the pounds of ROCs per 1,000 lbs of towels for the three runs were:

For ARA-2013-W-01, $0.006 \text{ lbs}/950 \text{ lbs} \times 1,000 = 0.006 \text{ lbs of ROC}/1,000 \text{ lbs of towels}$.
 For ARA-2013-W-02, $0.037 \text{ lbs}/1,000 \text{ lbs} \times 1,000 = 0.037 \text{ lbs of ROC}/1,000 \text{ lbs of towels}$.
 For ARA-2013-W-03, $0.027 \text{ lbs}/767 \text{ lbs} \times 1,000 = 0.035 \text{ lbs of ROC}/1,000 \text{ lbs of towels}$.

The average of these three results is 0.026 lbs of ROC/1,000 lbs of towels. In four previous tests, the average results were 0.019 (2012), 0.035 (2011), 0.012 (2010), and 0.0241 (2009) lbs ROC/1,000 lbs of towels.

Condition 6 of the permit to operate (No. 19401) assumes an emission factor of 0.1 lbs of ROCs/1,000 lbs of towels resulting in a condition limit for total pounds of towels to be washed per day of less than 99,000 lbs of towels per day (Condition 8). In fact, the result of this test effort is an emission factor of 0.026 lbs of ROC/1,000 lbs of towels, and the facility self-limits their quantity of towels washed to less than 5,800 lbs per day. Both of these values are well below the permit condition limits, and as such the facility is operating in compliance with their permit

2.0 PHASE II: DETERMINATION OF ROC EMISSIONS DURING THE DRYING OF SHOP TOWELS

2.1 BACKGROUND

Aramark's permit to operate (No. 20092), issued by the SMAQMD, requires that the facility conduct an annual source test for reactive organic compounds (ROCs) emitted while drying shop towels. Aramark contracted with AMEC to conduct the sampling. In October of 2013, SMAQMD was notified that A Aramark was planning to conduct the source test and a sampling protocol was submitted (Refer to Appendix A). Aramark received approval (Refer to Appendix B) and a sampling date of October 25, 2013, was set. Mr. Chris Loscher of SMAQMD was present at the site during portions of the dryer testing.

When a dryer cycle begins, a dryer is loaded with washed, damp shop towels and sealed. After two minutes of tumbling at ambient temperatures with the blower fan on, the heating begins (gas fired combustion). The heating cycle continues for approximately 30-40 minutes and is ended when the reading from a humidity sensor in the exhaust gas drops below a preset level. The maximum temperature of the exhaust gases typically reaches 170-180°F. Once the heating ends, the towels continue to tumble with only the blower fan on for several more minutes until the temperature of the exhaust gas falls to 130-140°F, at which point the blower fan turns off. Shortly afterwards, the seal is broken and the dryer is emptied onto a conveyer system. Sampling of the stack gases is continuous and uniform during the period when the blower fan is on.

The protocol to determine the volumetric flow rate of the exhaust gases followed the essential components of U.S. EPA Methods 1-4. To conduct the testing, two ports were used on the stack servicing dryer #106, and all testing was done on this stack. The ports are approximately 8 diameters downstream and 1.25 diameters upstream of any flow disturbance. The stack is 24 inches in internal diameter. Pitot tube traverses (6 points on each of two perpendicular diameters) were performed during each of the three sample runs. The average percent water was determined by pulling an independent sample of the exhaust gas continuously during the entire drying cycle at a known flow rate through an ice-water impinger. The volume gain of the water was measured after the completion of sampling and used to determine the average percent water in the dryer exhaust gases during the drying cycle.

To determine the average concentration of ROCs in the exhaust gas, a sample of the exhaust gas was withdrawn continuously and at a constant rate through a Teflon tube during the entire drying cycle (until the blower fan shut off, ending the dryer cycle) and collected in an evacuated Summa canister. Testing was conducted on the same three loads of shop towels that were used during the washer emission testing. Previous source tests have shown that the

average percent water was low (a few percent), and a water knock-out impinger on the Teflon line was not necessary. No water droplets were observed in the Teflon line entering the canister.

The Summa canisters were taken on the same day to eurofins Air Toxics laboratory in Folsom, California, for total non-methane organic compounds (TNMOC) analysis by U.S. EPA Method TO-12. The weight of towels processed in each load was given to NES by Aramark staff. Each soil weight of towels was recorded on the field data sheet. The results for each test are developed and reported in Section 2.2. The identification numbers for the three testing runs were: ARA-2013-D-01, ARA-2013-D-02, and ARA-2013-D-03. These ID numbers appear on the field data sheets and on the eurofins Air Toxics laboratory analytical pages. Copies of the field data sheets are provided in Appendix C. Copies of the laboratory report and chain-of-custody form are provided in Appendix D.

2.2 CALCULATION OF ROC EMISSIONS FOR THE DRYING OF SHOP TOWELS

2.2.1 Determination of the Percent Water

A sample of stack gas was withdrawn at a constant rate during an entire drying cycle and passed through an ice-water impinger. Most of the water vapor in the exhaust gas stream was condensed in the impinger, and the volume increase was measured on site. The time of sampling in minutes (min) multiplied by the constant flow rate of the extraction pump (liters/min) was used to determine the volume of gas sampled (Liters). The field data and calculated results of this water-content determination are summarized in Table 1. The field data sheets are reproduced in Appendix C.

Because of the relatively low humidity, no water knock-out trap was used to condition the sample being drawn into the Summa canister. No condensation was observed in the Teflon sample line leading to the Summa canister, an observation consistent with this percent water result.

2.2.2 Exhaust Stack Volumetric Flow Rate

The flow rate in the stack was determined one time during each sampling run. A 12-point traverse of the stack (6 points on two perpendicular diameters) was taken using an S-type pitot tube approximately half way through the drying event. The temperature of the stack was also recorded at that time. Using the pitot tube differential pressure readings, the atmospheric pressure for that day, the average stack temperature during the traverse, and the molecular weight of air determined using the percent moisture measured during that run, the volumetric flow rates were calculated. Those results are summarized in Table 2. The calculation

spreadsheet used to calculate the flow rates is given in Appendix F. The total volumetric flow rates for each of the runs (in units of dry standard cubic feet – [dscf]) are given in Table 2.

2.2.3 ROC Emissions and Determination of an Emission Factor

The three Summa canisters were used to collect samples of the exhaust gas uniformly and continuously during each of three separate shop towel drying runs. After the sampling was completed, the canisters were transported to eurofins Air Toxics Ltd. laboratory in Folsom, California, the same day for analysis. In all three canisters, the TNMOC was determined by U.S. EPA Method TO-12 (a GC/FID method). The laboratory report is reproduced in Appendix D. The TNMOC results were reported as follows (as heptane [molecular weight = 100] and at 68°F):

- Run #ARA-2013-D-01, 16 ppmv (66.56 mg/m³),
- Run #ARA-2013-D-02, 15 ppmv (62.40 mg/m³), and
- Run #ARA-2013-D-03, 11 ppmv (45.76 mg/m³).

These results are also shown in Table 3.

To determine the mass emission rate for each dryer run, the concentrations in each of the canisters (mg/m³) was multiplied by the total flow rate in the exhaust stack for each run (dry, standard, m³). These results are presented in Table 3; also shown in this Table are the shop towel load weights (soiled weight in lbs), and the calculated emission factors.

3.0 DISCUSSION OF RESULTS

The mass emission results were 1.34, 1.17, and 1.10 lb of ROC /1,000 lbs of soiled shop towels, or an average emission factor of 1.20 lb of ROC/1,000 lbs. To obtain the estimated emissions for any load of shop towels to be dried, multiply this emission factor by the soiled weight in thousands of lbs. Aramark's permit to operate says that they shall not dry more than 5,800 pounds of soiled shop towels per day (Condition 7). If Aramark processed this quantity of shop towels, their average daily emissions would be:

$$(1.20 \text{ lb of ROC}/1,000 \text{ lbs of towels}) \times (5.8 [1,000 \text{ lbs of towels}]) = 6.96 \text{ lbs of ROCs.}$$

This is well below the permit limit of 9.9 lbs per day (Condition 6). Thus, Aramark is in compliance with their permit to operate (No. 20092) for both Conditions 6 and 7.

TABLES

TABLE 1
SUMMARY OF MOISTURE-RELATED FIELD DATA AND CALCULATION OF PERCENT WATER
 ARAMARK Uniform & Career Apparel, LLC
 October 25, 2013
 Sacramento, California

Run No.	Weight Gain of Water (g)	Volume of Water at 68°F (L)	Pump Flow Rate (L/min)	Sampling Time (min)	Actual Sampling Volume (L)	Ambient Temp ^a (°F)	Sampled Volume at STP (L)	Volume Percent Water (%)
ARA-2013-D-01	2.84	3.78	1.82	47	85.73	72	85.00	4.45%
ARA-2013-D-02	2.84	3.78	1.85	45	83.16	72	82.45	4.59%
ARA-2013-D-03	1.42	1.89	1.82	44	79.99	72	79.31	2.38%

Note
 1. Atmospheric pressure on this day was 29.98" Hg.

TABLE 2
SUMMARY OF FLOW RATE DETERMINATIONS IN STACK 106 DURING SHOP TOWEL DRYING
 ARAMARK Uniform & Career Apparel, LLC
 October 25, 2013
 Sacramento, California

Run No.	Time of Run (hh:mm)	Length of Run (min)	Average Velocity (ft/sec)	Volumetric Flowrate (ft ³ /min)	Total Volume (dry std ft ³) ^b	Dryer Load ^a (lbs)
ARA-2013-D-01	10:03-10:50	47	34.40	6,485	304,802	950
ARA-2013-D-02	11:01-11:46	45	35.27	6,648	299,177	1,000
ARA-2013-D-03	11:58-12:42	44	35.22	6,639	292,102	767

Notes

- ^a Taken from Aramark's computer logs of washer/dryer load (soil weight).
- ^b std refers to the standard gas volume; that is, at Y =68°F, and Pressure = 29.92"Hg.

TABLE 3
SUMMARY OF DETERMINATION OF TOTAL ROC EMISSIONS AND EMISSION FACTORS
FOR DRYING OF RED/ORANGE SHOP TOWELS
 ARAMARK Uniform & Career Apparel, LLC
 October 25, 2013
 Sacramento, California

Run No.	TNMOC Concentration (ppmv) ^a	TNMOC Concentration (mg/m ³) ^b	Total Volume of Run (m ³) ^b	Grams of ROCs Emitted (g)	Pounds of ROCs Emitted (lbs)	Dryer Load (lbs)	ROC Emission Factor (ROC lbs/1000 lbs)
ARA-2013-D-01	16	66.56	8,631	574.5	1.27	950	1.34
ARA-2013-D-02	15	62.40	8,472	528.7	1.17	1,000	1.17
ARA-2013-D-03	11	45.76	8,271	378.5	0.84	767	1.10

Notes

^a Reported by eurofin Air Toxics Ltd. as heptane (MW = 100g/mol)

^b Cubic meters at standard conditions (T= 68°F, Pressure = 29.92" Hg).

Conversion Factors

1 ft³ = 0.028317 m³.

1 lb = 453.6 g.