



OCT 10 2011

Chris Berard  
Pactiv Corporation  
5370 E Home Ave  
Fresno, CA 93727

**Re: Proposed Authority to Construct / Certificate of Conformity (Minor Mod)  
District Facility # C-36  
Project # C-1112955**

Dear Mr. Berard:

Enclosed for your review is the District's analysis of your application for Authority to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The facility proposes to re-instate conditions to clarify the thermal oxidizer can be non-operational during complete production shutdown.

After addressing any EPA comments made during the 45-day comment period, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

Enclosures  
cc: Stanley Tom, Permit Services

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



OCT 10 2011

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St  
San Francisco, CA 94105

Re: **Proposed Authority to Construct / Certificate of Conformity (Minor Mod)**  
**District Facility # C-36**  
**Project # C-1112955**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Pactiv Corporation, located at 5370 E Home Avenue, Fresno, CA, which has been issued a Title V permit. Pactiv Corporation is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The facility proposes to re-instate conditions to clarify the thermal oxidizer can be non-operational during complete production shutdown.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authority to Construct # C-36-2-10 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

  
David Warner  
Director of Permit Services

Enclosures  
cc: Stanley Tom, Permit Services

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

Northern Region  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585

**San Joaquin Valley Air Pollution Control District  
Authority to Construct  
Application Review**

*Modification of RTO Serving the Plastic Foam Products Manufacturing Facility*

Facility Name:	Pactiv Corporation	Date:	September 26, 2011
Mailing Address:	5370 E. Home Avenue Fresno, CA 93727	Engineer:	Stanley Tom
Contact Person:	Chris Berard	Lead Engineer:	Joven Refuerzo
Telephone:	(559) 253-3402		
Fax:	(559) 251-6968		
Application #(s):	C-36-2-10		
Project #'s:	C-1112955		
Deemed Complete:	September 26, 2011		

---

**I. PROPOSAL**

Pactiv Corporation requests an Authority to Construct (ATC) permit for the modification of its plastic foam products manufacturing facility located in Fresno, CA (existing PTO C-36-2-5 included in Attachment A). The applicant is proposing to revise the condition in PTO C-36-2-5 to clarify the thermal oxidizer can be non-operational during a complete production shutdown. The applicant proposes to re-instate the conditions that were originally present in Permit to Operate C-36-2-4, but were inadvertently revised in ATC C-36-2-6 and reflected under ATC C-36-2-9.

Existing Condition (PTO C-36-2-5)

- The thermal oxidizer and associated ventilation system shall be in use, except during routine maintenance or breakdown, whenever any of the following equipment is in operation: extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. [District NSR Rule and Rule 4682, 5.3.1]

Proposed Conditions to be Re-instated

- The thermal oxidizer and associated ventilation system shall be in use at all times of operation of the thermoformers, bulk grinders, reclaim extruders, or the fluff silos. [District Rule 2201]
- The thermal oxidizer and associated ventilation system shall be in use at all times of operation of the extruders and the roll storage area, except during routine oxidizer maintenance or complete production shutdowns. [District Rule 2201]

There are current two outstanding ATCs C-36-2-7 and '2-9 (see Attachment A). The applicant has stated both of these ATCs have already been implemented. Therefore, the following condition will be placed on the ATC in this project:

- Authority to Construct (ATC) C-36-2-7 and '2-9 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]

Pactiv Corporation received their Title V Permit on September 30, 2002. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Pactiv Corporation must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

## II. APPLICABLE RULES

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)  
Rule 2520 Federally Mandated Operating Permits (6/21/01)  
Rule 4001 New Source Performance Standards (4/14/99)  
Subpart DDD - Standards of Performance for Volatile Organic Compound (VOC)  
Emissions from the Polymer Manufacturing Industry  
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 4682 Polystyrene, Polyethylene, and Polypropylene Products Manufacturing  
(9/20/07)  
Rule 4801 Sulfur Compounds (12/17/92)  
CH&SC 41700 Health Risk Assessment  
CH&SC 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

This facility is located at 5370 E. Home Avenue in Fresno, CA.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public noticing requirement of California Health and Safety Code 42301.6 does not apply.

#### **IV. PROCESS DESCRIPTION**

Pactiv Corporation produces food grade expanded polystyrene foam products for the home consumer and restaurant industry. Polystyrene pellets are melted and mixed with the blowing agent while under high pressure. The entrained blowing agent causes the plastic to "foam" as it leaves the extrusion die head to the lower atmospheric pressure. The extruded foam is stretched over a mandrel to obtain the desired thickness, then slit to form sheets which are wound up on large rolls. After curing, the polystyrene sheet is warmed as it is unwound through the thermoformer lines which presses and cuts out the desired shape product. Left over scrap sheet is automatically fed to the scrap grinding operation for reclaim.

#### **V. EQUIPMENT LISTING**

##### Pre-Project Equipment Description

C-36-2-9 POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD SERVED BY A 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER

##### ATC Equipment Description

C-36-2-10 MODIFICATION OF POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD SERVED BY A 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER: RE-INSTATE CONDITIONS TO CLARIFY THERMAL OXIDIZER CAN BE NON-OPERATIONAL DURING COMPLETE PRODUCTION SHUTDOWN

##### Post Project Equipment Description

C-36-2-10 POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD SERVED BY A 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER

#### **VI. EMISSION CONTROL TECHNOLOGY EVALUATION**

Pactiv Corporation currently controls the VOC emissions that result from the extrusion operations, thermoforming lines and scrap reclaim systems with a 5.78 MMBtu/hr natural gas fired Adwest Technologies, model RETOX 20.0 RTO 95 dual chamber regenerative thermal oxidizer. The manufacturer has guaranteed that the RTO will operate with a minimum VOC

- The overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be maintained at a minimum of 77.5%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rule 2301]
- The destruction efficiency of the thermal oxidizer shall be maintained at a minimum of 95%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rules 1081, 2301 and 4682]
- The thermal oxidizer and associated ventilation system shall be in use at all times of operation of the thermoformers, bulk grinders, reclaim extruders, or the fluff silos. [District Rule 2201]
- The thermal oxidizer and associated ventilation system shall be in use at all times of operation of the extruders and the roll storage area, except during routine oxidizer maintenance or complete production shutdowns. [District Rule 2201]
- Shut down of the thermal oxidizer for routine maintenance shall be recorded and shall not exceed a total of 20 hours per calendar year. [District NSR Rule]
- The combustion zone of the thermal oxidizer shall be maintained at a minimum of 1,500 degrees Fahrenheit. [District NSR Rule]

## VII. GENERAL CALCULATIONS

### A. Assumptions

- The maximum operating schedule for this facility is 24 hours/day and 365 days/year
- On-site VOC emissions shall only include the VOC emissions generated by the extrusion operations and rollstock storage area
- The facility-wide VOC capture efficiency shall not be less than 77.5%, as measured by mass balance, to maintain ERC's resulting from the installation of the thermal oxidizer (current permit limit, no proposed changes)
- Only isobutane or n-butane were used as blowing agents (current permits limits)
- VOC is the only pollutant emitted from the polystyrene foam production operations
- From the current permits, the term "extrusion operations (including rollstock storage)" includes all processing equipment associated with any of the following permits: primary extrusion lines, reclaim extrusion lines, thermoforming lines, grinders, fluff silos and rollstock storage area (project C-990365 and proposed by the applicant)
- Maximum foam extrusion rate from each extrusion line shall not exceed 36,000 pounds per day (current permit limits, no proposed changes)
- The maximum total VOC blowing agent consumption for the entire facility shall not exceed 8,500 lb/day, calculated on a monthly basis (current permit limit, no proposed changes)
- The average total VOC blowing agent consumption rate for the entire facility shall not exceed 3,400 lb/day, calculated on a quarterly average (current permit limit, no proposed changes)
- The RTO is only fired on PUC-regulated natural gas (proposed by the applicant)

## B. Emission Factors

### Pre-Project Emission Factors:

#### On-Site Processing:

Per project C-1084211,

**VOC EF<sub>Processing</sub> = 0.12294 lb-VOC/lb VOC blowing agent used**

#### RTO Natural Gas Combustion:

The current permits do not list any emission factors for the combustion of natural gas in the RTO burner. The following NO<sub>x</sub>, CO and PM<sub>10</sub> emission factors were taken from AP-42 and the SO<sub>x</sub> emission factor was taken from District Policy APR 1720. It will be assumed that the average daily VOC emission limit of 418.0 lb/day listed on the current permit also includes VOC emissions from the combustion of natural gas in the RTO. Therefore, a separate VOC emission factor will not be listed for the RTO.

Pollutant	Emissions Factors	Source
NO <sub>x</sub>	0.10 lb-NO <sub>x</sub> /MMBtu	AP-42 (07/98) Table 1.4-1
SO <sub>x</sub>	0.00285 lb-SO <sub>x</sub> /MMBtu	District Policy APR 1720
PM <sub>10</sub>	0.0076 lb-PM <sub>10</sub> /MMBtu	AP-42 (07/98) Table 1.4-2
CO	0.084 lb-CO/MMBtu	AP-42 (07/98) Table 1.4-1

### Post Project Emission Factors:

#### On-Site Processing:

The applicant is not proposing to modify the VOC emission factor for these polystyrene foam production processes. Therefore, the post project emission factor will be set equal to the pre-project emission factor listed above.

#### RTO Natural Gas Combustion:

The applicant is not proposing to modify the emission factors from the combustion of natural gas as a supplemental fuel in the thermal oxidizer. Therefore, the post project emission factors will be set equal to the pre-project emission factors listed above.

## C. Calculations

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

#### Daily PE (PE1):

#### On-Site Processing VOC Emissions:

The daily on-site processing VOC emissions from these operations can be determined using the VOC blowing agent limits and the VOC emission calculation that are listed on the current permits. The VOC emissions are calculated using the following equation:

$$\text{VOC PE} = \text{VOC EF (lb-VOC/lb blowing agent used)} \times \text{VOC Blowing Agent Usage (lb/day)}$$

The current permits limit the maximum VOC blowing agent usage to 8,500 lb/day and 3,400 lb/day, based on a quarterly average. Assuming that no butane is used when the thermal oxidizer is down for maintenance or repair, the daily on-site processing VOC emission rates can be determined as follows:

$$\text{Maximum Daily On-site VOC PE} = 0.12294 \text{ lb-VOC/lb blowing agent used} \times 8,500 \text{ lb-VOC blowing agent used/day}$$

$$\text{Maximum Daily On-Site Processing VOC PE} = 1,045.0 \text{ lb/day}$$

$$\text{Average Daily On-Site VOC PE} = 0.12294 \text{ lb-VOC/lb blowing agent used} \times 3,400 \text{ lb-VOC blowing agent used/day}$$

$$\text{Average Daily On-Site Processing VOC PE} = 418.0 \text{ lb/day (based on a quarterly average)}$$

There will not be any physical changes to the plant or process and there will not be an increase in potential emissions with this clarification.

The applicant is proposing to clarify the thermal oxidizer can be non-operational during complete production shutdown. During a complete production shutdown, the facility will have no VOC emissions except from the roll storage area. The following calculation is performed to demonstrate the emissions from off-gassing of the roll storage area during a complete production shutdown will continue to be less than the permitted allowable emissions for normal on-site processing.

The below calculation is a worst case scenario value considering the roll storage area room is sealed and emissions should remain in the room until the RTO is brought back online and the below calculation assumes a constant 1.77 lb-VOC/hr emission rate from the roll storage area even though this value would attenuate over time since no new material would be introduced during a complete production shutdown.

Maximum uncontrolled roll storage emissions = 1.77 lb-VOC/hr (applicant source tested value see Attachment B)

Daily emissions = 1.77 lb/hr x 24 hr/day = 42.5 lb-VOC/day

The uncontrolled roll storage value is less than the maximum potential to emit allowed for normal on-site processing of 1045.0 lb-VOC/day.

**RTO Natural Gas Combustion Emissions:**

The current permit does not contain any daily operational limits on the RTO. Therefore, the NO<sub>x</sub>, CO, PM<sub>10</sub> and SO<sub>x</sub> PE values will be calculated using the emission factors listed above, the heat input rating of the burner and the maximum hours of operation during any given day or year.

Daily PE = (EF (lb/MMBtu) x Burner Rating (MMBtu/hr)) x 24 (hr/day)

Pollutant	Emission Factor (lb/MMBtu)	Burner Rating (MMBtu/hr)	Operating Hours (hr/day)	PE (lb/day)
NO <sub>x</sub>	0.10	5.78	24	13.9
SO <sub>x</sub>	0.00285	5.78	24	0.4
PM <sub>10</sub>	0.0076	5.78	24	1.1
CO	0.084	5.78	24	11.7

**Annual PE (APE1):**

**On-Site Processing VOC Emissions:**

The current permits for this facility do not contain any annual operating limitations. Therefore, the annual PE from these units will be calculated using the average daily on-site processing VOC PE (worst case based on allowable quarterly operation) and a worst case operating scenario of 365 days per year.

Annual On-Site Processing VOC PE = Average Daily On-Site Processing VOC PE (lb/day) x 365 (days/year)

Annual On-Site Processing VOC PE = 418.0 (lb/day) x 365 (days/year)

**Annual On-Site Processing VOC PE = 152,570 lb/year**

Similar to above, the following calculation is performed to demonstrate the emissions from off-gassing of the roll storage area during a complete production shutdown will continue to be less than the permitted allowable emissions for normal on-site processing.

Maximum uncontrolled roll storage emissions = 1.77 lb-VOC/hr (applicant source tested value see Attachment B)

Daily emissions = 1.77 lb/hr x 24 hr/day = 42.5 lb-VOC/day

Annual emissions = 1.77 lb/hr x 8760 hr/year = 15,505 lb-VOC/year

This value is less than the maximum potential to emit allowed for normal on-site processing of 152,570 lb-VOC/year.

RTO Natural Gas Combustion Emissions:

$$\text{Annual PE (lb/year)} = (\text{EF (lb/MMBtu)} \times \text{Burner Rating (MMBtu/hr)}) \times 8,760 \text{ (hr/year)}$$

Pollutant	Emission Factor (lb/MMBtu)	Burner Rating (MMBtu/hr)	Operating Hours (hr/year)	PE (lb/year)
NO <sub>x</sub>	0.10	5.78	8,760	5,063
SO <sub>x</sub>	0.00285	5.78	8,760	144
PM <sub>10</sub>	0.0076	5.78	8,760	385
CO	0.084	5.78	8,760	4,253

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

**Daily PE (PE2):**

On-Site Processing VOC Emissions:

Pactiv Corporation is not proposing to modify these polystyrene foam production operations, blowing agent usage rates, emission factors, or allowable daily hours of operation. Therefore, the post project daily PE value can be set equal to pre-project daily PE value calculated above.

RTO Natural Gas Combustion Emissions:

The current permit does not contain any daily operational limits on the RTO. Therefore, the NO<sub>x</sub>, CO, PM<sub>10</sub> and SO<sub>x</sub> PE values will be calculated using the emission factors listed above, the heat input rating of the burner and the maximum hours of operation during any given day or year.

$$\text{Daily PE} = (\text{EF (lb/MMBtu)} \times \text{Burner Rating (MMBtu/hr)}) \times 24 \text{ (hr/day)}$$

Pollutant	Emission Factor (lb/MMBtu)	Burner Rating (MMBtu/hr)	Operating Hours (hr/day)	PE (lb/day)
NO <sub>x</sub>	0.10	5.78	24	13.9
SO <sub>x</sub>	0.00285	5.78	24	0.4
PM <sub>10</sub>	0.0076	5.78	24	1.1
CO	0.084	5.78	24	11.7

**Annual PE (APE2):**

On-Site Processing VOC Emissions:

Pactiv Corporation is not proposing to modify these polystyrene foam production operations, blowing agent usage rates, emission factors, or allowable daily hours of operation. Therefore, the post project annual PE value can be set equal to pre-project annual PE value calculated above.

RTO Natural Gas Combustion Emissions:

$$\text{Annual PE (lb/year)} = (\text{EF (lb/MMBtu)} \times \text{Burner Rating (MMBtu/hr)}) \times 8,760 \text{ (hr/year)}$$

Pollutant	Emission Factor (lb/MMBtu)	Burner Rating (MMBtu/hr)	Operating Hours (hr/year)	PE (lb/year)
NO <sub>x</sub>	0.10	5.78	8,760	5,063
SO <sub>x</sub>	0.00285	5.78	8,760	144
PM <sub>10</sub>	0.0076	5.78	8,760	385
CO	0.084	5.78	8,760	4,253

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

Permit Unit	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
C-36-1	0	0	402	0	0
C-36-2	5,063	144	385	4,253	152,570
C-36-3	0	0	0	0	
C-36-4	0	0	0	0	
C-36-5	0	0	0	0	
C-36-6	0	0	0	0	
C-36-7	0	0	0	0	
C-36-8	0	0	0	0	
C-36-9	0	0	0	0	
C-36-10	0	0	0	0	
C-36-11	0	0	0	0	
C-36-12	0	0	0	0	
C-36-13	0	0	0	0	
C-36-14	0	0	621	0	

C-36-18	0	0	0	0	
C-36-19	0	0	511	0	
C-36-20	0	0	0	0	
C-36-21	0	0	0	0	
C-36-22	0	0	840	0	
C-36-17	0	0	402	0	0
C-36-23	0	0	0	0	66,430
<b>SSPE1 Permit Unit</b>	<b>5,063</b>	<b>144</b>	<b>3,161</b>	<b>4,253</b>	<b>219,000</b>
ERC Certificate C-650-1 (original ERC C-61-1)	0	0	0	0	4,507
ERC Certificate C-651-1 (original ERC C-61-1)	0	0	0	0	7,261
ERC Certificate C-162-1 (original ERC C-62-1)	0	0	0	0	56,688
<b>SSPE1 Total</b>	<b>5,063</b>	<b>144</b>	<b>3,161</b>	<b>4,253</b>	<b>287,456</b>

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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 that have occurred at the source, and which have not been used on-site.

Permit Unit	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
C-36-1	0	0	402	0	0
C-36-2	5,063	144	385	4,253	
C-36-3	0	0	0	0	
C-36-4	0	0	0	0	
C-36-5	0	0	0	0	
C-36-6	0	0	0	0	
C-36-7	0	0	0	0	
C-36-8	0	0	0	0	
C-36-9	0	0	0	0	
C-36-10	0	0	0	0	
C-36-11	0	0	0	0	
C-36-12	0	0	0	0	
C-36-13	0	0	0	0	
C-36-14	0	0	621	0	
C-36-18	0	0	0	0	
C-36-19	0	0	511	0	
C-36-20	0	0	0	0	
C-36-21	0	0	0	0	
					152,570

C-36-22	0	0	840	0	
C-36-17	0	0	402	0	0
C-36-23	0	0	0	0	66,430
<b>SSPE2<sub>Permit Unit</sub></b>	<b>5,063</b>	<b>144</b>	<b>3,161</b>	<b>4,253</b>	<b>219,000</b>
ERC Certificate C-650-1 (original ERC C-61-1)	0	0	0	0	4,507
ERC Certificate C-651-1 (original ERC C-61-1)	0	0	0	0	7,261
ERC Certificate C-162-1 (original ERC C-62-1)	0	0	0	0	56,688
<b>SSPE2<sub>Total</sub></b>	<b>5,063</b>	<b>144</b>	<b>3,161</b>	<b>4,253</b>	<b>287,456</b>

### 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, “for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.”

As seen in Section VII.C.3 & VII.C.4 above, this facility contains ERC’s that have been banked at the source and which have not been used on-site; therefore, an adjusted Stationary Source Potential to Emit (SSPE<sub>Permit Unit</sub>) will be used to determine major source status.

	<b>NO<sub>x</sub> (lb/year)</b>	<b>SO<sub>x</sub> (lb/year)</b>	<b>PM<sub>10</sub> (lb/year)</b>	<b>CO (lb/year)</b>	<b>VOC (lb/year)</b>
SSPE1 <sub>Permit Unit</sub>	5,063	144	3,161	4,253	219,000
SSPE2 <sub>Permit Unit</sub>	5,063	144	3,161	4,253	219,000
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	Yes

As shown in the table above, this source is an existing Major Source for VOC emissions and will remain above the Major Source threshold for VOC emissions after this project.

### 6. Baseline Emissions (BE)

Per District Rule 2201, Section 3.7, the baseline emissions, for a given pollutant, shall be equal to the pre-project potential to emit for:

- Any emission unit located at a non-major source,
- Any highly utilized emission unit, located at a major source,

- Any fully-offset emission unit, located at a major source,
- Any clean emission unit located at a major source, or
- The historical actual emissions (HAE) for emission units not covered by the categories listed above.

As shown above, this facility is above the major source threshold for VOC emissions. Per District Rule 2201, Section 3.12, a highly utilized emissions unit is a unit for which the average annual Actual Emissions during the two consecutive years immediately prior to the filing of an application for an ATC were equal to or greater than 80% of the unit's pre-project Potential to Emit.

This permit unit is covered by a VOC emission limit of 418.0 lb/day. Assuming a worst case operating schedule of 365 days/year, the maximum allowable VOC potential to emit for these units is 152,570 lb/year. Pursuant to the VOC emission records provided by the applicant (records included in Attachment C) and the actual VOC emission calculations performed in the Major Modification section of this document below, the average actual VOC emissions for these operations were 126,165 lb/year. The actual VOC emissions are 83% of the maximum potential VOC emissions ((126,165 / 152,570 lb/year) x 100% = 83%).

Therefore, all of the operations being modified within this project can be considered highly utilized emission units. The baseline VOC emissions will be set equal to the unit's pre-project potential to emit.

Annual PE1 (lb-VOC/year)	BE (lb-VOC/year)
152,570	152,570

## 7. SB288 Major Modification

Major Modification is defined in 40 CFR Part 51.165 (in effect 12/19/02) 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.*"

As discussed in Section VII.C.5 above, this facility is only a Major Source for VOC emissions. Therefore, a major modification can only be triggered for VOC emissions.

The first step in determining whether this project triggers a major modification is to compare the sum of the post project potentials to emit for new unit and each unit modified within the project with the Major Modification significance thresholds listed in District Rule 2201, Table 3-3. If the sum of post project potentials to emit for each unit within the project is less than the corresponding significance threshold for a pollutant, a major modification cannot be triggered for that pollutant and further calculations are not necessary. If the sum of the post project potentials to emit for each unit within the project is greater than the significance thresholds for VOC, further investigation is required to determine whether the project is a major modification for VOC.

<b>Major Modification Thresholds (Existing Major Source)</b>			
Pollutant	Post Project PE (lb/year)	Major Modification Threshold (lb/year)	Further Major Modification Calculations Necessary?
VOC	152,570	50,000	Yes

The second step in determining whether the project triggers a major modification is to calculate the Net Emissions Increase (NEI) for the project, and compare that to the Major Modification thresholds.

The Net Emissions Increase (NEI) for a project is calculated as follows:

$$\text{NEI} = \text{Post-Project Potential Emissions} - \text{Pre-Project Actual Emissions}$$

The pre-project actual VOC emissions for the processing equipment will be based on the fresh VOC blowing agent input records that Pactiv Corporation provided as a part of this project for the two consecutive years of operation immediately prior to the submission of their complete applications (September 2009 through August 2011).

Actual Processing VOC Emissions:

The fresh VOC blowing agent input records provided by the applicant from September 2009 through August 2011 are shown in the table below (see fresh VOC input records provided by the applicant in Attachment C).

<b>Actual Blowing Agent Usage</b>	
	Fresh Blowing Agent Usage (lb/year)
Sep. '09 – Aug. '10	1,134,494
Sep. '10 – Aug. '11	917,972

The VOC emissions associated with the blowing agent usage can be determined using the following emission factor:

$$\text{VOC EF}_{\text{Processing}} = 0.12294 \text{ lb-VOC/lb VOC blowing agent used}$$

Therefore, the actual VOC emissions are as follows:

<b>Actual Processing VOC Emissions</b>			
	Blowing Agent Usage (lb/year)	Multiplication Factor	Annual VOC Emissions (lb/year)
Sep. '09 – Aug. '10	1,134,494	0.12294	139,475
Sep. '10 – Aug. '11	917,972	0.12294	112,855
Average	1,026,233	0.12294	126,165

Net Emissions Increase					
Pollutant	Project PE2 (lb/year)	Pre-Project Actual VOC Emissions (lb/year)	Net Emissions Increase (lb/year)	Major Modification Threshold (lb/year)	Major Modification
VOC	152,570	126,165	26,405	50,000	No

As shown above, this project does not trigger a major modification for VOC emissions.

### 8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

#### Step 1

For existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions  
UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

UBC: Since this project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

The proposed modification does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate. Therefore the unused baseline capacity emissions (portion of PAE that unit could have accommodated) can also be excluded from the project Emission Increase calculation as follows:

Emission Increase = PAE – BAE – unused baseline capacity emissions

The District has determined that the unit could have emitted PAE during the baseline period (when it emitted BAE) and therefore the unused baseline emissions are equal to PAE – BAE and Emission Increase = 0. Therefore the project is not a Federal Major Modification.

### **9. 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 Attachment D.

## **VIII. COMPLIANCE**

### **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 for the following\*:

- 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 a Major Modification.

\*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**

As discussed in Section I above, there are no new emissions units associated with this project; therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

**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**

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = The emissions unit's Potential to Emit prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (\text{EF2} / \text{EF1}))$$

There are no emission factor changes in this project. Therefore, EF2 / EF1 = 1.

$$\begin{aligned} \text{AIPE} &= 1045.0 - (1045.0 * (1)) \\ &= 1045.0 - 1045.0 * 1 \\ &= 0.0 \text{ lb-VOC/day} \end{aligned}$$

As demonstrated above, the AIPE is not greater than 2.0 lb/day for VOC emissions; therefore BACT is not triggered.

**d. Major Modification**

As discussed in Section VII.C.7 above, this project does not constitute a Major Modification; therefore BACT is not triggered.

## B. Offsets

### 1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Post Project SSPE (SSPE2)	5,063	144	3,161	4,253	287,456
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

### 2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset threshold; therefore offset calculations will be required for this project.

#### VOC Emissions:

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for NO<sub>x</sub> is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

Offsets Required (lb/year) =  $([152,570 \text{ lb/year} - 152,570] + 0) \times DOR$   
= 0 lb VOC/year

As demonstrated in the calculation above, the amount of offsets is zero; therefore, 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 SB288 Major Modifications,
- 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 SSPE of greater than 20,000 lb/year for any pollutant.

#### a. New Major Source

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 VII.C.7, this project does not constitute a 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 Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

#### c. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	5,063	5,063	20,000 lb/year	No
SO <sub>x</sub>	144	144	54,750 lb/year	No
PM <sub>10</sub>	3,161	3,161	29,200 lb/year	No
CO	4,253	4,253	200,000 lb/year	No
VOC	287,456	287,456	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 Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any one pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e.  $SSIPE = SSPE2 - SSPE1$ .

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	5,063	5,063	0	20,000 lb/year	No
SO <sub>x</sub>	144	144	0	20,000 lb/year	No
PM <sub>10</sub>	3,161	3,161	0	20,000 lb/year	No
CO	4,253	4,253	0	20,000 lb/year	No
VOC	287,456	287,456	0	20,000 lb/year	No

As demonstrated above, the SSIPE was determined to be less than 20,000 lb/year for all pollutants; therefore public noticing for SSIPE purposes is not required.

**2. Public Notice Action**

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

**D. Daily Emission Limits (DELs)**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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.

- Maximum total VOC blowing agent consumption for the entire facility shall not exceed 8,500 lb/day, calculated on a monthly basis. [District NSR Rule]
- Average total VOC blowing agent consumption for the entire facility shall not exceed 3,400 lb/day, calculated on a calendar quarter basis. [District NSR Rule]
- The maximum on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 1,045.0 lb/day, calculated on a monthly basis. [District NSR Rule]
- The average on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 418.0 lb/day, calculated on a calendar quarter basis. [District NSR Rule]

- Emissions from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.10 lb-NO<sub>x</sub>/MMBtu; 0.084 lb-CO/MMBtu; 0.0076 lb-PM<sub>10</sub>/MMBtu; or 0.00285 lb-SO<sub>x</sub>/MMBtu. [District NSR Rule]

## **E. Compliance Assurance**

### **1. Source Testing**

Per District Policy APR 1705, Source Testing, annual source testing shall be required for operations served by an afterburner, thermal incinerator, or catalytic incinerator used for the control of VOC emissions. Annual source testing of the thermal oxidizer is required. The following conditions are included on the permit to ensure continued compliance with the source testing requirements:

- Source testing to measure the minimum destruction efficiency of the thermal oxidizer shall be conducted at least once every twelve months. [District NSR Rule and District Rule 4682]
- The following test methods shall be used: stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; VOC - EPA Method 25 or 25A, ARB Method 100 or EPA Method 18, referenced as methane, or an alternative equivalent District and EPA approved test method. [District NSR Rule]

The proposed project should have no effect on the facility wide capture efficiency or the amount of blowing agents retained in the foam products. Therefore, no additional source testing is necessary.

### **2. Monitoring**

The polystyrene production processes are served by a regenerative thermal oxidizer. The thermal oxidizer operates with a minimum control efficiency of 95% for VOC emissions, while operating with a combustion temperature at or above 1,400 °F. To ensure proper operation of the RTO, the following monitoring conditions were taken from the current permits and will be included on the permit in this project:

- The combustion zone of the thermal oxidizer shall be maintained at a minimum of 1,500 degrees Fahrenheit. [District NSR Rule]
- The thermal oxidizer shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District NSR Rule]

### **3. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. All records shall be retained on site for a period of at least five years and made available to District inspection upon request. The following conditions will be included on the ATC's and PTO's to ensure continued compliance with the recordkeeping requirements:

- The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, and maximum on-site process VOC emission rate (lb/day). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3]
- The permittee shall maintain records of the average on-site process VOC emission rate (lb/day). Records shall be maintained with minimum quarterly totals with the ability to calculate daily averages based on the number of operating days in any calendar quarter. For each calendar quarter, daily average records shall be updated by no later than the end of the first month following the end of each quarter. [District NSR Rule]
- The permittee shall maintain accurate daily records of the thermal oxidizer combustion temperature. [District NSR Rule and District Rule 4682, 6.1.2]
- Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District NSR Rule and District Rule 4682, 6.1.4]

#### 4. Reporting

No reporting is required to demonstrate compliance with District Rule 2201.

#### **Rule 2520 Federally Mandated Operating Permits**

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule.

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, Pactiv Corporation has applied for a Certificate of Conformity (COC) along with this project; therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application. The following conditions will be included on the ATC and will ensure continued compliance with the requirements of this rule:

- This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]
- Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

#### **Rule 4001 New Source Performance Standards**

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.

#### **40 CFR 60 – Subpart DDD**

40 CFR 60, Subpart DDD applies to facilities involved in the manufacture of polypropylene, polyethylene, polystyrene or poly (thylene terephthalate) as defined in section 60.561 of this subpart. As discussed above, Pactiv receives pre-manufactured polystyrene pellets, melts those pellets, and forms large polystyrene sheets. Their final products are then cut out of those formed sheets. Therefore, Pactiv Corporation is not involved in the actual manufacturing of polystyrene. They are only involved in transforming the polystyrene pellets into polystyrene sheets. Therefore, this subpart is not applicable to Pactiv Corporation.

#### **Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAP's)**

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 polystyrene foam box production operations.

#### **Rule 4101 Visible Emissions**

District Rule 4101, Section 5.0, indicates that 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 dark or darker than Ringlemann 1 or equivalent to 20% opacity. Compliance with the requirements of this rule is ensured by the following condition, currently located on the facility wide permit for this facility:

- No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101, by using EPA method 9. If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101]

Therefore, compliance with District Rule 4101 requirements is expected.

### **Rule 4102 Nuisance**

Section 4.0 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. Compliance with the requirements of this rule is ensured by the following condition, currently located on the facility wide permit for this facility:

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

### **California Health & Safety Code 41700 (Health Risk Assessment)**

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.

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

### **Rule 4682 Polystyrene, Polyethylene, and Polypropylene Products Manufacturing**

The purpose of this rule is to limit emissions of volatile organic compounds (VOC's) and trichlorofluoromethane (CFC-11) and dichlorofluoromethane (CFC-12) from manufacturing and processing of polystyrene foam, polyethylene, and polypropylene and from the storage of VOC blowing agents. This rule applies to any operations involved with the manufacturing, processing and storage of products composed of polystyrene, polyethylene, or polypropylene.

As discussed above, Pactiv operates a polystyrene foam manufacturing facility at this location. Therefore, District Rule 4682 applies to this facility.

Section 5.1 states that no person shall operate controllable VOC emission sources at a polystyrene foam, polyethylene, or polypropylene manufacturing or processing operation unless one of the following VOC emission reduction methods is provided:

- 5.1.1 A blowing agent other than a VOC or trichlorofluoromethane (CFC-11) or dichlorodifluoromethane (CFC-12) is exclusively used; or
- 5.1.2 A system designed to achieve at least 90 percent VOC capture efficiency and a thermal oxidizer which abates captured VOC emissions by at least 95 percent by weight; or
- 5.1.3 VOC emissions are controlled by a method which achieves an emission reduction equivalent to Section 5.1.2 and which does not include the use of trichlorofluoromethane (CFC-11) or dichlorodifluoromethane (CFC-12), and is approved by the APCO.

Per Section 3.5, controllable VOC emission sources are defined as fluff silos or bins, reclaim extruders, condenser devolatilizer, styrene recovery unit vents and reclaim die hood exhausts in which materials manufactured with a VOC blowing agent are processed, or are stored, and from which emissions are vented to the atmosphere. Pactiv Corporation operates all of the primary extruders, reclaim extruders and fluff silos with a VOC capture efficiency of at least 90%. The capture efficiency of the roll storage area is less than 90% and brings their overall average facility wide capture efficiency to 77.5%. However, the roll storage area does not meet the definition of a controllable emission source. The thermal oxidizer destroys the captured VOC emissions with a minimum efficiency of 95%. Therefore, Pactiv Corporation operates the equipment in compliance with the requirements of this rule. The following conditions will ensure continued compliance with the requirements of this section:

- The VOC capture efficiency of the extrusion operation shall be maintained at a minimum of 90%. [District Rule 4682, 5.1]
- The destruction efficiency of the thermal oxidizer shall be maintained at a minimum of 95%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rules 1081, 2301 and 4682]

Section 5.2 states that no person shall place, hold or store any VOC blowing agent in any stationary tank, reservoir or container having a capacity greater than 200 gallons unless one of the following emission control systems is provided:

- 5.1.4 The container is a pressure vessel maintaining a working pressure at all times sufficient to prevent release of VOC emissions to the atmosphere under normal operating conditions; or
- 5.1.5 The container is equipped with an emission control device or system which collects and disposes of VOC emissions, and which achieves and maintains a vapor recovery/control efficiency of at least 95 percent by weight.

Pactiv Corporation operates one permit exempt butane/isobutane storage tank (blowing agent) that does not vent VOC's to the atmosphere unless it is in the case of an emergency (pressure vessel). Therefore, Pactiv complies with the requirements of this section.

Sections 5.3 through 5.5 become effective on and after September 20, 2010. Pactiv Corporation has applied to bring their facility in to compliance with the requirements of Section 5.3 under project C-1084211. As discussed above, Pactiv has indicated that the replacement RTO ATC's being issued as a part of this project will be implemented prior to the Rule 4682

compliance ATC's being issued under project C-1084211. Therefore, compliance with the requirements of this section will not be addressed within this project and no further discussion is required.

Section 5.6 states that facilities subject to the requirements of this rule shall have submitted a compliance plan by no later than March 20, 2009 and also specifies the parameters that should be included within that plan. Pactiv Corporation's compliance plan was submitted as an addendum to their ATC application under project C-1084211 on February 10, 2009 and contained all the necessary elements to determine how they will be in compliance with the requirements of this rule. Therefore, Pactiv Corporation is in compliance with the requirements of this section.

Section 6.1.1 requires that any person subject to the provisions of this rule, including exempt facilities, shall maintain records of operation, including but not limited to, the amount of material processed, the equipment used, and the type of the blowing agent used. Records shall be maintained at a minimum monthly with the ability to calculate daily averages in any given month. The following condition will ensure continued compliance with the requirements of this section:

- The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, and maximum on-site process VOC emission rate (lb/day). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3]

Section 6.1.2 requires that any person any person using an emissions control system as a means of complying with this rule, shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control device. Key system operating parameters are those necessary to ensure compliance with VOC emission requirements such as temperature, pressures, and flow rates.

Pactiv Corporation uses a 5.78 MMBtu/hr RTO to control the VOC emissions from the various processes at this facility. The key operating parameters for the thermal oxidizer are only listed on the first permit in order to avoid redundancy within the facility permit. Therefore, the requirements of this section will only be included on this first permit as well. The following condition will ensure compliance with the requirements of this section:

- The permittee shall maintain accurate daily records of the thermal oxidizer combustion temperature. [District NSR Rule and District Rule 4682, 6.1.2]

Section 6.1.3 states that operators complying with Section 5.3.1 shall maintain records necessary to show compliance with that section and shall, once every month, calculate the daily average VOC emissions, based on the records of the preceding monthly period, according to the approved VOC calculation formula. The following condition will ensure continued compliance with the requirements of this section:

- The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, and maximum on-site process VOC emission rate (lb/day). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3]

Section 6.1.4 specifies that all records required to demonstrate compliance with this rule shall be maintained on-site for a minimum of five years. Those records shall be made available at the facility during normal business hours to the APCO, ARB, or EPA. The records shall be submitted to the APCO, ARB, or EPA upon request. The following condition will ensure continued compliance with the requirements of this section:

- Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District NSR Rule and District Rule 4682]

### **Conclusion**

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule, see attached draft permit(s). Therefore, compliance with District Rule 4682 requirements is expected.

### **California Health & Safety Code 42301.6 (School Notice)**

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)**

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; and
- 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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District conducted a Risk Management Review and concludes that potential health impacts are less than significant.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

### **Greenhouse Gas (GHG) Significance Determination**

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. There will not be any physical changes to the plant or process and there will not be an increase in potential emissions with the clarification the thermal oxidizer can be non-operational during a complete production shutdown. The applicant does not propose any change in blowing agent or thermal oxidizer fuel. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

### **District CEQA Findings**

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

## **IX. RECOMMENDATION**

Compliance with all applicable rules and regulations is expected. Pending a successful Title V COC noticing period, issue Authority to Construct C-36-2-10 subject to the permit conditions on the attached draft Authority to Construct in Attachment E.

**X. BILLING INFORMATION**

<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
C-36-2-10	3020-01-E	Extrusion Line #1	\$412

**Attachments:**

- Attachment A, Existing PTO C-36-2-5 and ATCs C-36-27- and '2-9
- Attachment B, Roll Storage Area Source Test
- Attachment C, Pactiv Corporation's Historical Actual VOC Records
- Attachment D, Quarterly Net Emission Change (QNEC) Calculations
- Attachment E, Draft ATC

## **Attachment A**

**Current Permit to Operate  
C-36-2-5 and Authorities to Construct C-36-2-7 and '2-9**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** C-36-2-5

**EXPIRATION DATE:** 04/30/2016

## **EQUIPMENT DESCRIPTION:**

POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD VENTED TO A 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER.

## **PERMIT UNIT REQUIREMENTS**

---

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. Foam extrusion rate from this equipment shall not exceed 36,000 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The door(s) on the secondary extrusion die hood shall be closed when the extrusion line is operating. [District NSR Rule] Federally Enforceable Through Title V Permit
4. The thermal oxidizer and associated ventilation system shall be in use, except during routine maintenance, whenever any of the following equipment is in operation: extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. [District NSR Rule and Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
5. Shut down of the thermal oxidizer for routine maintenance shall be recorded and shall not exceed a total of 20 hours per calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be maintained at a minimum of 77.5%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rule 2301] Federally Enforceable Through Title V Permit
7. The destruction efficiency of the thermal oxidizer shall be maintained at a minimum of 95%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rules 1081 and 2301] Federally Enforceable Through Title V Permit
8. The exhaust stack of the thermal oxidizer shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The RTO shall only be fired on PUC-regulated natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
10. Only isobutane or n-butane shall be used as VOC blowing agent components. Methyl formate, acetone, or carbon dioxide, or any combination thereof, shall be used as non-VOC blowing agent components. [District NSR Rule] Federally Enforceable Through Title V Permit
11. The VOC blowing agent consumption for the entire facility shall not exceed an average of 8,500 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
12. The VOC blowing agent consumption for the entire facility shall not exceed an average of 3,400 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
13. The methyl formate blowing agent consumption for the entire facility shall not exceed either of the following limits: an average of 1,500 lb/day or 164,250 lb/year. [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

14. The on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed an average of 1,045.0 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
15. The on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed an average of 418.0 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
16. The lifetime VOC emissions (LE) from the plastic foam products manufactured at this facility shall not exceed 2.4 pounds of VOC per 100 pounds of total material processed. [District NSR Rule and District Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
17. Emissions from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.10 lb-NO<sub>x</sub>/MMBtu; 0.084 lb-CO/MMBtu; 0.0076 lb-PM<sub>10</sub>/MMBtu; or 0.00285 lb-SO<sub>x</sub>/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
18. The permittee shall maintain the thermal oxidizer in accordance with the manufacturer's instructions. A copy of the manufacturer's instructions shall be kept onsite and made available for inspection upon request. [District NSR Rule and 40 CFR 64] Federally Enforceable Through Title V Permit
19. The combustion zones of the thermal oxidizer shall be maintained at a minimum of 1500 degrees Fahrenheit. [District NSR Rule and 40 CFR 64] Federally Enforceable Through Title V Permit
20. The thermal oxidizer shall be equipped with thermocouples to continuously measure the temperature in the combustion zones, which shall be recorded at least every fifteen minutes. The thermal oxidizer thermocouples shall be calibrated at a frequency in accordance with the manufacturer's specifications, other written procedures that provide an adequate assurance that the device is calibrated accurately, or at least annually, whichever is more frequent, and shall be accurate to within  $\pm 0.75\%$  of the temperature being measured expressed in degrees Fahrenheit. [District NSR Rule and 40 CFR 64] Federally Enforceable Through Title V Permit
21. The maximum air flow rate through the thermal oxidizer shall not exceed 20,000 scfm. [District NSR Rule] Federally Enforceable Through Title V Permit
22. The minimum retention time in the combustion zone of the thermal oxidizer shall be 0.3 seconds. [District NSR Rule] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following minimum air flow rates (scfm) from the respective production areas to the thermal oxidizer when in production: 3500 from the roll storage warehouse; 528 from each foam extrusion die hood; and 203 from each reclaim line smog hog. [District NSR Rule] Federally Enforceable Through Title V Permit
24. On-site and lifetime VOC emissions shall be determined using Pactiv's District approved mass balance emissions model. Should any changes occur to the approved mass balance emissions model, the permittee shall notify the District within 30 days and have the mass balance emissions model re-approved. [District NSR Rule and District Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
25. Source testing to measure the minimum destruction efficiency of the thermal oxidizer and the minimum air flow rates from each production area shall be conducted at least once every twelve months. [District NSR Rule] Federally Enforceable Through Title V Permit
26. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District NSR Rule and District Rules 1081, 7.1] Federally Enforceable Through Title V Permit
27. Permittee shall use the results of the most recent blowing agent retention test(s) performed at this facility to demonstrate ongoing compliance with the VOC emission limits specified within this permit. Permittee shall perform additional blowing agent retention testing within 60 days of any significant product changes or any changes in the manufacturing process. A significant product change shall be considered as a change in the polymer used (e.g. switching from polyethylene to polypropylene) or a change in the type of blowing agent used. [District NSR Rule and District Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

28. Permittee shall use the results of the most recent VOC capture efficiency test(s) performed at this facility to demonstrate ongoing compliance with the VOC capture efficiency limit specified within this permit. Permittee shall perform additional VOC capture efficiency testing within 60 days of any significant process changes that may have the potential to affect the capture efficiency at the extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. Significant process changes may include, but are not limited to, modifications to the hoods and/or enclosures serving each piece of equipment or changes to the ventilation system and/or airflow rates from each piece of equipment. [District NSR Rule and District Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
29. The following test methods shall be used: air flow rates - EPA Method 1 or 2; stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; VOC - EPA Method 25 or 25A or ARB Method 100, referenced as methane; exempt VOC compounds - EPA Method 18, or alternative equivalent District and EPA approved test methods. [District NSR Rule and District Rule 4682, 6.2] Federally Enforceable Through Title V Permit
30. During any required source testing, the weight of VOC blowing agent retained in polymeric materials shall be determined using ASTM Method D7132-05, Bay Area Test Method 45 (Determination of Butanes and Pentanes in Polymeric Materials, South Coast Test Method 306 (Analysis of Pentanes in Expandable Styrene Polymers), or an alternative equivalent District and EPA approved test method. [District NSR Rule and District Rule 4682, 6.2.4] Federally Enforceable Through Title V Permit
31. During any required source testing, the overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be calculated using a mass balance and the allowable VOC test methods specified within this permit. The overall VOC capture efficiency shall be determined using the following equation:  $\text{VOC Capture Efficiency} = [1 - ((\text{TVI} - \text{CVT} - \text{VRFP}) / \text{TVI})] \times 100\%$ , where TVI is the total VOC input; CVT is the total amount of VOC captured and sent to the thermal oxidizer, measured at the inlet to the thermal oxidizer; and VRFP is the amount of VOC retained in the finished products at the packing table. [District NSR Rule and District Rule 4682, 6.2] Federally Enforceable Through Title V Permit
32. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
33. The permittee shall maintain a list of all the products manufactured at this facility and representative finished products associated VOC blowing agent retention rate(s). [District NSR Rule] Federally Enforceable Through Title V Permit
34. The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, maximum on-site process VOC emission rate (lb/day), and lifetime VOC emission rate (lb/100 pounds of total material processed). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3] Federally Enforceable Through Title V Permit
35. The permittee shall maintain records of the average on-site process VOC emission rate (lb/day). Records shall be maintained with minimum quarterly totals with the ability to calculate daily averages based on the number of operating days in any calendar quarter. For each calendar quarter, daily average records shall be updated by no later than the end of the first month following the end of each quarter. [District NSR Rule] Federally Enforceable Through Title V Permit
36. The permittee shall maintain accurate daily records of the thermal oxidizer combustion temperature. [District NSR Rule and District Rule 4682, 6.1.2] Federally Enforceable Through Title V Permit
37. Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District NSR Rule and District Rule 4682, 6.1.4] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.



# San Joaquin Valley AIR POLLUTION CONTROL DISTRICT

## AUTHORITY TO CONSTRUCT

PERMIT NO: C-36-2-7

ISSUANCE DATE: 11/10/2009

LEGAL OWNER OR OPERATOR: PACTIV CORPORATION

MAILING ADDRESS: 5370 E HOME AVE  
FRESNO, CA 93727

LOCATION: 5370 E HOME AVE  
FRESNO, CA 93727

### EQUIPMENT DESCRIPTION:

MODIFICATION OF POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD VENTED TO A 1.5 MMBTU/HR CE MODEL 13.6 ROCC98 COMBU-CHANGER REGENERATIVE THERMAL OXIDIZER: REPLACE EXISTING THERMAL OXIDIZER WITH A NEW 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER

## CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This Authority to Construct (ATC) shall be implemented prior to, or concurrently with, the modification and startup of the equipment authorized by ATC C-36-2-6. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Foam extrusion rate from this equipment shall not exceed 36,000 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The door(s) on the secondary extrusion die hood shall be closed when the extrusion line is operating. [District NSR Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

  
DAVID WARNER, Director of Permit Services

C-36-2-7, Nov 10 2009 12:51PM - BROWARD : Joint Inspection NOT Required

7. The thermal oxidizer and associated ventilation system shall be in use, except during routine maintenance or breakdown, whenever any of the following equipment is in operation: extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. [District NSR Rule and Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
8. Shut down of the thermal oxidizer for routine maintenance shall be recorded and shall not exceed a total of 20 hours per calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The VOC capture efficiency of the extrusion operation shall be maintained at a minimum of 90%. [District Rule 4682, 5.1] Federally Enforceable Through Title V Permit
10. The overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be maintained at a minimum of 77.5%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rule 230.1] Federally Enforceable Through Title V Permit
11. The destruction efficiency of the thermal oxidizer shall be maintained at a minimum of 95%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rules 1081, 2301 and 4682] Federally Enforceable Through Title V Permit
12. The exhaust stack of the thermal oxidizer shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 41.02]
13. The thermal oxidizer shall only be fired on PUC-regulated natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
14. Only isobutane or n-butane shall be used as VOC blowing agents. [District NSR Rule] Federally Enforceable Through Title V Permit
15. The maximum total VOC blowing agent consumption for the entire facility shall not exceed 10,000 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
16. The average total VOC blowing agent consumption for the entire facility shall not exceed 4,000 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
17. The maximum on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 1,345.0 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
18. The average on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 538.0 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
19. VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be determined as follows: (butane usage, lb/day)  $\times$  (1 - 0.49)  $\times$  {(1 - 0.775) + (0.775  $\times$  (1 - 0.95))} + {(butane usage during thermal oxidizer downtime, lb/day)  $\times$  (1 - 0.49)}. [District NSR Rule] Federally Enforceable Through Title V Permit
20. Emissions from the combustion of natural gas in the thermal oxidizer burner shall not exceed any of the following limits: 0.10 lb-NO<sub>x</sub>/MMBtu; 0.084 lb-CO/MMBtu; 0.0076 lb-PM<sub>10</sub>/MMBtu; or 0.00285 lb-SO<sub>x</sub>/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
21. The permittee shall maintain the thermal oxidizer in accordance with the manufacturer's instructions. A copy of the manufacturer's instructions shall be kept onsite and made available for inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
22. The combustion zone of the thermal oxidizer shall be maintained at a minimum of 1,500 degrees Fahrenheit. [District NSR Rule] Federally Enforceable Through Title V Permit
23. The thermal oxidizer shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District NSR Rule] Federally Enforceable Through Title V Permit
24. The permittee shall maintain the following minimum air flow rates (scfm) from the respective production areas to the thermal oxidizer when in production: 3500 from the roll storage warehouse; 528 from each foam extrusion die hood; and 203 from each reclaim line smog hog. [District NSR Rule] Federally Enforceable Through Title V Permit.

CONDITIONS CONTINUE ON NEXT PAGE

25. Initial source testing to measure the minimum destruction efficiency of the thermal oxidizer shall be conducted within 60 days after initial start-up. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
26. Source testing to measure the minimum destruction efficiency of the thermal oxidizer shall be conducted at least once every twelve months. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
27. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District NSR Rule and District Rules 1081, 7.1] Federally Enforceable Through Title V Permit
28. The following test methods shall be used: stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; VOC - EPA Method 25 or 25A, ARB Method 100 or EPA Method 18, referenced as methane, or an alternative equivalent District and EPA approved test method. [District NSR Rule] Federally Enforceable Through Title V Permit
29. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, and maximum on-site process VOC emission rate (lb/day). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of the average on-site process VOC emission rate (lb/day). Records shall be maintained with minimum quarterly totals with the ability to calculate daily averages based on the number of operating days in any calendar quarter. For each calendar quarter, daily average records shall be updated by no later than the end of the first month following the end of each quarter. [District NSR Rule] Federally Enforceable Through Title V Permit
32. The permittee shall maintain accurate daily records of the thermal oxidizer combustion temperature. [District NSR Rule and District Rule 4682, 6.1.2] Federally Enforceable Through Title V Permit
33. Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District NSR Rule and District Rule 4682, 6.1.4] Federally Enforceable Through Title V Permit

## AUTHORITY TO CONSTRUCT

PERMIT NO: C-36-2-9

ISSUANCE DATE: 07/13/2011

LEGAL OWNER OR OPERATOR: PACTIV CORPORATION  
MAILING ADDRESS: 5370 E HOME AVE  
FRESNO, CA 93727

LOCATION: 5370 E HOME AVE  
FRESNO, CA 93727

### EQUIPMENT DESCRIPTION:

MODIFICATION OF POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD SERVED BY A 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER: INCREASE FACILITY WIDE ANNUAL METHYL FORMATE USAGE LIMIT FROM 164,250 LB/YEAR TO 547,500 LB/YEAR (1,500 LB/DAY X 365 DAYS/YEAR)

## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. Authorities to Construct (ATC's) C-36-2-6 and '-2-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Foam extrusion rate from this equipment shall not exceed 36,000 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit
5. The door(s) on the secondary extrusion die hood shall be closed when the extrusion line is operating. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The thermal oxidizer and associated ventilation system shall be in use, except during routine maintenance or breakdown, whenever any of the following equipment is in operation: extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. [District NSR Rule and Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit

### CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

  
DAVID WARNER, Director of Permit Services

7. Shut down of the thermal oxidizer for routine maintenance shall be recorded and shall not exceed a total of 20 hours per calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be maintained at a minimum of 77.5%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rule 2301] Federally Enforceable Through Title V Permit
9. The destruction efficiency of the thermal oxidizer shall be maintained at a minimum of 95%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rules 1081, 2301 and 4682] Federally Enforceable Through Title V Permit
10. The exhaust stack of the thermal oxidizer shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
11. The thermal oxidizer shall only be fired on PUC-regulated natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
12. Only isobutane or n-butane shall be used as VOC blowing agent components. Methyl formate, acetone, or carbon dioxide, or any combination thereof, shall be used as non-VOC blowing agent components. [District NSR Rule] Federally Enforceable Through Title V Permit
13. The maximum total VOC blowing agent consumption for the entire facility shall not exceed 8,500 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
14. The average total VOC blowing agent consumption for the entire facility shall not exceed 3,400 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
15. The maximum total methyl formate blowing agent consumption for the entire facility shall not exceed 1,500 lb/day. [District Rule 4102]
16. The maximum on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 1,045.0 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
17. The average on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 418.0 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
18. The lifetime VOC emissions (LE) from the plastic foam products manufactured at this facility shall not exceed 2.4 pounds of VOC per 100 pounds of total material processed. [District NSR Rule and District Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
19. Emissions from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.10 lb-NO<sub>x</sub>/MMBtu; 0.084 lb-CO/MMBtu; 0.0076 lb-PM<sub>10</sub>/MMBtu; or 0.00285 lb-SO<sub>x</sub>/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
20. The permittee shall maintain the thermal oxidizer in accordance with the manufacturer's instructions. A copy of the manufacturer's instructions shall be kept onsite and made available for inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
21. The combustion zone of the thermal oxidizer shall be maintained at a minimum of 1,500 degrees Fahrenheit. [District NSR Rule] Federally Enforceable Through Title V Permit
22. The thermal oxidizer shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District NSR Rule] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following minimum air flow rates (scfm) from the respective production areas to the thermal oxidizer when in production: 3500 from the roll storage warehouse; 528 from each foam extrusion die hood; and 203 from each reclaim line smog hog. [District NSR Rule] Federally Enforceable Through Title V Permit
24. On-site and lifetime VOC emissions shall be determined using Pactiv's District approved mass balance emissions model. Should any changes occur to the approved mass balance emissions model, the permittee shall notify the District within 30 days and have the mass balance emissions model re-approved. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

25. Source testing to measure the minimum destruction efficiency of the thermal oxidizer and the minimum air flow rates from each production area shall be conducted at least once every twelve months. [District NSR Rule] Federally Enforceable Through Title V Permit
26. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District NSR Rule and District Rules 1081, 7.1] Federally Enforceable Through Title V Permit
27. Permittee shall use the results of the most recent blowing agent retention test(s) performed at this facility to demonstrate ongoing compliance with the VOC emission limits specified within this permit. Permittee shall perform additional blowing agent retention testing within 60 days of any significant product changes or any changes in the manufacturing process. A significant product change shall be considered as a change in the polymer used (e.g. switching from polyethylene to polypropylene) or a change in the type of blowing agent used. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
28. Permittee shall use the results of the most recent VOC capture efficiency test(s) performed at this facility to demonstrate ongoing compliance with the VOC capture efficiency limit specified within this permit. Permittee shall perform additional VOC capture efficiency testing within 60 days of any significant process changes that may have the potential to affect the capture efficiency at the extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. Significant process changes may include, but are not limited to, modifications to the hoods and/or enclosures serving each piece of equipment or changes to the ventilation system and/or airflow rates from each piece of equipment. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
29. The following test methods shall be used: air flow rates - EPA Method 1 or 2; stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; VOC - EPA Method 25 or 25A or ARB Method 100, referenced as methane; exempt VOC compounds - EPA Method 18, or alternative equivalent District and EPA approved test methods. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
30. During source testing, the weight of VOC blowing agent retained in polymeric materials shall be determined using ASTM Method D7132-05, Bay Area Test Method 45 (Determination of Butanes and Pentanes in Polymeric Materials, South Coast Test Method 306 (Analysis of Pentanes in Expandable Styrene Polymers), or an alternative equivalent District and EPA approved test method. [District NSR Rule] Federally Enforceable Through Title V Permit
31. During source testing, the overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be calculated using a mass balance and the allowable VOC test methods specified within this permit. The overall VOC capture efficiency shall be determined using the following equation: 
$$\text{VOC Capture Efficiency} = [1 - ((\text{TVI} - \text{CVT} - \text{VRFP}) / \text{TVI})] \times 100\%$$
 where TVI is the total VOC input; CVT is the total amount of VOC captured and sent to the thermal oxidizer, measured at the inlet to the thermal oxidizer; and VRFP is the amount of VOC retained in the finished products at the packing table. [District NSR Rule] Federally Enforceable Through Title V Permit
32. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
33. The permittee shall maintain a list of all the products manufactured at this facility and representative finished products associated VOC blowing agent retention rate(s). [District NSR Rule] Federally Enforceable Through Title V Permit
34. The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, maximum on-site process VOC emission rate (lb/day), and lifetime VOC emission rate (lb/100 pounds of total material processed). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3] Federally Enforceable Through Title V Permit
35. The permittee shall maintain records of the average on-site process VOC emission rate (lb/day). Records shall be maintained with minimum quarterly totals with the ability to calculate daily averages based on the number of operating days in any calendar quarter. For each calendar quarter, daily average records shall be updated by no later than the end of the first month following the end of each quarter. [District NSR Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

36. The permittee shall maintain accurate daily records of the thermal oxidizer combustion temperature. [District NSR Rule and District Rule 4682, 6.1.2] Federally Enforceable Through Title V Permit
37. Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District NSR Rule and District Rule 4682, 6.1.4] Federally Enforceable Through Title V Permit

## **Attachment B**

### **Roll Storage Area Source Test**

**C<sub>3</sub> - C<sub>6</sub> HYDROCARBON BASED CALCULATIONS**

Plant: Pactiv Corporation Fresno  
 Source: Roll Storage Duct

Date: 09-Nov-10

Hydrocarbon Compound	Molecular Weight	Molecular Formula	Laboratory Analysis, ppm as HC compound					
			ppm HC as I-Butane					
			Run 1	Run 2	Run 3	Run 1	Run 2	Run 3
C <sub>1</sub> Methane	16.04	CH <sub>4</sub>	3.20	3.10	2.80	0.88	0.86	0.77
C <sub>2</sub> Ethane	30.07	C <sub>2</sub> H <sub>6</sub>						
C <sub>3</sub> Propane	44.09	C <sub>3</sub> H <sub>8</sub>	3.40	3.20	3.20	2.58	2.43	2.43
C <sub>4</sub> Butane	58.12	C <sub>4</sub> H <sub>10</sub>	51.2	46.9	48.0	51.2	46.9	48.0
C <sub>5</sub> Pentane	72.15	C <sub>5</sub> H <sub>12</sub>						
C <sub>6</sub> Hexane	86.17	C <sub>6</sub> H <sub>14</sub>						
C <sub>6</sub> + as Hexane	86.17	C <sub>6</sub> H <sub>14</sub>						
CH <sub>3</sub> OH Methanol	32.04	CH <sub>3</sub> OH						
C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> Methyl Formate	60.05	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	87.0	79.1	78.9	89.9	81.7	81.5

	Run 1	Run 2	Run 3	Average
<u>Stack Parameters</u>				
Stack Gas Oxygen, %	20.90	20.90	20.90	20.90
Stack Gas Flowrate, dscfm	3,683	3,621	4,051	3,785
Moisture, %	0.0063	0.0044	0.0105	0.0071

Volatile Organic Compounds, VOC as Butane\*

ppm, wet	53.8	49.3	50.4	51.2	C <sub>3</sub> -C <sub>6</sub> HC 
ppm, dry	54.1	49.5	51.0	51.5	
lb/hr	1.80	1.62	1.87	1.77	
lb/day	43.3	39.0	44.9	42.4	

Methyl Formate

ppm, wet	89.9	81.7	81.5	84.4	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>
ppm, dry	90.5	82.1	82.4	85.0	
lb/hr	3.12	2.78	3.12	3.01	
lb/day	74.8	66.7	75.0	72.2	

Equations

Standard Temperature = 68 °F

HC corrected to Butane, ppm = ( MW of HC Compound / MW of Butane ) x ppm value

lb/hr = (1.3711E-06 lb-mole or / ft<sup>3</sup>) x 60 min/hr x Qs(std) x (MW of Methane) x ppm / [(T(std) + 460)]

\* C<sub>3</sub> - C<sub>6</sub> used to calculate ppm values and emission rates

## **Attachment C**

Pactiv Corporation's Historical Actual VOC Input Records

Pactiv Fresno Blowing Agent Usage - All numbers given in Pounds

	Old Process and Emissions Model*		New Process and Mass Balance Emissions Model*			2011		
	2009	2010	VOC	Non-VOC <i>Greenmate</i>	CO <sub>2</sub>	VOC	Non-VOC <i>Greenmate</i>	CO <sub>2</sub>
Jan		87,500				76324	16983	5100
Feb		92,949				66539	29863	3812
Mar		89,737				84877	32058	3500
Apr		88,062				65995	12638	2897
May		79,868				74601	13545	3828
Jun		89,921				81166	33177	6608
Jul		113,920				75178	34079	4831
Aug		106,670				80919	19057	6607
Sep	92766		74258	31380	4560			
Oct	103448		80481	17044	3238			
Nov	91166		81410	25319	2296			
Dec	98487		76224	39246	7207			

\* The new process and Mass Balance began on September 17, 2010

## **Attachment D**

### **Quarterly Net Emission Change Calculations**

**Quarterly Net Emissions Change (QNEC) Calculations**

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's permit database (PAS). The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

PE2 <sub>Quarterly</sub>					
NO <sub>x</sub>	5,063	(lb/year) ÷	4	(qtr/year) =	1,266 (lb/qtr)
SO <sub>x</sub>	144	(lb/year) ÷	4	(qtr/year) =	36 (lb/qtr)
PM <sub>10</sub>	385	(lb/year) ÷	4	(qtr/year) =	96 (lb/qtr)
CO	4,253	(lb/year) ÷	4	(qtr/year) =	1,063 (lb/qtr)
VOC	152,570	(lb/year) ÷	4	(qtr/year) =	38,143 (lb/qtr)

PE1 <sub>Quarterly</sub>					
NO <sub>x</sub>	5,063	(lb/year) ÷	4	(qtr/year) =	1,266 (lb/qtr)
SO <sub>x</sub>	144	(lb/year) ÷	4	(qtr/year) =	36 (lb/qtr)
PM <sub>10</sub>	385	(lb/year) ÷	4	(qtr/year) =	96 (lb/qtr)
CO	4,253	(lb/year) ÷	4	(qtr/year) =	1,063 (lb/qtr)
VOC	152,570	(lb/year) ÷	4	(qtr/year) =	38,143 (lb/qtr)

Therefore, the QNEC for each pollutant is calculated below.

QNEC					
Pollutant	PE2		PE1		QNEC
NO <sub>x</sub>	1,266	(lb/qtr) -	1,266	(lb/qtr) =	0 (lb/qtr)
SO <sub>x</sub>	36	(lb/qtr) -	36	(lb/qtr) =	0 (lb/qtr)
PM <sub>10</sub>	96	(lb/qtr) -	96	(lb/qtr) =	0 (lb/qtr)
CO	1,063	(lb/qtr) -	1,063	(lb/qtr) =	0 (lb/qtr)
VOC	38,143	(lb/qtr) -	38,143	(lb/qtr) =	0 (lb/qtr)

## **Attachment E**

Draft ATC

San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-36-2-10

LEGAL OWNER OR OPERATOR: PACTIV CORPORATION

MAILING ADDRESS: 5370 E HOME AVE  
FRESNO, CA 93727

LOCATION: 5370 E HOME AVE  
FRESNO, CA 93727

### EQUIPMENT DESCRIPTION:

MODIFICATION OF POLYSTYRENE FOAM EXTRUSION LINE #1 CONSISTING OF #EX-10 PRIMARY EXTRUDER, #EX-11 SECONDARY EXTRUDER, MELT PUMP (REMOVABLE), AND #VB-10 VACUUM PUMP WITH SECONDARY EXTRUDER DIE HOOD SERVED BY A 5.78 MMBTU/HR ADWEST TECHNOLOGIES MODEL RETOX 20.0 RTO 95 DUAL CHAMBER REGENERATIVE THERMAL OXIDIZER: RE-INSTATE CONDITIONS TO CLARIFY THERMAL OXIDIZER CAN BE NON-OPERATIONAL DURING COMPLETE PRODUCTION SHUTDOWN

## CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authorities to Construct (ATC's) C-36-2-7 and '2-9 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Foam extrusion rate from this equipment shall not exceed 36,000 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

DRAFT

DAVID WARNER, Director of Permit Services

C-36-2-10 : Sep 29 2011 3:48PM - TOMS : Joint Inspection NOT Required

6. The door(s) on the secondary extrusion die hood shall be closed when the extrusion line is operating. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The thermal oxidizer and associated ventilation system shall be in use at all times of operation of the thermoformers, bulk grinders, reclaim extruders, or the fluff silos. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The thermal oxidizer and associated ventilation system shall be in use at all times of operation of the extruders and the roll storage area, except during routine oxidizer maintenance or complete production shutdowns. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Shut down of the thermal oxidizer for routine maintenance shall be recorded and shall not exceed a total of 20 hours per calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit
10. The overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be maintained at a minimum of 77.5%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rule 2301] Federally Enforceable Through Title V Permit
11. The destruction efficiency of the thermal oxidizer shall be maintained at a minimum of 95%, to maintain ERC's resulting from the installation of the thermal oxidizer. [District NSR Rule and District Rules 1081, 2301 and 4682] Federally Enforceable Through Title V Permit
12. The exhaust stack of the thermal oxidizer shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
13. The thermal oxidizer shall only be fired on PUC-regulated natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
14. Only isobutane or n-butane shall be used as VOC blowing agent components. Methyl formate, acetone, or carbon dioxide, or any combination thereof, shall be used as non-VOC blowing agent components. [District NSR Rule] Federally Enforceable Through Title V Permit
15. The maximum total VOC blowing agent consumption for the entire facility shall not exceed 8,500 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
16. The average total VOC blowing agent consumption for the entire facility shall not exceed 3,400 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
17. The maximum total methyl formate blowing agent consumption for the entire facility shall not exceed 1,500 lb/day. [District Rule 4102]
18. The maximum on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 1,045.0 lb/day, calculated on a monthly basis. [District NSR Rule] Federally Enforceable Through Title V Permit
19. The average on-site VOC emissions from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall not exceed 418.0 lb/day, calculated on a calendar quarter basis. [District NSR Rule] Federally Enforceable Through Title V Permit
20. The lifetime VOC emissions (LE) from the plastic foam products manufactured at this facility shall not exceed 2.4 pounds of VOC per 100 pounds of total material processed. [District NSR Rule and District Rule 4682, 5.3.1] Federally Enforceable Through Title V Permit
21. Emissions from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.10 lb-NO<sub>x</sub>/MMBtu; 0.084 lb-CO/MMBtu; 0.0076 lb-PM<sub>10</sub>/MMBtu; or 0.00285 lb-SO<sub>x</sub>/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
22. The permittee shall maintain the thermal oxidizer in accordance with the manufacturer's instructions. A copy of the manufacturer's instructions shall be kept onsite and made available for inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
23. The combustion zone of the thermal oxidizer shall be maintained at a minimum of 1,500 degrees Fahrenheit. [District NSR Rule] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

24. The thermal oxidizer shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District NSR Rule] Federally Enforceable Through Title V Permit
25. The permittee shall maintain the following minimum air flow rates (scfm) from the respective production areas to the thermal oxidizer when in production: 3500 from the roll storage warehouse; 528 from each foam extrusion die hood; and 203 from each reclaim line smog hog. [District NSR Rule] Federally Enforceable Through Title V Permit
26. On-site and lifetime VOC emissions shall be determined using Pactiv's District approved mass balance emissions model. Should any changes occur to the approved mass balance emissions model, the permittee shall notify the District within 30 days and have the mass balance emissions model re-approved. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
27. Source testing to measure the minimum destruction efficiency of the thermal oxidizer and the minimum air flow rates from each production area shall be conducted at least once every twelve months. [District NSR Rule] Federally Enforceable Through Title V Permit
28. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District NSR Rule and District Rules 1081, 7.1] Federally Enforceable Through Title V Permit
29. Permittee shall use the results of the most recent blowing agent retention test(s) performed at this facility to demonstrate ongoing compliance with the VOC emission limits specified within this permit. Permittee shall perform additional blowing agent retention testing within 60 days of any significant product changes or any changes in the manufacturing process. A significant product change shall be considered as a change in the polymer used (e.g. switching from polyethylene to polypropylene) or a change in the type of blowing agent used. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
30. Permittee shall use the results of the most recent VOC capture efficiency test(s) performed at this facility to demonstrate ongoing compliance with the VOC capture efficiency limit specified within this permit. Permittee shall perform additional VOC capture efficiency testing within 60 days of any significant process changes that may have the potential to affect the capture efficiency at the extruders, thermoformers, grinders, reclaim extruders, fluff silos or roll storage area. Significant process changes may include, but are not limited to, modifications to the hoods and/or enclosures serving each piece of equipment or changes to the ventilation system and/or airflow rates from each piece of equipment. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
31. The following test methods shall be used: air flow rates - EPA Method 1 or 2; stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; VOC - EPA Method 25 or 25A or ARB Method 100, referenced as methane; exempt VOC compounds - EPA Method 18, or alternative equivalent District and EPA approved test methods. [District NSR Rule and District Rule 4682] Federally Enforceable Through Title V Permit
32. During source testing, the weight of VOC blowing agent retained in polymeric materials shall be determined using ASTM Method D7132-05, Bay Area Test Method 45 (Determination of Butanes and Pentanes in Polymeric Materials, South Coast Test Method 306 (Analysis of Pentanes in Expandable Styrene Polymers), or an alternative equivalent District and EPA approved test method. [District NSR Rule] Federally Enforceable Through Title V Permit
33. During source testing, the overall VOC capture efficiency from the extruders, thermoformers, grinders, reclaim extruders, fluff silos and roll storage area shall be calculated using a mass balance and the allowable VOC test methods specified within this permit. The overall VOC capture efficiency shall be determined using the following equation: 
$$\text{VOC Capture Efficiency} = [1 - ((\text{TVI} - \text{CVT} - \text{VRFP}) / \text{TVI})] \times 100\%$$
 where TVI is the total VOC input; CVT is the total amount of VOC captured and sent to the thermal oxidizer, measured at the inlet to the thermal oxidizer; and VRFP is the amount of VOC retained in the finished products at the packing table. [District NSR Rule] Federally Enforceable Through Title V Permit
34. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
35. The permittee shall maintain a list of all the products manufactured at this facility and representative finished products associated VOC blowing agent retention rate(s). [District NSR Rule] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

36. The permittee shall maintain records of the following: polystyrene foam extrusion rate (lb/day - per extrusion line), type and amount of each blowing agent used, maximum on-site process VOC emission rate (lb/day), and lifetime VOC emission rate (lb/100 pounds of total material processed). Records shall be maintained with minimum monthly totals with the ability to calculate daily averages based on the number of operating days in any given month. For each month, daily average records shall be updated by no later than the end of the following month. [District NSR Rule and District Rule 4682, 6.1.1 & 6.1.3] Federally Enforceable Through Title V Permit
37. The permittee shall maintain records of the average on-site process VOC emission rate (lb/day). Records shall be maintained with minimum quarterly totals with the ability to calculate daily averages based on the number of operating days in any calendar quarter. For each calendar quarter, daily average records shall be updated by no later than the end of the first month following the end of each quarter. [District NSR Rule] Federally Enforceable Through Title V Permit
38. The permittee shall maintain accurate daily records of the thermal oxidizer combustion temperature. [District NSR Rule and District Rule 4682, 6.1.2] Federally Enforceable Through Title V Permit
39. Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District NSR Rule and District Rule 4682, 6.1.4] Federally Enforceable Through Title V Permit

DRAFT