28 August 2009

Mr. Michael Conway
Toray Plastics (America), Inc.
50 Belver Avenue
North Kingstown, RI 02852-7500

Dear Mr. Conway:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your application for a minor source permit for process equipment at your facility, located at 50 Belver Avenue, North Kingstown, RI.

Enclosed is a minor source permit issued pursuant to our review of your application (Approval No. 2069).

I may be reached at 222-2808, extension 7110 if there are any questions.

Sincerely,

Ruth A. Gold
Senior Air Quality Specialist
Office of Air Resources

cc: North Kingstown Building Official
Eric A. Pearson, ESS Group

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

MINOR SOURCE PERMIT

TORAY PLASTICS (AMERICA), INC.

APPROVAL NO. 2069

Pursuant to the provisions of Air Pollution Control Regulation No. 9, this minor source permit is issued to:

Toray Plastics (America), Inc.

For the following:

Installation of a new polyester scrap extruder system in the Lumirror Scrap Warehouse.

Located at: *50 Belver Avenue, North Kingstown*

This permit shall be effective from the date of its issuance and shall remain in effect until revoked by or surrendered to the Department. This permit does not relieve *Toray Plastics (America), Inc.* **from compliance with applicable state and federal air pollution control rules and regulations. The design, construction and operation of this equipment shall be subject to the attached permit conditions and emission limitations.**

Douglas L. McVay, Acting Chief
Office of Air Resources

Date of issuance

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

Permit Conditions and Emission Limitations

TORAY PLASTICS (AMERICA), INC.

Approval No. 2069

A. Emission Limitations

1. The emissions of listed toxic air contaminants discharged to the atmosphere from the entire facility shall not exceed the limitations in Tables 1 and 2. These limitations were established to ensure that emissions from this facility do not exceed any of the Acceptable Ambient Levels (AALs) listed in Air Pollution Control Regulation No. 22. The limitations shown in pounds per year are calculated on a 12-month rolling basis. Emissions from activities exempted from the provisions of APC Regulation No. 22 in subsection 22.2.2 are not included in this limitation.

B. Operating Requirements

1. The type of material processed through the scrap extruder shall be limited to polyester.

2. The maximum quantity of polyester processed through the scrap extruder shall not exceed 1,500 pounds per hour.

3. The number of polymerization batches conducted in the six polymerization esterification units (P001-P006) shall not exceed 8,286 batches per year.

4. The number of polymerization batches conducted in the six polymerization units (P007-P012) shall not exceed 8,286 batches per year.

5. The maximum quantity of material processed in the precrystallizer (P014) shall not exceed 23,145 tons per year.

6. VOC emissions generated from the scrap extruder vacuum pump and the die and filter cleaning activities shall be captured, contained and routed to the wet scrubber (C001) and the catalytic oxidizer (C002) for treatment prior to discharge to the atmosphere.

7. The wet scrubber (C001) and the catalytic oxidizer (C002) shall be operated according to their design specifications whenever the scrap extruder or the die and filter cleaning activities are in operation or are emitting air contaminants.

C. Monitoring

1. Scrubber level for the wet scrubber (C001) shall be monitored continuously.

2. Scrubber liquor make-up rate for the wet scrubber (C001) shall be monitored twice per day.

3. Outlet temperature and operating temperature for the catalytic oxidizer (C002) shall be monitored continuously.

D. Record Keeping and Reporting

1. The owner/operator shall collect, record and maintain the following information on a monthly basis, no later than 15 days after the first of the month:

   a. The quantity of scrap polyester processed in the scrap extruder.

   b. The total number of polymerization batches conducted in the six polymerization esterification units (P001-P006).

   c. The total number of polymerization batches conducted in the six polymerization units (P007-P012).

   d. The quantity of material processed in the precrystallizer (P014) in tons per year.

   Monthly and 12-month rolling totals shall be determined for each of the above items. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.

2. The owner/operator shall notify the Office of Air Resources in writing, within 15 days of determining that:

   a. The total of number batches processed in the six polymerization esterification units (P001-P006) exceeds 8,286 batches per year; or,

   b. The total of number batches processed in the six polymerization units (P007-P012) exceeds 8,286 batches per year; or,

   c. The quantity of material processed in the precrystallizer (P014) exceeds 23,145 tons per year.

3. The owner/operator shall, on a monthly basis, no later that 15 days after the first of the month, determine the total quantity of acetaldehyde, 1,4-dioxane, ethylene glycol, and formaldehyde and methanol discharged to the atmosphere from the entire facility. Monthly and 12-month rolling averages shall be calculated. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.

4. The owner/operator shall notify the Office of Air Resources in writing, within 15 days of determining that the total quantity of acetaldehyde, 1,4-dioxane, ethylene glycol, formaldehyde, or methanol discharged to the atmosphere from the entire facility exceeds the 12-month emission limitations in Table 1.

5. The owner/operator shall notify the Office of Air Resources within 15 days of determining that the total quantity of 1,4-dioxane, ethylene glycol, formaldehyde, or methanol discharged to the atmosphere from the entire facility exceeds the hourly or daily emissions limitations in Table 2.

6. The owner/operator shall notify the Office of Air Resources, in writing, of the date of the actual initial start up of the new scrap extruder no later than 15 days after such date.

7. The owner/operator shall conduct the following recordkeeping for the wet scrubber (C001) and the catalytic oxidizer (C002):

    a. The owner/operator shall check the scrubber level and make-up rate for the wet scrubber (C001) a minimum of once per day and the date, time and a measurement shall be recorded. If the control device is not operating because the process is shutdown, the owner/operator shall record that the process is shutdown in lieu of a measurement.

    b. The owner/operator shall check the outlet temperature and operating temperature for catalytic oxidizer (C002) a minimum of once per day and the date, time and a measurement shall be recorded. If the control device is not operating because the process is shutdown, the owner/operator shall record that the process is shutdown in lieu of a measurement.

8. Deviations from permit conditions, including those attributable to upset conditions as defined in this permit, shall be reported, in writing, within (5) business days of the deviation, to the Office of Air Resources. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

9. The owner/operator shall notify the Office of Air Resources of any anticipated noncompliance with the terms of this permit or any other applicable air pollution control rules and regulations.

10. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to any equipment that would:

    a. Change the representation of the facility in the application.

    b. Alter the applicability of any state or federal air pollution rules or regulations.

    c. Result in the violation of any terms or conditions of this permit.

    d. Qualify as a modification under APC Regulation No. 9.

    Such notification shall include:

    - Information describing the nature of the change.

    - Information describing the effect of the change on the emission of any air contaminant.

    - The scheduled completion date of the planned change.

    Any such change shall be consistent with the appropriate regulation and have the prior approval of the Director.

11. The Office of Air Resources may reopen and revise this permit if it determines that:

    a. a material mistake was made in establishing the operating restrictions; or,

    b. inaccurate emission factors were used in establishing the operating restrictions; or,

    c. emission factors have changed as a result of stack testing or emissions monitoring.

12. The owner/operator shall submit to the Office of Air Resources a land use report no later than April 15th of each year. This report shall include, at a minimum, the following information:

    - Identification of each receptor that the owner/operator used an adjusted annual AAL to determine the acceptability of acetaldehyde impacts in the modeling analysis submitted in support of the 24 February 2009 application, as amended, for a new scrap extruder.
    - The land use at that receptor in the modeling analysis.
    - The current land use at that receptor, including zoning, owner and occupant.
    - A statement certifying that no adjusted receptor is located on a parcel that is occupied by a school, day care center, residence or food preparation facility.

In preparing this report, the owner/operator shall utilize information from the Town of North Kingstown and the Rhode Island Economic Development Corporation.

If, upon review of this report, it is determined that the use of an adjusted AAL is no longer allowable based on changes in land use or other factors that change the potential duration of public exposure to acetaldehyde in that area, the owner/operator shall submit a plan that demonstrates how the facility will achieve compliance with the AAL for acetaldehyde. This plan shall be filed within 60 days of written notice from the Office of Air Resources that the use of an adjusted AAL is no longer allowable.

13. All records required in this permit shall be maintained for a minimum of five years after the date of each record, and shall be made available to representatives of the Office of Air Resources upon request.

E. Other Permit Conditions

1. To the extent consistent with the requirements of this permit and applicable federal and state laws, the facility shall be designed, constructed and operated in accordance with the representation of the facility in the permit application.

2. At all times, including periods of startup, shutdown and malfunction, the owner/operator shall, to the extent practicable, maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Office of Air Resources, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

3. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter the facility at all times for the purpose of inspecting any air pollution source, investigating any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.

4. The emission and dispersion characteristics of all sources of any listed toxic air contaminant at the facility shall be consistent with the parameters used in the air quality modeling to demonstrate that the emissions do not cause an impact, at or beyond the property line of the facility, which exceeds the Acceptable Ambient Level for that substance. The Office of Air Resources, in its sole discretion, may reopen this minor source permit if it determines that the emission and dispersion characteristics have changed significantly and that emission limitations must be revised and/or added to this permit to ensure compliance with Air Pollution Control Regulation No. 22.

5. The cyclone separator and the four cartridge filters installed in association with the scrap extruder are considered a process cyclone separator and process cartridge filters. A process cyclone separator and a process cartridge filter means a device whose primary purpose is to recover material as an integral part of a process. The cyclone separator and four cartridge filters shall be in use when the scrap extruder system is in operation. The owner/operator may replace the process cyclone separator and the four process filter cartridges with equally or more efficient unit without prior notice to the Office of Air Resources.

6. If there is any conflict between any emission limitation in Table 1 or Table 2 of this permit and any previously issued minor source permit, the owner/operator shall comply with the emission limitation in this permit.

F. Malfunctions

1. Malfunction means a sudden and unavoidable breakdown of process or control equipment. In case of malfunction of the wet scrubber (C001) and/or the catalytic oxidizer (C002), all reasonable measures shall be taken to assure resumption of the designed control efficiency as soon as possible. In the event that the malfunction of the wet scrubber (C001) and/or the catalytic oxidizer (C002) is expected or may reasonably be expected to continue for longer than 24 hours and if the owner/operator wishes to operate the scrap extruder or the die and filter cleaning activities beyond that period, the Director shall be petitioned for a variance under Section 23-23-15 of the General Laws of Rhode Island, as amended. Such petition shall include but is not limited to, the following:

   a. Identification of the specific air pollution control system (ie. The wet scrubber (C001), and the catalytic oxidizer (C002)) and the source on which it is installed,

   b. The expected period of time that the air pollution control system will be malfunctioning or out of service,

   c. The nature and quantity of air contaminants likely to be emitted during said period,

   d. Measures that will be taken to minimize the length of said period, and

   e. The reasons it would be impossible or impractical to cease the source operation during said period.

2. The owner/operator may seek to establish that a malfunction of the wet scrubber (C001) and/or the catalytic oxidizer (C002) that would result in noncompliance with any of the terms of this permit or any other applicable air pollution control rules and regulations was due to unavoidable increases in emissions attributable to the

malfunction. To do so, the owner/operator must demonstrate to the Office of Air Resources that:

a. The malfunction was not attributable to improperly designed air pollution control equipment, lack of preventative maintenance, careless or improper operation or operator error;

b. The malfunction is not part of a recurring pattern indicative of inadequate design, operation or maintenance;

c. Repairs necessary to bring the wet scrubber (C001) and/or the catalytic oxidizer (C002) back to operating at their design control efficiency were performed in an expeditious fashion. Off-shift labor and overtime should be utilized, to the extent practicable, to ensure that such repairs were completed as expeditiously as practicable. Any parts or materials needed should be shipped overnight where possible or practical.

d. All possible steps were taken to minimize emissions during the period of time that the repairs were performed.

e. Emissions during the period of time that the repairs were performed will not:

    (1) Cause an increase in the ground level ambient concentration at or beyond the property line in excess of that allowed by Air Pollution Control Regulation No. 22 and any Calculated Acceptable Ambient Levels; and

    (2) Cause or contribute to air pollution in violation of any applicable state or national ambient air quality standard.

f. The reasons that it would be impossible or impractical to cease the operation of the scrap extruder or the die and filter cleaning activities during said period.

This demonstration must be provided to the Office of Air Resources within two working days of the time when the malfunction occurred, and contain a description of the malfunction, any steps taken to minimize emissions and corrective actions taken.

The owner/operator shall have the burden of proof in seeking to establish that noncompliance was due to unavoidable increases in emissions attributable to the malfunction.

Table 1 - Annual Emission Limitations						
		Allowable Emissions (pounds/year)				
Emission Unit	Source	Acetaldehyde	1,4-Dioxane	Ethylene Glycol	Formaldehyde	Methanol
		lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
P001- P006	Poly ES vessel (P1-P6, PTA)	587	3.82	31.01	0.887	
P006	Poly ES/EI vessel (P6-DMT)					33.51
P088(IA)	Poly EG Preheater			70.74		
P007 - P012	Poly vessels (P1-P6)	269	308.79	1266.7	3.15	
	Controlled emissions P007-P012	338			0.84	
P012	Poly vessel (P6)					125.93
P014	Poly Precrystallizer	933			2.196	
P015-P020(IA)	RIK & L1-L3 CVD (low vacuum)	212.32			0.428	
P013, P015-P020(IA)	RIK & L1-L3 CVD (high vacuum)	345.14	1.26	3.91	0.121	
P037, P065-P067(IA)	RIK & L1-L3 process vacuum & extruder hopper	415.77		1.61	0.849	
P068 - P071	L1 & L2 Sub-extruders	2033.44	14.10	616.98	37.19	
P079-P081(IA)	LUMIRROR Casting Drums	260.18	4.16	17.38	0.710	
P060-P061, P022	Die & Filter A&B Tanks	12.09	51.27			
P023, P098	Poly R-EG Process, Wastewater RTO (up)	831.59	43.66	121.76		3800.84
P106	Torayfan Coaters and A5 Infrared Oven			13.45	13.36	2570
P023	TEG Pit	557.68	3.97			7.47
	Wastewater Mixing Tank	305.05	1.75			4.13
	Wastewater RTO (down)	104.30	0.365			9.65
	Effluent Tub & Effluent Tub Weir	416.27	0.318			0.318
T001	N-EG tank (P107-02-01)			29.20		
T002	P-EG tank (P107-02-02)			79.92		
T003	R-EG tank (P107-09-01)			17.03		73.44
T010	RMA tank (P607-01-01)					78.81
	RMA tank fugitives					4380.0
T005	R-TEG tank (L913-17-01)	4.25	1.724			
TBD	Scrap extruder	101.47	0.703	30.79	1.86	

Table 2 Short-Term Emission Limitations						
		Allowable Emissions				
		1,4-Dioxane	Ethylene Glycol	Formaldehyde		Methanol
Emission unit	Source	lb/hr	lb/hr	lb/hr	lb/day	lb/hr
P001- P006	Poly ES vessel (P1-P6, PTA)	1.75E-03	0.0142	4.05E-04	2.43E-03	
P006	Poly ES/EI vessel (P6-DMT)					3.83E-03
P088(IA)	Poly EG Preheater		0.0323			
P007 - P012	Poly Vessels (P1-P6)	0.141	0.578	1.44E-03	8.64E-03	
	Controlled emissions P007-P012			9.60E-05	2.30E-03	
P012	Poly vessel (P6)					0.0575
P014	Poly Precrystallizer			2.51E-04	6.02E-03	
P015 - P020(IA)	RIK & L1-L3 CVD (low vacuum)			3.42E-04	1.17E-03	
P013, P015-P020(IA)	RIK & L1-L3 CVD (high vacuum)	1.00E-03	3.12E-03	9.68E-05	3.32E-04	
P037, P065 - P067(IA)	RIK, & L1-L3 process vacuum & extruder hopper		1.84E-04	9.69E-05	2.32E-03	
P068 - P071	L1 & L2 Sub-extruders	1.61E-03	0.0704	4.25E-03	0.102	
P079 - P081(IA)	LUMIRROR Casting Drums	4.75E-04	1.98E-03	8.11E-05	1.95E-03	
P060-P061, P022	Die & Filter A&B Tanks	0.179				
P023, P098	Poly R-EG Process, Wastewater RTO (up)	4.98E-03	0.0139			0.434
P106	Torayfan Coaters and A5 Infrared Oven		0.0015	0.0015	0.036	0.2934
P023	TEG pit	4.53E-04				8.52E-04
	Wastewater Mixing Tank	1.99E-04				4.71E-04
	Wastewater RTO (down)	1.76E-03				0.402
	Effluent Tub & Effluent Tub Weir	3.63E-05				3.63E-05
T001	N-EG tank (P107-02-01)		3.33E-03			
T002	P-EG tank (P107-02-02)		9.12E-03			
T003	R-EG tank (P107-09-01)		1.94E-03			8.38E-03
T010	RMA tank (P607-01-01)					9.00E-03
	RMA tank fugitives					0.5000
T005	R-TEG tank (L913-17-01)	1.97E-04				
TBD	Scrap Extruder	8.03E-05	3.51E-03	2.12E-04	5.08E-03	