

23 January 2006

Mr. Gene Laychak
Plant Director
Soluol Inc.
Green Hill and Market Streets
West Warwick, Rhode Island 02893

Dear Mr. Laychak:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your request for a minor source permit for process and air pollution control equipment at your facility's new location of 199 Amaral Street, East Providence, Rhode Island.

Enclosed is a minor source permit issued pursuant to our review (Approval Nos. 1871-1874).

I can be reached at 401-222-2808, extension 7011 if you have any questions.

Very truly yours,

Douglas L. McVay,
Associate Supervising Engineer
Office of Air Resources

cc: East Providence Building Official

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

MINOR SOURCE PERMIT

SOLUOL INC.

APPROVAL NOs. 1871-1874

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

Soluol Inc.

For the following:

Installation of process and ancillary equipment for the production of resins, coatings, adhesives and other specialty materials (Approval No. 1871) . Installation of an air pollution control system consisting of a condenser (Approval No. 1872) followed by a carbon adsorption unit (Approval No. 1873) to control VOC emissions form process vents. Installation of one dust collector (Approval No. 1874) to control fugitive particulate emissions from raw material loading.

Located at: 199 Amaral Street, East Providence

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 *Soluol 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.

**Stephen Majkut, 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

**Soluol Inc.
Approval Nos. 1871-1874**

A. Emission Standards

1. Process vessels

- a. All process vessels shall be fitted with tightly fitted covers that are vented to an air pollution control system.
- b. The process vessel cover shall be closed at all times when the vessel contains VOC, except for raw material additions and sampling..
- c. VOC emissions from any process vessel vent shall be controlled by an air pollution control system that consists of a surface condenser followed by a carbon adsorption unit before discharge to the atmosphere.
- d. The maximum outlet exhaust gas temperature of the surface condenser shall not exceed 50°F.
- e. The VOC removal efficiency for the carbon adsorption system shall be at least 95%, unless the outlet concentration is less than 20 ppmv.

2. Storage tanks

The following requirements are applicable to the storage and/or transfer of VOCs:

- a. All storage tanks that store VOC shall have a vapor balance system that is designed and operated to route VOCs displaced from loading of the storage tank to the tank truck from which the storage tank is filled.
- b. Tank trucks must have a current certification in accordance with the U.S. Department of Transportation (DOT) pressure test requirements of 49 CFR 180 for tank trucks and 49 CFR 173.31 for railcars.
- c. VOCs must only be unloaded from tank trucks when vapor balance systems are connected to the storage tank vapor balance system.
- d. No pressure relief device on the storage tank or tank truck shall open during loading or as a result of temperature changes (breathing losses).

- e. Pressure relief devices will be in place on all storage tanks that store VOC to minimize breathing losses.
 - f. The pressure relief devices on storage tanks TK-3020, TK-3030, TK-3050, TK-3070 and TK-3080 shall be set to no less than 13 inches water column at all times to prevent breathing losses.
 - g. The pressure relief devices on storage tanks TK-3010, TK-3040, TK-3051, TK-3060, TK-3090 and TK-3091 shall be set to no less than 11 inches water column at all times to prevent breathing losses.
3. Dust Collector (Approval No. 1874)
- a. Fugitive particulate emissions from solids additions to process vessels shall be captured and routed to a dust collector before discharge to the atmosphere.
 - b. Particulate emissions routed to the dust collector shall be reduced by 99% or greater, for particles greater than 0.3 microns, before discharge to the atmosphere.
4. Facility-wide
- a. Volatile Organic Compound (VOC) Emission Limitations

The total quantity of VOC emissions discharged to the atmosphere from the entire facility shall not exceed 8167 pounds of VOC per calendar month based upon a 12 month rolling average.
 - b. Hazardous Air Pollutant (HAP) Emission Limitations

The total quantity of HAP emissions discharged to the atmosphere from the entire facility shall not exceed 1500 pounds of any one (1) HAP or 4000 pounds of any combination of HAPs per calendar month based upon a 12-month rolling average. Hazardous Air Pollutant shall mean an air pollutant which has been listed pursuant to Section 112(b) of the Clean Air Act Amendments of 1990.
 - c. The emissions of listed toxic air contaminants discharged to the atmosphere from the entire facility shall not exceed the limitations in Table 1. The limitations shown in pounds per year are calculated on a 12-month rolling basis.
5. Visible emissions from any stack shall not exceed 10% opacity (six-minute average).

B. Operating Requirements

1. A leak detection and repair (LDAR) program for the entire facility shall be submitted to the Office of Air Resources no later than 90 days of startup. The LDAR program shall be implemented no later than 180 days after startup.

C. Monitoring

1. The condenser outlet gas temperature, for the air pollution control condenser used to comply with the requirements of this permit, shall be measured and recorded at least every fifteen minutes during any period in which the condenser is operating. The temperature monitoring device shall be certified by the manufacturer to be accurate within ± 2 percent of the temperature measured in degrees Celsius or $\pm 2.5^{\circ}\text{C}$, whichever is greater.
2. The temperature monitoring device shall be calibrated annually.
3. The dust collector pressure drop shall be monitored continuously and recorded at least once per shift whenever the dust collector is in operation.
4. The monitoring device used for measurement of the dust collector pressure drop shall be zero checked monthly and calibrated annually.
5. The VOC concentration at the inlet and outlet of the carbon adsorber shall be measured and recorded once per week. Breakthrough shall be assumed if the outlet concentration is more than 5% of the inlet concentration, unless the outlet concentration is less than 20 ppmv.
6. The analyzer used to measure the inlet and outlet concentrations shall be calibrated with each use.

D. Record Keeping and Reporting

1. The owner/operator shall maintain the following records:
 - a. The name of each batch product and the number of batches per month of each product.
 - b. Each individual VOC and HAP ingredient contained in each batch.
 - c. The weight in pounds of each VOC and HAP ingredient in each batch.
 - d. Emission factors or calculation procedures, as determined by Soluol, for each VOC and HAP ingredient in each batch, sufficient to determine actual VOC and HAP emissions from each batch.

- e. For each clean-up material, each VOC component, and the content in volume percent.
 - f. For each material containing VOC and/or HAP used at the facility, the quantity used and the amount of waste generated (in gallons or pounds) at the facility on a monthly basis.
 - g. The outlet gas temperature of the control condenser used to comply with the requirements of this permit.
 - h. The VOC inlet and outlet concentrations from the carbon adsorber used to comply with the requirements of this permit.
 - i. The dust collector pressure drop.
 - j. All monitoring equipment calibration records.
2. The owner/operator shall, on a monthly basis, no later than 10 business days after the first of the month, determine the total quantity of VOC and the total quantity of each HAP discharged to the atmosphere from all operations conducted at the facility. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
 3. The owner/operator shall notify the Office of Air Resources, within 15 days, whenever the quantity of VOC discharged to the atmosphere from all operations at this facility exceeds 8167 pounds per month (12-month rolling average).
 4. The owner/operator shall notify the Office of Air Resources, within 15 days, whenever the quantity of HAPs discharged to the atmosphere from all operations at this facility exceeds 1500 pounds of any one (1) HAP or 4000 pounds of any combination of HAPs per calendar month (12-month rolling average).
 5. The owner/operator shall, on a daily basis, determine the total quantity of formaldehyde, isopropyl alcohol, methyl ethyl ketone, trichloroethylene, triethyl amine, and toluene and discharged to the atmosphere from the entire facility. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
 6. The owner/operator shall notify the Office of Air Resources within 24 hours, whenever the total quantity of formaldehyde, isopropyl alcohol, methyl ethyl ketone, trichloroethylene, triethyl amine, or toluene discharged to the atmosphere from the entire facility exceeds the pounds/hour or pounds/day limitations in Table 1.
 7. The owner/operator shall, on a monthly basis, no later than 10 business days after the first of the month, determine the total quantity of formaldehyde, trichloroethylene, triethyl amine, toluene, and toluene diisocyanate discharged to

the atmosphere from the entire facility during the previous 12 months. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.

8. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of formaldehyde, trichloroethylene, triethyl amine, toluene, or toluene diisocyanate discharged to the atmosphere from the entire facility during the previous 12 months exceeds the pounds/year limitations in Table 1.
9. Except as allowed under Conditions D.3, D.4 or D.8, the owner/operator must notify the Office of Air Resources no later than 24 hours after noncompliance with any emission standard is discovered. The notification required under Conditions D.3, D.4, D.6, D.8 and this condition shall include:
 - a. Identification of the emission limitation exceeded
 - b. Suspected reason for the exceedance
 - c. Corrective action taken or to be taken
 - d. Anticipated length of the exceedance
10. For any leak detected pursuant to the LDAR program, the owner/operator shall record the following information:
 - a. The name of the leaking equipment;
 - b. The date and time the leak is detected;
 - c. The action taken to repair the leak;
 - d. The date and time the leak is repaired.
11. For any leak inspection conducted pursuant to the LDAR program during which no leaks are detected, the owner/operator shall record the following information:
 - a. A record that the inspection was performed;
 - b. The date and time of the inspection;
 - c. A statement that no leaks were detected
12. The owner/operator shall notify the Office of Air Resources, in writing, of the date of actual initial start-up of the equipment covered by this permit no later than fifteen days after such date.

13. 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.

14. 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.
15. The owner/operator shall notify the Office of Air Resources, in writing, of any noncompliance with the terms of this permit within 30 calendar days of becoming aware of such occurrence and supply the Director with the following information:
 - a. The name and location of the facility;
 - b. The subject source(s) that caused the noncompliance with the permit term;
 - c. The time and date of first observation of the incident of noncompliance;
 - d. The cause and expected duration of the incident of noncompliance;
 - e. The estimated rate of emissions (expressed in lbs/hr or lbs/day) during the incident and the operating data and calculations used in estimating the emission rate.
 - f. The proposed corrective actions and schedule to correct the conditions causing the incidence of noncompliance.

16. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of emissions discharged to the atmosphere from the entire facility, of any listed toxic air contaminant not identified in Table 1 exceeds the minimum quantity for that contaminant as specified in Appendix A of Air Pollution Control Regulation No. 9
17. 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. Malfunctions

1. Malfunction means a sudden and unavoidable breakdown of process or control equipment. In the case of a malfunction of any air pollution control system, 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 an air pollution control system is expected or may reasonably be expected to continue for longer than 24 hours and if the owner/operator wishes to operate the source on which it is installed at any time 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 and 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;
 - e. The reasons that 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 any air pollution control system 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 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 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.
- d. All possible steps were taken to minimize emissions during the period of time that repairs were performed.
- e. Emissions during the period of time that the repairs were performed will not:
 - (1) Cause and 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 source operation during said period.
- g. The owner/operator's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence.

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.

F. 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 prepared by ESS Group dated 30 June 2005.
- 2. 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, investigation any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.

3. 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.
4. A process condenser means a condenser whose primary purpose is to recover material as an integral part of a process. Each process condenser shall be in use when the condenser would support a vapor-to-liquid phase change for periods of source equipment operation that are at or above the boiling or bubble point of substance(s) at the liquid surface. The owner/operator may replace a process condenser with equally or more efficient solvent recovery equipment without prior notice to the Office of Air Resources.
5. The emission and dispersion characteristics of all sources of listed toxic air contaminants at the facility shall be consistent with the parameters used in the air quality modeling to demonstrate that the emissions of each listed toxic air contaminant from the facility does 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 the emission limitations in Table 1 must be revised to ensure compliance with Air Pollution Control Regulation No. 22.

G. Trial Batch Operations

1. The owner/operator may conduct trial batch operations subject to the following conditions. Trial batch operations do not include the production for sale of established products through established processes.
 - a. The owner/operator shall comply with the provisions of Air Pollution Control Regulation No. 9 by limiting the total quantity of emissions discharged to the atmosphere, from the trial operations to no more than:
 - (1) 10 pounds per hour or 100 pounds per day of VOC, whichever is more stringent; and,
 - (2) The minimum quantity for any listed toxic air contaminant, as specified in Appendix A of Air Pollution Control Regulation No. 9.
 - b. The owner/operator shall maintain the following records to determine compliance with Air Pollution Control Regulation No. 9 for the trial batch

operations. These records shall be maintained for a period of five (5) years and shall be available for inspection by the Office of Air Resources and the Environmental Protection Agency upon request for the purpose of determining compliance with this condition. These records shall include the following:

- (1) The date, start time and end time for each trial and the quantity of each material used for each trial;
- (2) The name, identification number, and amount used each hour and each day of each raw material.
- (3) For each raw material used, the VOC content and the quantity of any listed toxic air contaminant, in weight percent of the material.
- (4) The type and amount of any solvent used for cleanup operations.
- (5) Records of any and all calculations documenting the VOC and listed toxic air contaminant emissions.

c. The owner/operator shall notify the Office of Air Resources in writing, within 5 days, whenever the total quantity of emissions discharged to the atmosphere, from the trial operations exceeds:

- (1) 10 pounds per hour or 100 pounds per day of VOC, whichever is more stringent; or,
- (2) The minimum quantity for any listed toxic air contaminant, as specified in Appendix A of Air Pollution Control Regulation No. 9.

Table 1. Emission Limitations

Pollutant	Limitation		
	pounds/hour	pounds/day	pounds/year
Formaldehyde	0.02	0.08	30
Isopropyl Alcohol (IPA)	0.34		
Methyl Ethyl Ketone	0.9	9.5	
Toluene	3.03	29	8283
Toluene Diisocyanate (TDI)			19
Trichloroethylene (TCE)	0.42	2.0	728
Triethylamine	0.15		888