

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

GSI Technologies, Inc.  
Attn: Mr. Craig Mech-Director of Manufacturing  
311 Shore Drive  
Burr Ridge, Illinois 60527

Application No.: 10070027                      I.D. No.: 043419AAR  
Applicant's Designation: PRINTPRO1              Date Received: July 14, 2010  
Subject: New ConWeb #3, New Sonic Washer and Modification to ConWeb #2  
Date Issued: December 10, 2010  
Location: 311 Shore Drive, Burr Ridge, DuPage County, 60527

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of one (1) screen printing line (ConWeb #3), flexographic printing roll cleaner (Ultrasonic Anilox) and a modification to a screen printing line (ConWeb #2) as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit is issued based on the construction and modification of the screen printing lines and the roll cleaner not constituting a new major source or major modification pursuant to Title I of the Clean Air Act, specifically the Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 Ill. Adm. Code Part 203. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the Volatile Organic Material (VOM) emissions from the above-listed equipment below the levels that would trigger the applicability of these rules.
- b. This permit is issued based on the emission of Hazardous Air Pollutants (HAP) as listed in Section 112(g) of the Clean Air Act from the above-listed equipment being less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from the above-listed equipment not triggering the requirements of Section 112(g) of the Clean Air Act.
- c. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- 2a Pursuant to 35 Ill. Adm. Code 218.182(c) (3) (B), on and after May 30, 2007 no person shall operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F) , unless the person is in compliance with the control requirements of 35 Ill. Adm. Code 218.182(c) (4) or is exempt under 35 Ill. Adm. Code 218.182(f) or (g) .

- b. Pursuant to 35 Ill. Adm. Code 218.187(a) (1), on and after April 1, 2011 except as provided in 35 Ill. Adm. Code 218.187(a) (2), the requirements of 35 Ill. Adm. Code 218.187 shall apply to all cleaning operations which use organic materials at sources that emit a total of 6.8 kg/day (15 lbs/day) or more of VOM from cleaning operations at the source, in the absence of air pollution control equipment. For purposes of 35 Ill. Adm. Code 218.187, "cleaning operation" means the process of cleaning products, product components, tools, equipment, or general work areas during production, repair, maintenance, or servicing, including but not limited to spray gun cleaning, spray booth cleaning, large and small manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, and tank cleaning, at sources with emission units;
  - c. Pursuant to 35 Ill. Adm. Code 218.187(b), no owner or operator of a source subject to 35 Ill. Adm. Code 218.187 shall perform any cleaning operation subject to 35 Ill. Adm. Code 218.187 unless the owner or operator meets the requirements in 35 Ill. Adm. Code 218.187(b) (1), (b) (2), or (b) (3):
    - i. The VOM content of the as-used cleaning solutions (minus water and any compounds that are specifically exempted from the definitions of VOM) does not exceed the following emissions limitations:

| Cleaning of ink application equipment:                       | <u>kg/l</u> | <u>lb/gal</u> |
|--|-------------|---------------|
| Flexographic printing that does not print flexible packaging | 0.10        | 0.83          |
    - ii. The composite vapor pressure of each as-used cleaning solution used does not exceed 8.0 mmHg measured at 20°C (68°F);
  - d. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, or 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G shall apply only to photochemically reactive material.
3. This permit is issued based on the source not being subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Paper and Other Web Coating, 40 CFR 63 Subpart JJJJ. Pursuant to 40 CFR 63.3300(c), web coating lines in lithography, screen-printing, letterpress, and narrow-web flexographic printing processes are not part of the affected source of 40 CFR 63 Subpart JJJJ.
- 4a. Pursuant to 35 Ill. Adm. Code 218.204(c) (3), the paper coating limitation set forth in 35 Ill. Adm. Code 218.204(c) shall not apply to any owner or operator of any paper coating line on which flexographic or rotogravure printing is performed if the paper coating line complies

with the emissions limitations in 35 Ill. Adm. Code 218.401. In addition, screen printing on paper is not regulated as paper coating, but is regulated under 35 Ill. Adm. Code 218 Subpart TT. On and after May 1, 2011, the paper coating limitation shall also not apply to coating performed on or in-line with any digital printing press, or to size presses and on-machine coaters on papermaking machines applying sizing or water-based clays.

- b. This permit is issued based upon the screen printing lines not being subject to the requirements of 35 Ill. Adm. Code 218.986, Control Requirements for Other Emission Units Subpart TT. This is a result of the federally enforceable production and operating limitations of this permit, which restrict the maximum theoretical emissions of VOM from this facility to less than 100 tons per year and the potential to emit for VOM emissions to less than 25 tons per year.
- 5a. Pursuant to 35 Ill. Adm. Code 218.182(a), no person shall operate a cold cleaning degreaser unless:
- i. Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;
  - ii. The cover of the degreaser is closed when parts are not being handled; and
  - iii. Parts are drained until dripping ceases.
- b. Pursuant to 35 Ill. Adm. Code 218.182(b), no person shall operate a cold cleaning degreaser unless:
- i. The degreaser is equipped with a cover which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counter-weights or a powered system if:
    - A. The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F);
    - B. The solvent is agitated; or
    - C. The solvent is heated above ambient room temperature.
  - ii. The degreaser is equipped with a device for draining cleaned parts. The drainage device shall be constructed so that parts are enclosed under the cover while draining unless:
    - A. The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F); or

- B. An internal drainage device cannot be fitted into the cleaning system, in which case the drainage device may be external.
- iii. The degreaser is equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F) or if the solvent is heated above 50°C (120°F) or its boiling point:
  - A. A freeboard height of 7/10 of the inside width of the tank or 91 cm (36 in), whichever is less; or
  - B. Any other equipment or system of equivalent emission control as approved by the Illinois EPA and further processed consistent with 35 Ill. Adm. Code 218.108. Such a system may include a water cover, refrigerated chiller or carbon adsorber.
- iv. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser; and
- v. If a solvent spray is used, the degreaser is equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.
- c. Pursuant to 35 Ill. Adm. Code 218.182(c)(2)(B), no person shall operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F).
- d. Pursuant to 35 Ill. Adm. Code 218.187(c), the owner or operator of a subject source shall demonstrate compliance with 35 Ill. Adm. Code 218.187 by using the applicable test methods and procedures specified in 35 Ill. Adm. Code 218.187(g) and by complying with the recordkeeping and reporting requirements specified in 35 Ill. Adm. Code 218.187(e).
- e. Pursuant to 35 Ill. Adm. Code 218.187(d), the owner or operator of a source subject to the requirements of 35 Ill. Adm. Code 218.187 shall comply with the following for each subject cleaning operation:
  - i. Cover open containers and properly cover and store applicators used to apply cleaning solvents;
  - ii. Minimize air circulation around the cleaning operation;
  - iii. Dispose of all used cleaning solutions, cleaning towels, and applicators used to apply cleaning solvents in closed containers;
  - iv. Utilize equipment practices that minimize emissions.
- 6. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to

minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.

- 7a. Emissions and operation of the screen printing lines (Conweb lines) shall not exceed the following limits:

| <u>Emission Unit</u> | <u>VOM Usage &amp; Emissions</u> |                    | <u>HAP Usage &amp; Emissions</u> |                    |
|----------------------|----------------------------------|--------------------|----------------------------------|--------------------|
|                      | <u>(Lbs/Month)</u>               | <u>(Tons/Year)</u> | <u>(Lbs/Month)</u>               | <u>(Tons/Year)</u> |
| ConWeb #2 Line       | 80.00                            | 0.40               | 54.00                            | 0.27               |
| ConWeb #3 Line       | 80.00                            | 0.40               | 54.00                            | 0.27               |
|                      |                                  | 0.80               |                                  | 0.54               |

These limits are based on the maximum material usage, the maximum VOM content, and the maximum HAP content. VOM and HAP emissions from printing operations shall be determined from the following equation:

$$E = [\Sigma(M_i \times d_i \times C_i) - W \times C_w] / 2,000$$

where:

E = VOM or HAP emissions (tons);

M<sub>i</sub> = Raw material usage (gallons);

d<sub>i</sub> = Density of material (lbs/gallon);

C<sub>i</sub> = VOM or HAP content of the raw material (% by weight);

W = Certified amount of waste shipped-off (gallons); and

C<sub>w</sub> = Certified VOM or HAP content of the waste (% by weight).

- b. This Permit is issued based on negligible emissions of VOM from the ultrasonic anilox roll cleaner. For this purpose, VOM emissions from this unit shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- c. Compliance with the annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month of total).
- 8a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
- i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures

adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.

- ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Condition 9 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 9a. Pursuant to 35 Ill. Adm. Code 218.187(g) (1), testing to demonstrate compliance with the requirements of 35 Ill. Adm. Code 218.187 shall be conducted by the owner or operator within 90 days after a request by the Illinois EPA, or as otherwise specified in 35 Ill. Adm. Code 218.187. Such testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Illinois EPA in writing 30 days in advance of conducting the testing to allow the Illinois EPA to be present during the testing;
- b. Pursuant to 35 Ill. Adm. Code 218.187(g) (2), testing to demonstrate compliance with the VOM content limitations in 35 Ill. Adm. Code 218.187(b) (1), and to determine the VOM content of cleaning solvents and cleaning solutions, shall be conducted as follows:
  - i. The applicable test methods and procedures specified in 35 Ill. Adm. Code 218.105(a) shall be used, provided, however, Method 24 shall be used to demonstrate compliance; or
  - ii. The manufacturer's specifications for VOM content for cleaning solvents may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in 35 Ill. Adm. Code 218.105(a), however, Method 24 shall be used to determine compliance;
- c. Pursuant to 35 Ill. Adm. Code 218.187(g) (3), testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning

solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in 35 Ill. Adm. Code 218.110;

10. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to Section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
- 11a. Pursuant to 35 Ill. Adm. Code 218.182(d)(2), all persons subject to the requirements of 35 Ill. Adm. Code 218.182(c)(2)(B), (c)(2)(B), and (c)(3)(B) must maintain records which include for each purchase:
  - i. The name and address of the solvent supplier;
  - ii. The date of purchase;
  - iii. The type of solvent; and
  - iv. The vapor pressure of the solvent measured in mmHg at 20°C (68°F); and
  - v. For any mixture of solvents, the vapor pressure of the mixture, as used, measured in mmHg at 20°C (68°F).

- b. Pursuant to 35 Ill. Adm. Code 218.182(e), all records required by 35 Ill. Adm. Code 218.182(d) shall be retained for three years and shall be made available to the Illinois EPA upon request.
- c. Pursuant to 35 Ill. Adm. Code 218.187(e) (3), all sources complying with 35 Ill. Adm. Code 218.187 pursuant to the requirements of 35 Ill. Adm. Code 218.187(b) (1) shall collect and record the following information for each cleaning solution used:
  - i. For each cleaning solution which is prepared at the source with automatic equipment:
    - A. The name and identification of each cleaning solution;
    - B. The VOM content of each cleaning solvent in the cleaning solution;
    - C. Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);
    - D. The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;
    - E. The VOM content of the as-used cleaning solution with supporting calculations; and
    - F. A calibration log for the automatic equipment, detailing periodic checks;
  - ii. For each batch of cleaning solution which is not prepared at the source with automatic equipment:
    - A. The name and identification of each cleaning solution;
    - B. Date, time of preparation, and each subsequent modification of the batch;
    - C. The VOM content of each cleaning solvent in the cleaning solution;
    - D. The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and
    - E. The VOM content of the as-used cleaning solution, with supporting calculations. For cleaning solutions that are not prepared at the site but are used as purchased, the manufacturer's specifications for VOM content may be used if such manufacturer's specifications are based on results

of tests of the VOM content conducted in accordance with methods specified in 35 Ill. Adm. Code 218.105(a);

- d. Pursuant to 35 Ill. Adm. Code 218.187(e) (4), all sources complying with 35 Ill. Adm. Code 218.187 pursuant to the requirements of 35 Ill. Adm. Code 218.187(b) (2) shall collect and record the following information for each cleaning solution used:
    - i. The name and identification of each cleaning solution;
    - ii. Date, time of preparation, and each subsequent modification of the batch;
    - iii. The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with the applicable methods and procedures specified in 35 Ill. Adm. Code 218.110;
    - iv. The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and
    - v. The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with the applicable methods and procedures specified in 35 Ill. Adm. Code 218.110;
  - e. Pursuant to 35 Ill. Adm. Code 218.187(e) (7), all records required by 35 Ill. Adm. Code 218.187(e) shall be retained by the source for at least three years and shall be made available to the Illinois EPA upon request.
- 12a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
- i. Amount of each material, which contains either VOM or HAP, used on all screen printing lines (gallons/month and gallons/year);
  - ii. VOM and HAP content of each material containing VOM or HAP (% by weight);
  - iii. Density of each material containing VOM or HAP (lbs/gallon);
  - iv. Certified amount of waste shipped-off (lbs/month and lbs/year) and its VOM content (% by weight);
  - v. Solvent usage in the flexographic printing roll cleaner (gallons/month and gallons/year); and
  - vi. Monthly and annual VOM and HAP emissions from the silk screen printing presses and the flexographic printing roll cleaner with supporting calculations (tons/month and tons/year);

- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
  
- 13a. Pursuant to 35 Ill. Adm. Code 218.182(d)(6), all persons subject to the requirements of 35 Ill. Adm. Code 218.182(b) or (c) shall notify the Illinois EPA of any violation of 35 Ill. Adm. Code 218.182(b) or (c) by sending a description of the violation and copies of records documenting such violations to the Illinois EPA within 30 days following the occurrence of the violation.
  
- b. Pursuant to 35 Ill. Adm. Code 218.187(e)(2), all sources subject to the requirements of 35 Ill. Adm. Code 218.187 shall:
  - i. By April 1, 2011, or upon initial start-up of the source, whichever is later, submit a certification to the Illinois EPA that includes:
    - A. A declaration that all subject cleaning operations are in compliance with the requirements of 35 Ill. Adm. Code 218.187;
    - B. Identification of each subject cleaning operation and each VOM-containing cleaning solution used as of the date of certification in such operation;
    - C. If complying with the emissions control system requirement, what type of emissions control system will be used;
    - D. Initial documentation that each subject cleaning operation will comply with the applicable limitation, including copies of manufacture's specifications, test results (if any), formulation data, and calculations;
    - E. Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;
    - F. A description of the practices and procedures that the source will follow to ensure compliance with the limitations in 35 Ill. Adm. Code 218.187(d); and
    - G. A description of each cleaning operation exempt pursuant to 35 Ill. Adm. Code 218.187(a)(2), if any, and a listing of the emission unit(s) on which the exempt cleaning operation is performed;
  - ii. At least 30 calendar days before changing the method of compliance between 35 Ill. Adm. Code 218.187(b)(1), (b)(2), and 35 Ill. Adm. Code 218.187(b)(3), notify the Illinois EPA in writing of such

change. Such notification shall include a demonstration of compliance with the newly applicable subsection;

- c. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.
- 14a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
- b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

If you have any questions on this, please call David Hulskotter at 217/782-2113.

Edwin C. Bakowski, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

Date Signed: \_\_\_\_\_

ECB:DWH:psj

cc: Illinois EPA, FOS Region 1