Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT NO. V-05-007
AMERICAN FUJI SEAL, INC.
1051 BLOOMFIELD ROAD, BARDSTOWN, KY. 40004-9746
SEPTEMBER 23, 2005
MARK LABHART, REVIEWER
SOURCE I.D. # 21-179-00031
AGENCY INTEREST # 3270
ACTIVITY I.D. # APE20040001

SOURCE DESCRIPTION:

American Fuji Seal is a manufacturer of labels for the food, beverage and household products industry. Printing is one of the most prevalent activities at American Fuji, and it is the primary source of emissions. The source is constructing a ten-station, rotogravure printing press to print on plastic film. Solvent-based inks will be used. A recuperative catalytic oxidizer will control emissions from the press. This will be the second controlled press at the facility. The source has numerous other presses that use water-based, ultra violet cured, or electron beam cured inks. These types of ink have inherently low emissions and are therefore exempted from control. American Fuji also plans to construct equipment for chrome plating of rotogravure printing cylinders. This equipment will be used both for new cylinders and to recondition used cylinders.

Plastic substrates used for the labels are made at this facility with a variety of plastic extrusion equipment. The extrusion process has a small amount of VOC and HAP emissions, along with emissions of particulate matter (mainly from handling the raw material).

This is the initial issuance of the source's plantwide Title V permit. The source has requested Synthetic Minor limitations on VOC emissions and additional limitations on HAP emissions. VOC emissions will be limited to 225 TPY to avoid PSD regulation. HAP emissions will be limited to 9 TPY single HAP and 22.5 TPY combined HAP. With the permit limitations on HAP emissions, American Fuji Seal will not be subject to the emission limitations of the Printing and Publishing MACT, (40 CFR 63, Subpart KK). Construction of the chrome plating facilities is subject to regulation under the MACT, 40 CFR 63, Subpart N.

COMMENTS:

- **401 KAR 59:185**, New solvent metal cleaning equipment, **<u>is not applicable</u>** to the parts washers (EP 4A, 4B, and 44) as they are considered a part of a printing line. The Division determined on September 16, 1985, that the parts washer EP4B was used exclusively for ink removal and press cleanup, therefore emissions from this operation were considered a part of the printing process. The same argument applies to the Hand Wash station EP4A and the Parts Washer EP44. Emissions from these facilities will be monitored and reported under the applicable regulation 401 KAR 59:212.

- **401 KAR 61:122**, Existing graphic arts facilities using rotogravure and flexography, **<u>is not applicable</u>** to the (6) Existing Kidder Stacy Flexographic Presses (EP 8), as these facilities are located in a county designated attainment for ozone.

- **401 KAR 59:212,** New graphic arts facilities using rotogravure and flexography, applies to each affected facility that is part of a major source in a county designated attainment on which construction commenced on or after February 4, 1981. Many of the presses at this facility are subject to this regulation, however, extensive use of water-based, and ultra violet / electron beam cured inks has exempted many of the presses from the emission limitations listed in Section 3 of this regulation.

- **401 KAR 50:012,** General Application of Administrative Regulations and Standards is applicable to all major sources. Specifically Section 1(2) requires major sources to apply control procedures that are reasonable, available, and practical in the absence of any other regulatory standard. American Fuji has numerous offset presses that are not subject to any regulation under Title 401. These offset presses use a combination of water-based and UV cured inks. Since the inks used in the offset presses meet the exemptions for flexographic and rotogravure printing presses in 401 KAR 59:212, Section 6; the Division has determined that reasonable, available, and practical control procedures are being applied, as long as the source continues to use the water-based and UV cured inks in the offset presses.

- **40 CFR Part 63, Subpart KK**—National Emission Standards for the Printing and Publishing Industry is applicable to the source. However permit limitations make this facility an area source with regard to HAP emissions, subject only to the provisions of § 63.829(d) and § 63.830(b)(1) of this subpart.

  For compliance with Subpart KK, an area source is only required to do the following;

  1. § 63.829(d).
     Maintain records of all required measurements and calculations needed to demonstrate area source status, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

     This requirement will be satisfied by recordkeeping and reporting to show compliance with the Federally Enforceable permit limitations.

  2. § 63.830(b)(1)(iii).
     For the purpose of this subpart, a Title V or part 70 permit application may be used in lieu of the initial notification required under § 63.9(b).

     This requirement has been satisfied by submittal of the Title V permit application.

- **40 CFR 63 Subpart N,** National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks, is applicable to the new rotogravure cylinder plating operation.

- **401 KAR 63:020**, Potentially hazardous matter or toxic substances, **<u>is not applicable</u>** to the plastic extrusion process or printing facilities as toxic emissions will be regulated by the

sourcewide HAP emission limitations permitted under 401 KAR 52:020. Screening was done at the 9 TPY limit and estimated ambient concentrations were below the EPA's prioritized dose-response values for chronic exposures.

- The source has a number of corona treaters at this facility.

  In corona treatment the surface wettability of the film is altered by generating a high voltage field, which accelerates and ionizes the gas, producing a gas plasma. The film to be treated is passed through this plasma. Free electrons, ions, and radicals in the plasma gas impact the film and increase the bonding capabilities of the treated film.

  Source, http://www.aqmd.gov/bact/352816Action%20Purchasing.dot

  Ozone is emitted from the corona treaters at a maximum potential of approximately 22.5 TPY for all affected facilities. There are no specific regulations for ozone emissions.

- Emission points 35 and 37, (presses 17 and 19) each have rotogravure stations that were originally permitted to use solvent based inks. These rotogravure stations are no longer in use and the web does not pass through these stations. At present, the source has no plans to reconnect these print stations. By accepting the limitations of regulation 401 KAR 59:212, Section 6, Exemption 1 (water-based inks) for these presses, the source has agreed not to use the solvent based inks in these rotogravure stations should they be reconnected at some point in the future. Should these print stations be put back in service, the source will need to use water-based inks, seek another exemption under Section 6, or consider using add on controls.

- Two recuperative catalytic oxidizers (RCO) will be used to control pollutants emission from rotogravure printing units, EP43 and EP 47. Control efficiency will be determined through stack testing.

- The VOC emission capture efficiency for the controlled facilities is assumed to be 100% based on the assumption that the rotogravure printing units are completely contained within a building enclosure. The source is required to demonstrate VOC emission capture efficiency using EPA testing method 204.

- Emission factors for the Polyethylene Extruders were taken from Article "Development of Emission Factors for Polyethylene Processing", Journal of Air & Waste Management Association, Volume 46 June 1996.

- Emission factors for the Polystyrene Extruders were provided by ATOFINA Petrochemicals, Inc. in a document titled "Summary of Results: Sampling and Analysis of Fumes Evolved during Thermal Processing of Polystyrene Resins", dated May 3, 2001.

- There are two points of particulate emissions associated with the extrusion equipment. Transfer of the raw material to the extruder is one source of particulates, and particulate matter is generated as a result of the extrusion process. For the raw material handling a control efficiency of 97% is assumed. The cyclones feeding the extruders are used mainly for separating the raw material from the pneumatic airflow and hence no control efficiency is assumed for the cyclones. The exhaust air from the cyclones passes thorough dry filters with an assumed efficiency of 90%. Since the air exhausts inside of the building, an additional 70% control is assumed for the building enclosure. The particulate emitted from the extrusion process are uncontrolled, except

for the fact that they are emitted inside the building. Again, a 70% control efficiency is assumed for the building enclosure for the particulate emitted from the extrusion process.

- The source has some pelletizing extruders originally permitted in 1986 (O-86-101). These pelletizers are used to remove volatiles from foam scrape. Primary emissions from this process are the residual blowing agent. Since the time when the equipment was initially permitted, the source has switched to using nitrogen as the blowing agent hence any emissions of residual blowing agent are not regulated at this time. Also, emissions of any percentage of VOC or HAP contained in the raw material, will be accounted for by material balance during the first extrusion process. Thus, emissions from this process are assumed to be insignificant.

- Emission factors for the natural gas fired curing ovens and heating equipment come from AP-42.

- Emission estimates from facilities associated with the printing operations are based on material balance.

EMISSION AND OPERATING CAPS DESCRIPTION:
American Fuji Seal voluntarily requested limits of less than 9.0 tpy for any individual HAP emission and less than 22.5 tpy for combined HAPs emission. American Fuji Seal also voluntarily requested Synthetic Minor permit limitations for VOC emissions. VOC emissions will be limited to less than 225 TPY.

OPERATIONAL FLEXIBILITY:
American Fuji Seal Inc. is not restricted as to hours of operation or quantity of product produced while remaining within the caps above.

PERIODIC MONITORING:
The VOC capture efficiency of the capture system at the source will be initially determined through testing. Continuous monitoring and record keeping are used to demonstrate capture efficiency in the source's unit enclosures. Interlocks and periodic interlock checks are used for capture systems.
Pressure differential across the building shall be monitored continuously when the printing press is operating.
The inlet temperature of the catalyst bed during printing operation shall be monitored continuously.

CREDIBLE EVIDENCE:
This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.