

STATE OF MISSOURI



PERMIT BOOK

DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **072013-013** Project Number: 2013-06-014
Installation Number: 021-0064

Parent Company: Silgan Containers Manufacturing Corporation

Parent Company Address: 21800 Oxnard Street, Suite 600, Woodland Hills, CA 91367

Installation Name: Silgan Containers Manufacturing Corporation

Installation Address: 2115 Southwest Lower Lake Road, St. Joseph, MO 64504

Location Information: Buchanan County, S25, R36W, T57N

Application for Authority to Construct was made for:
Replacement of D&I line Inside Spray Machines and increased D&I line production. This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUL 22 2013

EFFECTIVE DATE

A handwritten signature in black ink that reads "Kenya L. Moore".

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060(12)(A)10. "Conditions required by permitting authority."

Silgan Containers Manufacturing Corporation
Buchanan County, S25, R36W, T57N

1. Superseding Condition
 - A. The conditions of this permit supersede the following special conditions found in construction permits previously issued by the Air Pollution Control Program:
 - 1) Construction Permit 062011-010 Special Condition 2
 - 2) Construction Permit 122008-001 Special Condition 1
 - 3) Construction Permit 092002-023 Special Condition 1

2. HAP Emission Limitations
 - A. The permittee shall emit less than 10.0 tons individually and 25.0 tons combined of HAP in any consecutive 12-month period from the entire installation as listed in Table 1.

Table 1: HAP Emission Units - Plantwide

Emission Unit	Description
ES-2010	Washcoat
ES-2020	Smith RTO
ES-2021	Inside Bake Oven
ES-2023	Outside Bake Oven
ES-2024	Inside Spray Machines
ES-2100	D&I Videojet Printers
ES-3100	Equipment Cleanup for Press Lines
ES-3200	DRD Videojet Printers
ES-3300	Thermal Oxidizer
ES-3310	Sheet Coater #1
ES-3320	Sheet Coater #2
ES-3330	Cleanup of Sheet Coating Lines
ES-3340	Sheet Coater #3
ES-3350	Anguil RTO

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. Attachment A or an equivalent form, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A.
3. VOC Emission Limitations
- A. The permittee shall emit less than 250.0 tons of VOC in any consecutive 12-month period from the entire installation as listed in Table 2.

Table 2: VOC Emission Units - Plantwide

Emission Unit	Description
ES-2000	D&I Cleanup
ES-2010	Washcoat
ES-2020	Smith RTO
ES-2021	Inside Bake Oven
ES-2023	Outside Bake Oven
ES-2024	Inside Spray Machines
ES-2100	D&I Videojet Printers
ES-2200	D&I Ink Dot Printer
ES-3040	End Seal Compound Applicator – Steel Line #2
ES-3100	Equipment Cleanup for Press Lines
ES-3110	Mist Applicators (Plantwide)
ES-3200	DRD Videojet Printers
ES-3300	Thermal Oxidizer
ES-3310	Sheet Coater #1
ES-3320	Sheet Coater #2
ES-3330	Cleanup of Sheet Coating Lines
ES-3340	Sheet Coater #3
ES-3350	Anguil RTO

- B. Attachment B or an equivalent form approved by the Air Pollution Control Program, such as electronic forms, shall be used to demonstrate compliance with Special Condition 3.A.
4. Control Device Requirements – CD-2A Smith Regenerative Thermal Oxidizer (RTO)
- A. The permittee shall control emissions from ES-2010 Washcoat and ES-2024 Inside Spray Machines using CD-2A Smith RTO as specified in the permit application.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. CD-2A Smith RTO shall be in use at all times ES-2010 Washcoat and ES-2024 Inside Spray Machines are in operation. CD-2A Smith RTO shall be operated and maintained in accordance with the manufacturer's specifications to ensure a minimum VOC destruction efficiency of 97.8 weight percent. The VOC destruction efficiency shall be verified through performance testing as detailed in Special Condition 11.
 - C. CD-2A Smith RTO shall maintain a minimum operating temperature equal to or greater than the average operating temperature recorded during the most recent performance test. The operating temperature shall be continuously monitored and recorded.
 - D. The permittee shall maintain a copy of CD-2A Smith RTO's manufacturer's operation and maintenance manual on site.
 - E. The permittee shall maintain an operating and maintenance log for CD-2A Smith RTO which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Control Device Requirement – Fabric Filter
- A. The permittee shall control emissions from ES-2024 Inside Spray Machines using a fabric filter as specified in the permit application.
 - B. The fabric filters shall be operated and maintained in accordance with the manufacturer's specifications. The fabric filter shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. The permittee shall monitor and record the operating pressure drop across the fabric filter at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- E. The permittee shall maintain a copy of the fabric filter's manufacturer performance warranty on site.
 - F. The permittee shall maintain an operating and maintenance log for the fabric filters which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
6. Capture Device Requirement – Permanent Total Enclosure (PTE)
- A. The permittee shall operate ES-2024 Inside Spray Machines within a PTE such that 100 percent of emissions from ES-2024 Inside Spray Machines are captured and routed to CD-2A Smith RTO.
 - B. The permittee shall verify within 30 days of startup that the PTE achieves 100 percent capture efficiency according to the procedures of EPA Test Method 204 *Criteria for and Verification of a Permanent or Temporary Total Enclosure*, set forth in 40 CFR Part 51, Appendix M.
 - C. The permittee shall maintain an operating and maintenance log for the PTE which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
7. Capture Device Requirement – Partial Enclosure
- A. The permittee shall operate ES-2010 Washcoat within a partial enclosure such that a minimum of 46.3 percent of emissions from ES-2010 Washcoat are captured and routed to CD-2A Smith RTO.
 - B. The permittee shall maintain an operating and maintenance log for the partial enclosure which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

8. **Operational Requirement – Coatings/Inks/Solvents/Cleaning Solutions**
The permittee shall keep all coatings, inks, solvents, and cleaning solutions in sealed containers whenever the materials are not in use. The permittee shall provide and maintain suitable, easily read, permanent markings on all coatings, inks, solvents, and cleaning solution containers used with this equipment.
9. **Use of Alternative Coatings**
 - A. When considering using an alternative coating, ink, solvent, or cleaning solution in ES-2000 D&I Cleanup, ES-2010 Washcoat, ES-2024 Inside Spray Machines, ES-2100 D&I Videojet Printers, or ES-2200 D&I Ink Dot Printer that is different than the materials listed in the Application for Authority to construct, the permittee shall calculate the potential emissions of all individual HAP in the alternative material.
 - B. The permittee shall seek approval from the Air Pollution Control Program before use of the alternative material if the potential individual HAP emissions for the alternative material are equal to or greater than the SMAL for any chemical listed in the table *Air Pollution Control Program Table of Hazardous Air Pollutants and Screening Model Action Levels*, Revision 10, (May 2012) at: <http://www.dnr.mo.gov/env/apcp/docs/cp-hapsmaltbl6.pdf>
 - C. Attachment C or an equivalent form approved by the Air Pollution Control Program, such as electronic forms, shall be used to demonstrate compliance with Special Condition 9.A.
10. **Record Keeping and Reporting Requirements**
 - A. The permittee shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.
 - B. The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

11. Performance Testing

- A. The permittee shall conduct performance testing using US EPA Test Method 25A at least once every five years to confirm the destruction efficiency of CD-2A Smith RTO and set the minimum operating temperature. As testing was conducted in August of 2009, the next round of testing is not required until August of 2014.
- B. A completed Proposed Test Plan Form (enclosed) shall be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
- C. Two copies of a written report of the performance test results shall be submitted to the Director within 30 days of completion of any required testing. The report shall include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
- D. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2013-06-014
Installation ID Number: 021-0064
Permit Number:

Silgan Containers Manufacturing Corporation
2115 Southwest Lower Lake Road
St. Joseph, MO 64504

Complete: June 18, 2013

Parent Company:
Silgan Containers Manufacturing Corporation
21800 Oxnard Street, Suite 600
Woodland Hills, CA 91367

Buchanan County, S25, R36W, T57N

REVIEW SUMMARY

- The permittee has applied for authority to replace their existing D&I Line Inside Spray Machines and increase D&I Line production.
- HAP emissions are expected from the proposed equipment. HAP will be emitted from the surface coating operations ES-2024 D&I Inside Spray Machines and ES-2010 D&I Washcoat. Surface coating HAP consist of Ethylbenzene (100-41-4), Formaldehyde (50-00-0), Glycol Ethers (20-10-0), MIBK (108-10-1), and Xylene (1330-20-7). The printing operation ES-2100 D&I Videojet emits Methanol (67-56-1). Natural gas combustion by ES-2021 Inside Bake Oven, ES-2023 Outside Bake Oven, and ES-2020 Smith RTO also emit HAP, primarily Hexane (110-54-3).
- 40 CFR 60, Subpart WW - *Standards of Performance for the Beverage Can Surface Coating Industry* does not apply to the installation. This regulation applies to two-piece steel or aluminum beverage containers. The installation only produces food containers.
- 40 CFR Part 63, Subpart KKKK – *National Emission Standards for HAP: Surface Coating of Metal Cans* is not applicable to the installation. This regulation only applies to major HAP sources. The installation is a synthetic minor HAP source per Special Condition 2.A.
- 40 CFR Part 63, Subpart HHHHHH – *National Emission Standards for HAP: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources* is not applicable to the installation. This regulation applies to the spray application of coatings containing compounds of chromium, lead, manganese, nickel, or cadmium. None of the MSDS provided by the installation list any metal compounds.

- CD-2A Smith RTO is being used to control VOC and HAP emissions from ES-2010 Washcoat and ES-2024 Inside Spray Machines (see Special Condition 4). Existing emission units ES-3310 Sheet Coater #1 and ES-3320 Sheet Coater #2 are required to operate a PTE and CD-1 Recuperative Thermal Oxidizer by Construction Permit 092002-003. Existing emission unit ES-3340 Sheet Coater #3 is required to operate a PTE and CD-3 Anguil RTO by Construction Permit 122008-001. CD-1 Recuperative Thermal Oxidizer, CD-2A Smith RTO, and CD-3 Anguil RTO may be used in Attachments A and B to indicate compliance with the installation-wide HAP and VOC emission limitations. Stack testing conducted in August of 2009 indicated the destruction efficiencies of CD-1 to be 99.8%, CD-2A to be 97.8%, and CD-3 to be 98.6%.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of VOC exceed the de minimis level.
- This installation is located in Buchanan County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed for this review. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.
- Emissions testing is required for the equipment. CD-2A Smith RTO underwent stack testing in August of 2009. Stack testing results indicate CD-2A Smith RTO achieves 97.8 percent VOC destruction efficiency. The permittee is required to retest the destruction of efficiency of CD-2A Smith RTO every five years. The 97.8 percent destruction efficiency was used in project emission calculations; therefore, if subsequent testing indicates a lower VOC destruction efficiency, this permit needs to be reevaluated.
- The installation is required to amend their Part 70 Operating Permit Renewal Application, Project 2011-05-029, within one year of commencement of operations. The amendment shall include a plantwide potential to emit.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Silgan Containers Manufacturing Corporation owns and operates a food can manufacturing plant in St. Joseph, Missouri. The installation consists of five departments: a Draw and Iron (D&I) Can Manufacturing Line, Steel and Aluminum Draw/Redraw Can Lines, Steel End Manufacturing Lines, Sheet Coating and Lithography Lines, and a Coil Shearing Line.

The installation is an existing major source of VOC with potential emissions exceeding 250 tons per year. The installation currently operates under Part 70 Operating Permit OP2006-078. The installation submitted their Part 70 Operating Permit Renewal Application, Project 2011-05-029, in May of 2011. The installation is required to amend their Part 70 Operating Permit Renewal Application within one year of commencement of operations. The amendment shall include a plantwide potential to emit.

The following NSR permits have been issued to Silgan Containers Manufacturing Corporation by the Air Pollution Control Program:

Table 3: Permit History

Permit Number	Description
0885-007A	Construction of an aluminum can manufacturing line
1189-002	Modification of the two-piece D&I line
0890-007	Removal of six end press lines and installation of one new press line
0192-010	Installation of a conversion press for modification of the existing lid end line
0890-007A	Six end press lines were not removed. Re-permitted for a lower production level on the press line
082000-012	Revision of 1189-002
062000-015	New can manufacturing line
092002-023	Installation of a PTE for the two existing Sheet Coating and Lithography Lines, a recuperative thermal oxidizer, a side feeder for Sheet Coating Line #2, and conventional inks on Line #2
122003-009	Modification of 062000-015
062004-015	Installation of various de minimis projects
122008-001	Construction of a new sheet coating and lithography line with a new RTO
062011-010	Removal of HAP emission limitations from 092002-023

PROJECT DESCRIPTION

Silgan Containers Manufacturing Corporation has proposed changes to their D&I Line. No changes are being made to the other four departments at the installation. The installation has requested to remove ES-2022 - three existing Inside Spray Machines and replace with ES-2024 - eight new Inside Spray Machines. The existing machines with two heads and two nozzles on each machine bottlenecked the D&I Line to 1,680 cans per minute (140 cans per minute per nozzle). The new machines each have a single head and a single nozzle, but operate at a faster rate increasing D&I Line production to 2,400 cans per minute (300 cans per minute per nozzle). Increased D&I Line production results in increased emissions from ES-2000 D&I Cleanup, ES-2010 Washcoat, ES-2020 Smith RTO, ES-2021 Inside Bake Oven, ES-2023 Outside Bake Oven, ES-2100 D&I Videojet Printers, and ES-2200 D&I Ink Dot Printer, Table 4 contains an updated equipment list for the D&I Line.

Table 4: D&I Line Equipment List

Emission Unit	Description	Coating/Process SCC	MHDR	Units	Project Status
ES-2000	D&I Cleanup	Isopropanol	1	gal/hr	Modified
ES-2010	Washcoat	31Q26AB	10.159	gal/hr	Modified
		36Q09AA	11.231	gal/hr	Modified
		Akzo EXP15766	6.910	gal/hr	Modified
		ICI 652C673	7.340	gal/hr	Modified
		ICI EXP-85861	11.042	gal/hr	Modified
		PPG 5200804	8.217	gal/hr	Modified
		PPG 5200805	8.217	gal/hr	Modified
		SI 54.2	0.61	gal/hr	Modified
ES-2020	Smith RTO	10300603	5	MMBtu/hr	Modified
ES-2021	Inside Bake Oven	10300603	4.3	MMBtu/hr	Modified
ES-2023	Outside Bake Oven	10300603	7.2	MMBtu/hr	Modified
ES-2024	Inside Spray Machines	10Q25AB	34.623	gal/hr	New
		20Q56EA	39.078	gal/hr	New
		20Q56UA	37.153	gal/hr	New
		26Q88AB	36.485	gal/hr	New
		26Q88AD	36.504	gal/hr	New
		26Q88AE	33.010	gal/hr	New
		26Q88AG	29.765	gal/hr	New
		27Q59AA	40.819	gal/hr	New
		31Q23AA	29.649	gal/hr	New
		31Q55AA	32.642	gal/hr	New
		31Q55UA	42.557	gal/hr	New
		31Q78AB	43.151	gal/hr	New
		31Q83AA	27.686	gal/hr	New
		36Q38AA	39.991	gal/hr	New
		PPG 3923604	32.191	gal/hr	New
		PPG 4553301	31.766	gal/hr	New
		PPG 4553303	36.881	gal/hr	New
		PPG 4553304	35.815	gal/hr	New
PPG 4553601	29.761	gal/hr	New		
PPG 4553603	36.503	gal/hr	New		
PPG 4553605	41.615	gal/hr	New		
ES-2100	D&I Videojet Printers	168600-168605	0.024	gal/hr	Modified
ES-2200	D&I Ink Dot Printer		0.006	gal/hr	Modified

EMISSIONS/CONTROLS EVALUATION

The MHDR of the new Inside Spray Machines (ES-2024) was determined by taking the maximum D&I Line can production rate (2,400 cans per minute), the maximum desirable film density (mg solids per can), the solids content of the coating (weight percent), and the coating density (lb/gal). An airless spray gun on each line applies the coating to reach the desired film density. Table 5 contains the film density, coating density, solids, VOC, and HAP content for each pollutant's worst-case coating. The worst-case coating for each pollutant was used in the potential to emit.

Table 5: Inside Spray Machine Worst-Case Coating MSDS Information

Coating	Film Density (mg solids per can)	Density (lb/gal)	VOC Content (lb/gal)	% Solids	% HAP	% MIBK	% Glycol Ethers	% Xylene	% Formaldehyde	% Ethylbenzene
36Q38AA	390	8.60	1.38	36.0*	4.30*	3.0*	-	1.0*	0.10	0.2*
PPG 3923604	261	9.00	1.07	28.6	0.40	-	-	-	0.40*	-
26Q88AG	270	8.47	1.23	34.0	4.00	-	4.0*	-	-	-
27Q59AA	270	8.30	2.19*	25.3	0.04	-	-	-	0.04	-

*Worst-case coating for this pollutant.

Potential emissions were calculated using a mass balance approach. ES-2024 Inside Spray Machines are required to be enclosed by a PTE; therefore, 100 percent capture was used. CD-2A Smith RTO destroys 97.8 percent of VOC and HAP emissions (August 2009 stack testing result). Particulate emissions from surface coating were calculated using a particle size distribution submitted by the installation indicating 1.44 percent PM₃₀, 0.13 percent PM₁₀, and 0.01 percent PM_{2.5}. PM emissions were considered only for particulates less than 30 µm in diameter as particles larger than this size fallout within PTEs [see Texas Commission on Environmental Quality (TCEQ) document *Painting Basics and Emission Calculations for TCEQ Air Quality Permit Applications*, October 2006]. A solids transfer efficiency of 75 percent for airless spray on flat surfaces was obtained from APTI Course 482 Manual, 3rd Edition, Table 5-7.

The debottlenecked MHDR of ES-2010 Washcoat was determined by taking the maximum D&I Line can production rate (2,400 cans per minute), the maximum desirable film density (mg solids per can), the solids content of the coating (weight percent), and the coating density (lb/gal). Washcoat is applied to the outer surface of the cans using a waterfall effect to reach the desired film density. As coating is not spray applied, no particulate emissions are expected to occur from this process. The worst-case coating for each pollutant was used in the potential to emit. ICI 652C673 was determined to be the worst-case washcoat with a film density of 70 mg solids per can, a washcoat density of 8.75 lb/gal, solids content of 34.6 percent, VOC content of 1.44 lb/gal, and a Formaldehyde (50-00-0) content of 0.01 percent. Potential emissions were calculated using a mass balance approach. ES-2010 Washcoat is partially enclosed. Stack testing conducted in September of 2001 indicated that the partial enclosure achieved 46.3 percent capture. CD-2A Smith RTO destroys 97.8 percent of captured VOC and HAP emissions (August 2009 stack testing result).

Potential emissions from ES-2000 D&I Cleanup, ES-2100 D&I Videojet Printers, and ES-2200 D&I Ink Dot Printer were calculated using a mass balance approach with 100 percent of the VOC and HAP being emitted. ES-2000 D&I Cleanup uses isopropanol with a VOC content of 6.59 lb/gal. ES-2100 D&I Videojet Printers uses a 1:5 ratio of Videojet 168600 to Videojet 168605, the as-applied mixture contains 6.52 lb/gal VOC and 2.71 lb/gal Methanol (67-56-1). ES-2200 D&I Ink Dot Printer uses Easterday Ink containing 6.82 lb/gal VOC.

Potential emissions from natural gas combustion by ES-2020 Smith RTO, ES-2021 Inside Bake Oven, and ES-2023 Outside Bake Oven were calculated using emission factors obtained from EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 "Natural Gas Combustion" (July 1998).

Table 6 provides an emissions summary for this project. Existing potential emissions were taken from 062011-010. The installation has accepted a 250.0 tpy installation-wide VOC emission limitation to become a minor source for NSR. The permittee is required to submit a plantwide potential to emit with their Part 70 Operating Permit Renewal application amendment. Existing actual emissions were taken from the installation's 2012 EIQ. Potential emissions of the application represent the potential of the D&I Line, assuming continuous operation (8,760 hours per year).

Table 6: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2012 EIQ)	Project Potential Emissions	Installation Conditioned Potential Emissions
PM	25.0	Minor	N/A	2.49	N/A
PM ₁₀	15.0	Minor	0.52	0.71	N/A
PM _{2.5}	10.0	Minor	0.52	0.55	N/A
SO _x	40.0	Minor	0.04	0.04	N/A
NO _x	40.0	Minor	6.90	7.03	N/A
VOC	40.0	Major	22.68	50.99	<250.0
CO	100.0	Minor	5.80	5.91	N/A
GHG (CO ₂ e)	100,000	N/D	N/A	8,498.3	N/A
HAP	25.0	Synthetic Minor	1.62	1.86	<25.0
MIBK (108-10-1)	10.0 ¹	N/D	0.04	0.99	<10.0
Glycol Ethers (20-10-0)	5.0 ²	N/D	0.03	0.97	<10.0
Methanol (67-56-1)	10.0 ¹	N/D	0.92	0.28	<10.0
Xylene (1330-20-7)	10.0 ¹	N/D	0.44	0.33	<10.0
Formaldehyde (50-00-0)	2.0 ²	N/D	0.04	0.13	<10.0
Hexane (110-54-3)	10.0 ¹	N/D	-	0.13	<10.0
Ethylbenzene (100-41-4)	10.0 ¹	N/D	0.09	0.07	<10.0

N/A = Not Applicable; N/D = Not Determined

¹This value represents both the major source level for this individual HAP and its SMAL.

²This value represents the SMAL. The major source level for individual HAP is 10.0 tpy.

Potential project emissions of each individual HAP are below their respective SMAL; therefore, no HAP modeling was performed for this project.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of VOC exceed the de minimis level, but are below the major source level.

APPLICABLE REQUIREMENTS

Silgan Containers Manufacturing Corporation shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- 10 CSR 10-6.065 *Operating Permits*
- 10 CSR 10-6.110 *Submission of Emission Data, Emission Fees and Process Information*
- 10 CSR 10-6.165 *Restriction of Emission of Odors*
- 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-6.220 *Restriction of Emission of Visible Air Contaminants*

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*, I recommend this permit be granted with special conditions.

Alana L. Rugen, EIT
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 20, 2013, received June 4, 2013, designating Silgan Containers Manufacturing Corporation as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- TCEQ document, *Painting Basics and Emission Calculations for TCEQ Air Quality Permit Applications*, October 2006.
- August 2009 Stack Test Report prepared by Air/Compliance Consultants, Inc.

Attachment B – VOC Compliance Worksheet

Silgan Containers Manufacturing Corporation
 Buchanan County, S25, R36W, T57N
 Project Number: 2013-06-014
 Installation ID Number: 021-0064
 Permit Number: _____

Date: _____
 (month/year)

Emission Source	Material Used (Name, Type)	Amount Used (gal)	Density (lb/gal)	VOC Content (wt%)	Overall VOC Control Efficiency ¹ (%)	VOC Emissions ² (tons)
Natural Gas Combusted (MMscf)				VOC Emission Factor (lb/MMscf)		VOC Emissions³ (tons)
				5.5		
				Monthly VOC Emissions:		
				12-Month Rolling Total⁴:		

¹ES-2000 and ES-2010 have a capture efficiency of 46.3% and a destruction efficiency of 97.8% percent for an overall VOC control efficiency of 45.28%. ES-2024 has a capture efficiency of 100% and a destruction efficiency of 97.8% for an overall VOC control efficiency of 97.8%. ES-3310 and ES-3320 have a capture efficiency of 100% and a destruction efficiency of 99.8% for an overall VOC control efficiency of 99.8%. ES-3340 has a capture efficiency of 100% and a destruction efficiency of 98.6% for an overall VOC control efficiency of 98.6%. If subsequent performance tests indicate higher capture and/or destruction efficiencies the permittee may use the higher efficiency values provided the permittee maintains a copy of the performance test report to verify the source of the higher efficiency.

²Emissions = Amount Used (gal) x Density (lb/gal) x VOC Content (wt%) x 0.0005 (ton/lb).

³Emissions = Natural Gas Combusted (MMscf) x VOC Emission Factor (lb/MMscf) x 0.0005 (ton/lb).

⁴12-Month Rolling Total (tpy) = This month’s Monthly Emissions + the previous 11 month’s Monthly Emissions (tpy). **The permittee is in compliance if VOC emissions are less than 250.0 tpy.**

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Tom Peterson
Plant Manager
Silgan Containers Manufacturing Corporation
P.O. Box 4488
St. Joseph, MO 64504

RE: New Source Review Permit - Project Number: 2013-06-014

Dear Mr. Peterson:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application, and revision of your operating permit renewal application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Alana Rugen, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:arl

Enclosures

c: Kansas City Regional Office
PAMS File: 2013-06-014

Permit Number: