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Judson H. Turner, Director

NARRATIVE

TO: David Matos

FROM: Casie Pritchard

DATE: October 14, 2015

Facility Name:	**Alcon Laboratories, Inc.**
AIRS No.:	121-00774
Location:	Johns Creek, Georgia (Fulton County)
Application #:	23466
Date of Application:	August 10, 2015

Background Information

Alcon Laboratories, Inc. ("Alcon") operates a contact lens manufacturing facility located at 11460 Johns Creek Parkway in Johns Creek (Fulton County). The facility encompasses four main buildings: Johns Creek Manufacturing (JCM), Johns Creek Administration (JCA), Research and Development (BTI), and the Johns Creek Distribution Building (JCD). Alcon is currently a synthetic minor facility under both Non-Attainment New Source Review (NSR) and Title V for volatile organic compounds (VOC) and nitrogen oxides (NO_X) operating under Air Quality Permit No. 3851-121-0774-S-03-0, issued September 27, 2012, with one amendment, Amendment No. 3851-121-0774-S-03-1, issued April 21, 2014.

At Alcon, the manufacturing of contact lenses is achieved through three main production processes: formulation production, contact lens production, and cleaning/purification processes. The facility also operates a secondary packaging line, a research and development (R&D) line, and several combustion units.

The contact lens manufacturing process begins with the generation of the formulation needed to create the lens. Various formulations are produced at the facility to support the different contact lens production lines. Raw materials are poured into enclosed mixing containers and processed using specifications specific to each formulation. After processing, formulations are then packaged and stored on-site until needed for lens production.

The contact lenses made at the facility are manufactured via the following processes:

- Daily Disposable Lenses (LS1): Daily disposable lenses (Dailies) are manufactured from a formulated polymer on the LS1 production lines.
- Extended Wear Lenses: Lines to produce extended wear lenses have been removed.
- Night and Day Lenses: The facility currently manufactures night and day lenses (Focus Night and Day). Another type of night and day lens (O_2 Optics) was previously manufactured, but those production lines have been removed.
- Dailies Total One Lenses (LS3): Dailies Total One (DT1) lenses are manufactured on the LS3 production lines. The lenses are created in molds using a formulation. Each line dips contact lenses into a series of bath type tanks. For each line, there are bath tanks holding water, a 1-propanol solution, a s solution of 1-propanol with small amounts of polyacrylic acid and formic acid, and a methyl ethyl ketone (MEK) solution. During the operation of the bath tanks, evaporative losses of MEK, 1-propanol, polyacrylic acid and formic acid are expected. Each production line is enclosed, and emissions of the solvent-laden air above the baths are directed to a regenerative thermal oxidizer (RTO). The RTO combusts natural gas and has a burner capacity of 2 MMBtu/hr. The RTO has a 100% capture efficiency and a VOC destruction efficiency of 99%.

The facility operates the main tank farm to supply solvents to the LS3 production lines. Alcon uses the Methyl Ethyl Ketone (MEK) distillation system to remove MEK from the MEK wastewater tank so that the effluent from the site will meet the local Publicly Owned Treatment Works (POTW) standards.

Regular cleaning and purification of the contact lens production lines is required. Cleaning of the lines is achieved through a purging process whereby the bottle of formulation is replaced by cleaning solutions that run through the lines to clear out any built up sludge. Runoff from the cleaning/purification process is collected in waste containers for disposal. Cleaning materials are solvent or water-based, depending on the lens manufacturing line. Due to the removal of extended wear lenses and O_2 Optics lenses production lines, the facility only operates one cleaning and purification process and uses isopropyl alcohol (IPA) to clean some lines.

Alcon packages contact lenses in secondary packaging for distribution in commerce. When the secondary packaging is laser etched, a small amount of dust is generated. Alcon currently has nine dust collectors for the control of dust from secondary packaging.

The R&D equipment is used in production of new contact lenses for R&D purposes. The produced lenses are not being offered for sale and will be used solely for R&D purposes. Some lenses produced are being used in clinical trials.

Alcon operates nine small boilers and four emergency generators. The two natural gas-fired 10.46 MMBtu/hr boilers in the BTI building (BTI1 and BTI2) were installed in 1991, and their combined annual fuel usage is limited to 70 million standard cubic feet (MMscf) to maintain NO_X emissions below the Non-Attainment NSR significance level of 25 tons per year. The seven natural gas-fired 3.00 MMBtu/hr boilers located at JCM are exempt from permitting. The two diesel-fired 750 kW emergency generators were installed in 1991 and 1994, and the two diesel-fired 500 kW emergency generators were installed in 2003 and 2012.

Off-gassing of VOC emissions formerly occurred in areas of the facility where certain finished contact lens products were stored prior to being shipped. These materials were shipped to secondary facilities where the lens production process is finalized. Alcon no longer stores unfinished lenses or product that off-gasses.

Purpose of Application

Application No. 23446, dated August 10, 2015, was received by the Division on August 11, 2015.

The purpose of this application is following:

- The installation of additional new Dailies Total One production lines (LS3). The new LS3 lines will be operated in the same way as the existing LS3 lines. Each line will dip contact lenses into a series of new bath type tanks using the same process as the existing LS3 lines. Each production line will be enclosed, and emissions of the solvent-laden air above the baths will be directed to a new natural gas-fired RTO, which will have a burner capacity of 5 MMBtu/hr. The new RTO will have a capture efficiency of 100% and a VOC destruction efficiency of 99%. The new RTO will have twice the capacity of the current RTO and will be able to control emissions from both the existing and new lines. The purpose of installing a larger RTO is to allow for process redundancy. Should downtime be required of the existing RTO, Alcon could route the emissions from the existing LS3 lines to the new RTO along with the emissions from the new LS3 lines.

- The installation of a new distillation system to remove 1-propanol from process wastewater so that the effluent from the site will meet the local POTW standards. The system will be electrically heated and will use a small chiller and series of trays packed in a column to distill 1-propanol.

- The modification of waste and recovery tanks TK07, TK08, TK09, and TK10 in the Main Tank Farm to receive material from the new West Tank Farm. There will be no increase in capacity of these tanks. The main tank farm will be used to supply fresh solvent to both the existing and new LS3 production lines. Though there will be no increases in the capacities of any main tank farm tanks, all will experience an increase in annual throughput as a result of the new production lines.

- The installation of the new West Tank Farm to collect waste solvent from all LS3 production lines. The west tank farm will consist of several waste bump tanks that will be used to collect solvent after it flows through the LS3 solvent baths and the liquid from the LS water baths that may be contaminated with solvent. The 1-propanol distillation feed tank will be used to store returned solvent from the process prior to the 1-propanol distillation system. The liquid collected in the west tank farm will be pumped back to the main tank farm. No loading and unloading activities of volatile organic liquids will occur at the west tank farm.

- The installation of a new natural gas-fired, 3 MMBtu/hr boiler (JCM8) to provide hot water for the expanded process.

- The installation of additional new Dailies production lines (LS1), and

- The reduction in night and day production lines.

Upon completion of the proposed project, Alcon will become a major source with respect to Non-Attainment NSR and Title V for VOC emissions. A Public Advisory was issued on September 2, 2015, and expired on October 2, 2015. No comments were received.

Updated Equipment List

The following Equipment List has been updated to reflect the equipment as listed in the application. Because much of the equipment is not individually subject to specific regulations, many of the individual pieces have been grouped into equipment groups based on process areas. The Equipment List also details the applicable standards, permit conditions, and control devices for each piece or group of equipment.

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
BTI1	10.46 MMBtu/hr natural gas-fired boiler	40 CFR 60 Subpart Dc 391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.3, 2.4, 2.5, 2.11, 4.6, 7.7, 7.9, 7.10, 7.11, 7.12, 7.17, 7.18, 7.19, 7.20	---	---
BTI2	10.46 MMBtu/hr natural gas-fired boiler	40 CFR 60 Subpart Dc 391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.3, 2.4, 2.5, 2.11, 4.6, 7.7, 7.9, 7.10, 7.11, 7.12, 7.17, 7.18, 7.19, 7.20	---	---
JCM1	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM2	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM3	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM4	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM5	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM6	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM7	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.11, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
JCM8	3.00 MMBtu/hr natural gas-fired boiler	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.2, 2.5, 2.11, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	**Description**	**Applicable Requirements/Standards**	**Corresponding Permit Conditions**	**ID No.**	**Description**
BGEN	750 kW diesel-fired emergency generator	40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.6, 2.7, 2.10, 2.12, 2.13, 2.14, 4.6, 5.3, 7.7, 7.16, 7.17, 7.18, 7.19, 7.20	---	---
DGEN2	750 kW diesel-fired emergency generator	40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.6, 2.7, 2.10, 2.12, 2.13, 2.14, 4.6, 5.3, 7.7, 7.16, 7.17, 7.18, 7.19, 7.20	---	---
GEN3	500 kW diesel-fired emergency generator	40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.6, 2.7, 2.10, 2.12, 2.13, 2.14, 4.6, 5.3, 7.7, 7.16, 7.17, 7.18, 7.19, 7.20	---	---
GEN4	500 kW diesel-fired emergency generator	40 CFR 63 Subpart ZZZZ 40 CFR 60 Subpart IIII 391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g) 391-3-1-.02(2)(tt)	2.1, 2.6, 2.8, 2.9, 2.10, 2.12, 2.13, 2.14, 4.6, 5.3, 7.7, 7.16, 7.17, 7.18, 7.19, 7.20	---	---
RD01	Research and Development Equipment	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.1, 2.10, 2.12, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
LS01	LS1 (Dailies) Production Line	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.1, 2.10, 2.12, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
LS01A	New LS1 (Dailies) Production Line	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.2, 2.10, 2.12, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
LS03	LS3 (Dailies Total One) Production Line	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.1, 2.5, 2.10, 2.12, 4.1, 4.2, 4.4, 4.5, 4.6, 5.2, 6.3, 6.4, 6.5, 7.7, 7.13, 7.14, 7.15, 7.17, 7.18, 7.19, 7.20	RTO1 or RTO2	Regenerative Thermal Oxidizer
LS03A	New LS3 (Dailies Total One) Production Line	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.2, 2.5, 2.10, 2.12, 4.3, 4.4, 4.5, 4.6, 5.2, 6.3, 6.5, 7.7, 7.13, 7.15, 7.17, 7.21, 7.22, 7.23	RTO2	Regenerative Thermal Oxidizer
TK01	16,709 gallon MEK Storage Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK02	7,991 gallon PAA-Dip Storage Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK03	16,709 gallon 1-Propanol Storage Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK04	4,546 gallon MEK Day Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK05	4,546 gallon PAA-Dip Day Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	**Description**	**Applicable Requirements/Standards**	**Corresponding Permit Conditions**	**ID No.**	**Description**
TK06	4,546 gallon 1-Propanol Day Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK07	19,247 gallon MEK Distillation Feed Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK08	7,991 gallon PAA-Dip Waste Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK09	16,709 gallon 1-Propanol Waste Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK10	19,247 gallon MEK Recovery Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK11	4,546 gallon 1-Propanol Day Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.1, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
TK21	4,546 gallon MEK Waste Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.2, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
TK22	4,546 gallon PAA-Dip Waste Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.2, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
TK23	4,546 gallon 1-Propanol Waste Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.2, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
TK25	4,546 gallon 10% MEK Waste Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.2, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
TK27	11,280 gallon 1-Propanol Distillation Feed Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt) 391-3-1-.02(2)(vv)	2.2, 2.10, 2.12, 2.15, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
MEK1	MEK Distillation System	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.1, 2.10, 2.12, 4.6, 7.7, 7.17, 7.18, 7.19, 7.20	---	---
PRO1	1-Propanol Distillation System	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.2, 2.10, 2.12, 4.6, 7.7, 7.17, 7.21, 7.22, 7.23	---	---
SP01	Secondary Packaging	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	2.1, 2.10, 2.12, 4.5, 4.6, 4.7, 7.7, 7.17, 7.18, 7.19, 7.20	DC01 DC02 DC03 DC04 DC05 DC06 DC07 DC08 DC09 DC10	Dust Collectors

‡ Proposed in Application No. 23466

Emissions Summary

The facility is currently a synthetic minor source of emissions, which has taken federally enforceable limits to ensure the potential VOC and NO_X emissions are each below the applicable Title V and Non-Attainment NSR major source thresholds of 25 tons per year. After the proposed project, the facility-wide potential VOC emissions will increase above the major source thresholds for Title V and Non-Attainment NSR.

The proposed project will result in additional emissions from as well as increased potential emissions from existing equipment experiencing an increase in throughput as a result of the project. The potential VOC emissions from all existing equipment will remain less than 25 tons per year after completion of the proposed project.

The table below shows the potential facility-wide emissions before and after the proposed modification. The methodologies for calculating emissions are discussed below. Emissions calculations are detailed in Appendix D to Application No. 23466.

VOC and HAP Emissions

Emissions from manufacturing activities are primarily VOC that may also contain HAP. Emissions from formulation production are based on the amount of the specific formulation that is manufactured in a process. Contact lens production emissions are based on the amount of specific formulation used in a certain process line. The cleaning/purification process emissions stem from individual cleaning solvents or raw materials rather than manufactured formulations.

VOC and HAP emission factors have been developed for each formulation produced, each cleaning solvent, and each raw material that is purified. The emission factors were multiplied by production/process information to estimate potential VOC and HAP emissions. If a particular formulation or material contains any VOC or HAP, it was assumed that all material was 100% VOC and/or HAP. The methodology for determining the emission factors can be found in Section 3.3 of Application No. 23466.

There are two primary components to the R&D process. The first part of the process involves casting the lens in a nitrogen or solvent atmosphere. The conservative assumption is made that all of the 1-propanol will be emitted from the process. The second part of the process involves dipping the contact lenses into a series of bath tanks. The bath tank dipping process will involve evaporative loss of VOC including methyl ethyl ketone (MEK) and 1-propanol. Calculations for the bath tanks were performed using Equation 8.4-22 of the USEPA EIIP guidance document *Volume II Chapter 8: Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities*, which estimates VOC emissions from surface evaporation from open or partially covered tanks.

The emissions from the contact lens dipping process were calculated using a mass balance approach. The amount of solvent lost in the process is calculated as the amount of solvent flowing into the bath tanks minus the amount of solvent flowing out of the bath tanks. The existing regenerative thermal oxidizer (RTO) controls emissions from the existing LS3 lines and has a destruction efficiency of 99%. The additional proposed RTO will control the emissions from the proposed new LS3 lines. The new RTO will have a guaranteed destruction efficiency of 99%.

VOC emissions from each storage tank were calculated using the *USEPA TANKS 4.0.9d* program (TANKS). Methyl ethyl ketone (MEK), 1-propanol, and polyacrylic acid (PAA) are delivered to the facility by truck. The fitting for the tanker truck articulated loading/unloading arms are dripless, so there are no emissions when disconnecting the arms from the tanks. Prior to filling the tanks, Alcon will fill a five-gallon bucket with solvent and flush the PAA-Dip Waste Tank. Fugitive VOC emissions from the solvent flushing were calculated using *EIIP Volume II: Chapter 8, Equation 8.4-1*.

The fugitive emissions from the valves, pumps, connectors, and other connections associated with the transfer of solvents from the tank farm were calculated based on emission factors and control effectiveness from USEPA's *Protocol for Equipment Leak Fugitives (EPA-453/R-95-017)*.

Alcon assumes that a small amount of MEK and 1-propanol will be released during the operation of the MEK and 1-propanol distillation systems. Emissions from the distillation systems were calculated using USEPA AP-42 emission factors from *Section 4.7, Waste Solvent Reclamation* and USEPA's *Distillation Operations in Synthetic Organic Chemical Manufacturing – Background Information for Proposed Standards (EPA-450/3-83-005a)*.

VOC and HAP emissions from the JCM boilers (JCM1 through JCM8) and the BTI boilers (BTI1 and BTI2) were calculated using USEPA AP-42 factors from *Section 1.4, Natural Gas Combustion*. VOC and HAP emissions from the four emergency generators (BGEN, DGEN2, GEN3, and GEN4) were calculated using USEPA AP-42 factors from *Section 3.4, Large Stationary Diesel and All Stationary Dual-Fuel Engines*. VOC and HAP emissions from the combustion of natural gas in the in the RTOs were calculated using USEPA AP-42 factors from *Section 1.4, Natural Gas Combustion*.

Other Emissions
The PM and SO_2 emissions from the JCM boilers (JCM1 through JCM8) were calculated using USEPA AP-42 factors from *Section 1.4, Natural Gas Combustion*. The CO and NO_X emissions from the JCM boilers were calculated using emission factors from the boiler maintenance manual. The NO_X, CO, PM, and SO_2 emisisons from the BTI boilers (BTI1 and BTI2) were calculated using USEPA AP-42 factors from *Section 1.4, Natural Gas Combustion*. The CO_2e emissions from the combustion of natural gas were calculated using emission factors from 40 CFR Part 98 Tables C-1 and C-2. The BTI boilers are limited to 70 MMscf of natural gas consumption per year to limit the NO_X emissions below 25 tons per year.

The NO_X, CO, PM, and SO_2 emissions from the four emergency generators (BGEN, DGEN2, GEN3, and GEN4) were calculated using USEPA AP-42 factors from *Section 3.4, Large Stationary Diesel and All Stationary Dual-Fuel Engines*. The CO_2e emissions from the combustion of diesel fuel were calculated using emission factors from 40 CFR Part 98 Tables C-1 and C-2. The generators are each limited to 200 hours of operation per year pursuant to the definition of an emergency generator in Georgia Rule 391-3-1-.02(2)(mmm).

The PM and SO_2 emissions from the RTOs were calculated using USEPA AP-42 factors from *Section 1.4, Natural Gas Combustion*. The CO and NO_X emissions from the RTOs were calculated using emission rates provided by the RTO vendor. The CO_2e emissions from the combustion of natural gas were calculated using emission factors from 40 CFR Part 98 Tables C-1 and C-2. For each solvent, the CO_2e emissions from oxidation were calculated using the equation provided in Application No. 23466.

Several dust collectors are used to control particulate matter (PM) emissions from secondary packaging. The PM emissions from secondary packaging were calculated using the exit grain loading to the dust collectors.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions		
	Before Modification	After Modification	Emissions Change
PM	4.25	4.51	0.26
NO_X	17.86	23.71	5.85
SO_2	0.22	0.24	0.00206
CO	14.62	25.82	11.20
VOC	22.89	34.73	11.84
Max. Individual HAP			
Total HAP	0.61	0.68	0.00671
Total GHG (if applicable)	17,187	20,568	3,381

Regulatory Applicability

New Source Review Applicability

There are two distinct New Source Review (NSR) permitting programs that apply depending on whether a facility is located in an attainment area or non-attainment area for a particular pollutant. Non-Attainment NSR applies to new construction or modifications that result in emission increases of the particular pollutant for which the area is classified as non-attainment. The Prevention of Significant Deterioration (PSD) program applies to new construction or modifications that result in emission increases of those pollutants for which the area is classified as attainment or unclassifiable.

Alcon is located in Fulton County. Fulton County has been designated as attainment or unclassifiable for all criteria pollutants except ozone, for which it is designated as a marginal non-attainment area for the 2008 8-hour ozone standard, and $PM_{2.5}$. The precursor pollutants for ozone are NO_X and VOC; SO_2 is also precursor pollutant for $PM_{2.5}$. The major source thresholds for NO_X and VOC are 25 tons per year. The major source thresholds for $PM_{2.5}$ and SO_2 are 100 tons per year.

Currently, Alcon is a synthetic minor source for NO_X and VOC under Non-Attainment NSR and a minor source for all other pollutants under Non-Attainment NSR and PSD. Both NO_X and VOC are subject to federally enforceable emission limits of 25 tons per year to restrict potential emissions below the major source threshold of 25 tons per year. After the proposed project, Alcon's potential VOC emissions will increase above 25 tons per year, thereby making the facility a major source for VOC under Non-Attainment NSR. Under Non-Attainment NSR, a minor source is allowed to have a "one-time increase" in emissions of pollutants to above the Non-Attainment NSR major source threshold without the requirement to undergo Non-Attainment NSR permitting provided the emissions increases from the project alone are, in and of themselves, less than the Non-Attainment NSR major source thresholds. The VOC emissions increases associated with the proposed project will be less than 25 tons per year. Therefore, Non-Attainment NSR permitting will not be required for the proposed project. However, Alcon will be required to evaluate potential Non-Attainment NSR permitting applicability to VOC for all future projects. No existing Non-Attainment NSR avoidance limits will be removed as a result of the proposed project.

For ozone Non-Attainment NSR major source applicability, it is possible for a facility to be major for only one of the precursor pollutants (NO_X and VOC) but not both if that facility only has potential emissions for one of those pollutants exceeding the major source threshold. After the proposed project, Alcon will remain a synthetic minor source for NO_X emissions under Non-Attainment NSR. The facility will also remain a minor source for PM2.5 emissions under Non-Attainment NSR as the potential PM2.5, SO2, and NOX emissions will all remain less than the major source threshold of 100 tons per year.

Under PSD permitting, the major source threshold is 250 tons per year for all criteria pollutants unless the source category of the facility is listed in 40 CFR 52.21 as one of the 28 source categories that has a lower major source threshold of 100 tons per year. Ophthalmic goods manufacturing is not one of the listed 28 source categories. Alcon is currently a minor source of all pollutants for the purposes of PSD permitting as the potential emissions for all regulated criteria pollutants are less than 250 tons per year. For a minor source under the PSD program, PSD permitting for each pollutant is trigger for net emissions increases exceeding the PSD major source thresholds. The net emissions increase from the proposed project and the facility-wide potential emissions for each pollutant regulated under the PSD program will not exceed the major source threshold. Therefore, the facility will remain a minor source under the PSD program for all pollutants.

Title V Applicability
40 CFR Part 70 establishes the federal Title V operating permit program. Georgia has incorporated the provisions of the federal program in Georgia Rule 391-3-1-.03(10) *Title V Operating Permits*. The major source thresholds with respect to Title V for sources in Fulton County are 10 tons per year of any individual HAP, 25 tons per year of all HAP combined, 25 tons per year of VOC or NO_X, and 100 tons per year of all other criteria pollutants. Alcon is currently a synthetic minor source with regards to Title V due to federally enforceable conditions limiting the potential emissions of VOC and NO_X to less than 25 tons per year each. As part of the proposed project, the facility-wide VOC emissions will increase to above the major source threshold, making Alcon a major source under Title V. Alcon will submit its initial Title V application within twelve months of beginning operation as a Title V major source.

40 CFR 63 Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"
MACT Subpart ZZZZ applies to all stationary RICE at major and area sources of HAP emissions. BGEN and DGEN2 are emergency reciprocating internal combustion engines (RICE) with site ratings of 750 bhp that were constructed in 1991 and 1994, respectively, and GEN3 is an emergency RICE with a site rating of 500 bhp that was constructed in 2003. Therefore, these engines are considered existing emergency RICE under Subpart ZZZZ. Per 40 CFR 63.6603(a), existing emergency stationary RICE located at an area source of HAP emissions are required to meet the applicable management practice requirements in Table 2d of Subpart ZZZZ.

GEN4 is an emergency compression ignition RICE with a site rating of 500 bhp that was constructed in October 2012. Therefore, the engine is considered a new emergency compression RICE under Subpart ZZZZ. Because the engine is a new stationary RICE at an area source, the engine is required to meet the requirements of 40 CFR 60 Subpart IIII to comply with Subpart ZZZZ. No further requirements apply for GEN4 under Subpart ZZZZ.

40 CFR 60 Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"
NSPS Subpart Dc applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat input capacity of 100 MMBtu/hr or less but greater than or equal to 10 MMBtu/hr. Boilers BTI1 and BTI2, each constructed in 1991, have heat input capacities of 10.46 MMBtu/hr and fire only natural gas; therefore, these boilers are subject to Subpart Dc. The SO_2 emission standards do not apply to natural gas-fired sources. The particulate matter (PM) and opacity standards only apply to sources with heat input capacities greater than or equal to 30 MMBtu/hr, and, therefore, do not apply to BTI1 and BTI2. Except as provided in 40 CFR 60.48c(g)(2) or (g)(3), Alcon is required to record and maintain records of the amount of each fuel combusted during each operating day. Because BTI1 and BTI2 will fire only natural gas, Alcon may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month. Because boilers JCM1 through JCM8 each has a heat input capacity less than 10 MMBtu/hr, those boilers will not be subject to Subpart Dc.

40 CFR 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"
NSPS Subpart IIII applies to all stationary compression ignition (CI) internal combustion engines (ICE) constructed after the applicable date for the classification of engine in 40 CFR 60.4200(a). GEN4 is an emergency CI ICE with a site rating of 500 bhp that was constructed in October 2012, and is not a fire pump. The engine is subject to the nonmethane hydrocarbon plus nitrogen oxides (NMHC + NO_X), carbon monoxide (CO), and particulate matter (PM) limits under Subpart IIII. There is a maximum fuel sulfur content limit as well as either a minimum cetane index limit or maximum aromatic content limit for fuel fired in the engine. Non-emergency service cannot exceed 100 hours per year. A non-resettable hour meter is required for monitoring the hours of operation in emergency and non-emergency service, and monthly records of the hours of operation in emergency and non-emergency service must be maintained. Compliance with Subpart IIII is demonstrated by purchasing engines certified to the emission standards, operating the engine according to manufacturer's specifications, and changing only those emission-related settings permitted by the manufacturer. BGEN, DGEN2, and GEN3 were constructed prior to the applicable date and, therefore, are not subject to Subpart IIII.

Georgia Rule 391-3-1-.02(2)(b), "Visible Emissions"
Georgia Rule (b) applies to all direct sources of emissions at any facility. Although there are no emission thresholds that trigger applicability for Georgia Rule (b), this rule applies only to facilities or sources subject to some other emission limitation under Georgia Rule 391-3-1-.02(2). Georgia Rule (b) limits the opacity of visible emissions to less than 40%, unless otherwise specified, and applies to each piece of equipment separately. Georgia Rule (b) is applicable to the proposed and existing manufacturing lines, secondary packaging line, R&D line, and supporting PM-emitting equipment.

Georgia Rule 391-3-1-.02(2)(d), Fuel-burning Equipment"
Georgia Rule (d) applies to any facility using fuel-burning equipment such as boilers, turbines, etc. There is no emission threshold that triggers applicability for this rule, however, there are several equations used to establish emission limits according to equipment heat input ranges and construction dates. Boilers JCM1 through JCM8 have heat input capacities of 3.00 MMBtu/hr and were constructed in either 2012 or 2013. For boilers constructed after January 1, 1972, with a heat input capacity less than 10 million Btu per hour (MMBtu/hr), Georgia Rule (d) requires that the amount of particulate matter (PM) emitted not exceed 0.5 pounds per MMBtu and applies to each piece of equipment separately. Boilers BTI1 and BTI2 have heat input capacities of 10.46 MMBtu/hr and were constructed in 1991. For boilers constructed after January 1, 1972, with a heat input capacity equal to or greater than 10 MMBtu/hr and equal to or less than 250 MMBtu/hr, Georgia Rule (d) requires that the amount of PM emitted not exceed the allowable rate, in pounds per million Btu, calculated using the equation listed below and applies to each piece of equipment separately. Georgia Rule (d) also requires that any visible emissions emitted from fuel-burning equipment not equal or exceed 20% except for one six-minute period per hour of not more than 27%. Georgia Rule (d) is applicable to the Boiler (BL01).

$$P = 0.5\left(\frac{10}{R}\right)^{0.5}$$

Georgia Rule 391-3-1-.02(2)(e), "Particulate Emissions from Manufacturing Processes"
Georgia Rule (e) applies to manufacturing process equipment. There are no emission thresholds that trigger applicability for this Rule. For manufacturing process equipment that was constructed after July 2, 1968, Georgia Rule (e) limits the allowable particulate matter (PM) emissions to the allowable rate, in pounds per hour (lb/hr), based on the process input weight rate, in tph, and calculated using the equation listed below and applies to each piece of equipment separately. Georgia Rule (e) is applicable to the proposed and existing manufacturing lines, secondary packaging line, R&D line, and supporting PM-emitting equipment.

$E = 4.1P^{0.67}$ for a process input weight rate up to and including 30 tph

$E = 55P^{0.11} - 40$ for a process input weight rate up to and including 30 tph

Georgia Rule 391-3-1-.02(2)(g), "Sulfur Dioxide"
Georgia Rule (g) applies to fuel-burning sources. There is no emission threshold that triggers applicability for this Rule; however, emission standards are established in this Rule. Georgia Rule (g) requires that fuel-burning sources with heat input below 100 MMBtu/hr not burn fuel containing more than 2.5% sulfur, by weight. Georgia Rule (g) is applicable to boilers BTI, BT2, and JCM1 through JCM8, regenerative thermal oxidizers RTO1 and RTO2, and generators BGEN, DGEN2, GEN3, and GEN4. The facility will comply with this requirement by firing only natural gas in the boilers and RTOs and diesel fuel with a fuel sulfur content less than 2.5% in the generators.

Georgia Rule 391-3-1-.02(2)(tt), "VOC Emissions from Major Sources"
Georgia Rule (tt) applies to sources in the listed counties with potential VOC emissions greater than the applicable threshold and requires reasonably available control technology (RACT) in controlling VOC emissions. Alcon is located in Fulton County and, after the proposed project, will have potential VOC emissions greater than 25 tons per year. Therefore, Georgia Rule (tt) will be applicable to all VOC-emitting sources at Alcon except the storage tanks, which will be subject to Georgia Rule (vv), and the bulk mixing tanks, which will be subject to Georgia Rule (ccc).

A RACT determination consists of a technical and economic feasibility analysis for implementation of either passive or active methods for reducing emissions. Various options, including add-on control devices and process changes, are evaluated to determine if each is technically feasible, and if so, whether each is economically feasible. Economic feasibility is based on the annualized operating costs required to remove one ton of pollutant emissions. The technically and economically feasible option that results in the largest decrease in emissions is deemed RACT.

Based on a top-down approach, it has been determined that the VOC RACT for the LS3 production lines will be the use of the existing and proposed regenerative thermal oxidizers (RTOs) for VOC control. An RTO provides the highest level of VOC control of all existing technologies for add-on control devices, achieving a 99% reduction of organic compounds. To meet the requirements of RACT, a destruction efficiency of 90% will be required. All emissions from the LS3 production lines will be routed to an RTO; there will be no uncontrolled fugitive emissions from these sources.

RACT for the fugitive components has been determined to be annual leak detection monitoring of the components. If leaks are detected, corrective actions must be initiated as expeditiously as possible to minimize fugitive VOC emissions and for product recovery. As discussed below, RACT for all other VOC-emitting sources has been determined to be operation of all process sources in a manner consistent with good practices for minimizing air emissions.

The R&D line is utilized for different research trials and is operated intermittently, not continuously. The R&D equipment is located in the R&D (BTI) building which is physically separated by a creek and approximately a quarter mile from the JCM building where the LS3 production lines and RTOs are located. It would not be economically feasible for Alcon to install the ductwork necessary to route the R&D line emissions to the RTOs. If a new RTO were to be installed for the R&D line, based on potential emissions of approximately 7.41 tons per year, a total capital investment of $650,000, and interest rate of 7%, an equipment life of 20 years, and a 99% VOC control efficiency, the total annualized cost of the RTO would be approximately $8,363.72 per ton of VOC removed. The annualized costs associated with an RTO or similar add-on control device are too high to be considered economically feasible for RACT. Additionally, due to the intermittent usage of the R&D line equipment, use of an add-on control device for VOC control would present significant technical challenges. Therefore, RACT for the R&D line has been determined to be operation of all process sources in a manner consistent with good practices for minimizing air emissions.

The MEK distillation system is used to remove MEK from process wastewater, and the 1-propanol distillation system will be used to remove 1-propanol from the wastewater tanks after the completion of the proposed project. Alcon has conservatively estimated that approximately 2.45 tons per year of MEK and approximately 0.85 tons per year of 1-propanol could be released during the operation of the MEK and 1-propanol distillation systems. It is in Alcon's best business interest to operate the distillation systems as efficiently as possible to reclaim the maximum amounts of MEK and 1-propanol. The use of MEK and 1-propanol is essential to the LS3 process, and there are no identified alternatives available. Ending the use of MEK and 1-propanol in favor of different, non-VOC chemicals would require extensive R&D and would impact the quality of the contact lenses produced. As with the R&D line, the costs associated with routing the emissions from the distillation system vents to one of the RTOs would not be economically feasible for such small sources of emissions. Therefore, RACT for the MEK and 1-propanol distillation systems has been determined to be operation of all process sources in a manner consistent with good practices for minimizing air emissions.

Maximum emissions from isopropyl alcohol (IPA) cleaning have been estimated at 0.81 tons per year. Alcon selected IPA as its cleaning solvent based on extensive research showing that it provided the best results for cleaning the molds while leaving no residue behind or interacting with the product. Other non-VOC solvents, such as acetone, tend to leave residue behind after cleaning and would not be sufficient for Alcon's needs. Switching from IPA to another cleaning solvent would require extensive R&D in order to ensure no adverse impacts and would not be technically feasible for RACT. Therefore, RACT for IPA cleaning has been determined to be operation of all process sources in a manner consistent with good practices for minimizing air emissions.

Combustion of natural gas and diesel in the boilers and emergency generators, respectively, results in small amounts of VOC emissions (approximately 1 ton per year total). It has been determined that the use of add-on control technology does not result in cost effective control. The cost of installing and operating such a device far exceeds the benefit it offers in control due to the low concentration VOC stream generated from combustion of natural gas or diesel. To support this conclusion, the USEPA has previously determined in the development of NSPS Subpart IIII that add-on controls are economically infeasible for emergency internal combustion engines. Therefore, RACT for the boilers and emergency generators has been determined to be good design and combustion practices since a properly operated combustion unit can effectively minimize VOC formation by promoting complete combustion.

All other VOC emission sources at the facility subject to Georgia Rule (tt) (formulations production, contact lens production, and cleaning/purification processes) result in very low uncontrolled potential emissions of VOC, totaling less than 0.4 tons per year combined. Even if technically feasible, routing the emissions from these very low concentration VOC streams to an add-on control device would result in annualized costs that would be significantly higher than what would be deemed economically feasible for RACT. No alternative low VOC formulation or cleaning materials have been identified that could be used to produce the contact lenses that the facility manufactures. Therefore, RACT for these additional VOC emissions sources has been determined to be operation of all process sources in a manner consistent with good practices for minimizing air emissions.

Georgia Rule 391-3-1-.02(2)(vv), "Volatile Organic Liquid Handling and Storage"
Georgia Rule (vv) applies to volatile organic liquid (VOL) handling and storage sources at facilities subject to other VOC requirements under Georgia Rule 391-3-1-.02(2) located in the listed counties and requires that storage tanks greater than 4,000 gallons be equipped with submerged fill pipes. After the proposed project, Alcon will be subject to VOC Rules (tt) and (ccc) and will, therefore, be subject to Georgia Rule (vv). The existing VOL storage tanks, all of which have capacities greater than 4,000 gallons, will be subject to this Rule. All of the existing VOL storage tanks are currently equipped with submerged fill pipes. Alcon will utilize submerged fill pipes for all of the storage tanks being installed as part of the proposed project.

Georgia Rule 391-3-1-.02(2)(ccc), "VOC Emissions from Bulk Mixing Tanks"
Georgia Rule (ccc) applies to mixing tanks at facilities in the listed counties with potential VOC emissions greater than the applicable threshold. Alcon is located in Fulton County and, after the proposed project, will have potential VOC emissions greater than 25 tons per year. Therefore, Georgia Rule (ccc) will be applicable to all mixing tanks, which are defined as any vessel in which resin, coating, or other materials, or any combination thereof, are added to produce product blend. Georgia Rule (ccc) requires all subject portable and stationary mixing tanks be equipped with covers that completely cover the tank except for an opening no larger than necessary to allow for safe clearance of the mixer shaft, which shall remain covered at all times except when operator access is necessary. According to Application No. 23466, Alcon is in compliance with the requirements of Georgia Rule (ccc).

Non-Applicable Regulations
40 CFR 63 Subpart JJJJJJ, "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources"
MACT Subpart JJJJJJ applies to industrial, commercial, and institutional boilers at area sources of HAP emissions. Under §63.11195(e), gas-fired boilers are not subject to Subpart JJJJJJ. Because boilers BTI1, BTI2, and JCM1 through JCM2 fire only natural gas, Alcon will not be subject to Subpart JJJJJJ.

40 CFR 60 Subpart Kb, "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984"
NSPS Subpart Kb applies to each volatile organic liquid storage tank with a capacity greater than or equal to 75 m^3 (~19,813 gallons) for which construction, modification, or reconstruction commenced after July 23, 1984. Each storage tank at Alcon has a capacity of less than 19,813 gallons. Therefore, Alcon will not be subject to Subpart Kb.

40 CFR 60 Subpart VV, "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006"
40 CFR 60 Subpart VVa, "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006"
Subparts VV and VVa apply to the affected facilities in the synthetic organic chemical manufacturing industry (SOCMI). SOCMI is the industry that produces, as intermediates or final products, one or more of the chemicals listed in 40 CFR 60.489. Methyl ethyl ketone (MEK) is one of these listed chemicals. Alcon does not produce MEK as an intermediate or as a final product but is removing MEK from a wastewater stream to meet wastewater effluent standards. Therefore, Alcon will not be subject to Subparts VV and VVa.

40 CFR 60 Subpart NNN, "Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations"
Subpart NNN applies to distillation units used in the production of SOCMI chemicals listed in 40 CFR 60.667 for which construction, modification, or reconstruction commenced after December 30, 1983. Methyl ethyl ketone (MEK) is one of these listed chemicals. Alcon does not produce MEK as an intermediate or as a final product but is using the MEK distillation system to remove MEK from a wastewater stream to meet wastewater effluent standards. Therefore, Alcon will not be subject to Subpart NNN.

Georgia Rule 391-3-1-.02(2)(yy), "NO_X Emissions from Major Sources"
Georgia Rule (yy) applies to sources in the listed counties with potential NO_X emissions greater than the applicable threshold and requires reasonably available control technology (RACT) in controlling VOC emissions. Alcon is located in Fulton County and is a synthetic minor source with a federally enforceable NO_X limit of 25 tons per year. Therefore, Alcon will not be subject to Georgia Rule (yy).

Georgia Rule 391-3-1-.02(2)(lll), "NO_X Emissions from Fuel-Burning Equipment"
Georgia Rule (lll) applies to fuel-burning equipment located at facilities in the listed counties that was constructed or modified on or after May 1, 1999, and that has a heat input capacity equal to or greater than 10 MMBtu/hr and less than or equal to 250 MMBtu/hr. Boilers BTI1 and BTI2 were constructed in 1991 and, therefore, are not subject to Georgia Rule (lll). Boilers JCM1 through JCM8 have heat input capacities of 3.00 MMBtu/hr and, therefore, are not subject to Georgia Rule (lll).

Georgia Rule 391-3-1-.02(2)(mmm), "NO_X Emissions from Stationary Gas Turbines and Stationary Engines used to Generate Electricity"
Georgia Rule (mmm) applies to stationary gas turbines and stationary engines located at facilities in the listed counties with potential NO_X emissions greater than the applicable threshold. Alcon is located in Fulton County, one of the listed counties. Per Georgia Rule 391-3-1-.02(2)(mmm)7, emergency standby stationary engines, which is defined as any stationary engine that operates only when electric power from the local utility is not available and which operates less than 200 hours pre year, are not subject to the emission limits of this Rule. Therefore, the generators at Alcon are considered emergency standby stationary engines and are not subject to the emission limits of Georgia Rule (mmm).

Georgia Rule 391-3-1-.02(2)(rrr), "NO_X Emissions from Small Fuel-Burning Equipment"
Georgia Rule (rrr) applies to fuel-burning equipment that is not subject to Georgia Rule (jjj) or (lll) and is located at facilities in the listed counties with potential NO_X emissions greater than the applicable threshold. Alcon is located in Fulton County and is a synthetic minor source with a federally enforceable NO_X limit of 25 tons per year. Therefore, Alcon will not be subject to Georgia Rule (rrr).

Permit Conditions

1. General Requirements
Condition Nos. 1.1 through 1.5 are the general requirements that are included in all SIP permits.

2. Allowable Emissions

Equipment Emission Caps and Operating Limits

Condition No. 2.1 specifies the VOC emission limit for the equipment listed in Attachment A, which is all the existing equipment at the facility prior to construction of the project proposed in Application No. 23466. This condition was established for avoidance of the requirements of Non-Attainment NSR.

Condition No. 2.2 specifies the VOC emission limit for the equipment listed in Attachment B, which is all the equipment proposed in Application No. 23466. This condition was established for avoidance of the requirements of Non-Attainment NSR.

Condition No. 2.3 specifies the natural gas usage limit for the BTI boilers (BTI1 and BTI2) for avoidance of the requirements of Non-Attainment NSR for NO_X emissions.

Equipment Federal Rule Standards

Condition No. 2.4 is the general applicability condition for 40 CFR 60 Subpart Dc for the BTI boilers (BTI1 and BTI2).

Condition No. 2.5 specifies that only natural gas may be fired in the boilers BTI1, BTI2, and JCM1 through JCM8 and the Regenerative Thermal Oxidizers RTO1 and RTO2. This condition is for avoidance of 40 CFR 63 Subpart JJJJJJ applicability for the boilers and subsumes the fuel sulfur requirement of Georgia Rule (g) for the boilers and the RTOs.

Condition No. 2.6 is the general applicability condition for 40 CFR 63 Subpart ZZZZ for emergency generators BGEN, DGEN2, GEN3, and GEN4.

Condition No. 2.7 specifies the work practice requirements for operating emergency generators BGEN, DGEN2, and GEN3 under 40 CFR 63 Subpart ZZZZ.

Condition No. 2.8 is the general applicability condition for 40 CFR 60 Subpart IIII for emergency generator GEN4.

Condition No. 2.9 specifies the non-emergency service time limit and conditions for emergency generator GEN4 under 40 CFR 60 Subpart IIII.

Equipment SIP Rule Standards

Condition No. 2.10 specifies the opacity standard for all process equipment under Georgia Rule (b). This condition applies to each piece of equipment individually.

Condition No. 2.11 specifies the PM and opacity standards for boilers BTI1, BTI2, and JCM1 through JCM8 under Georgia Rule (d). This condition applies to each piece of equipment individually.

Condition No. 2.12 specifies the PM limit for all process equipment under Georgia Rule (e). This condition applies to each piece of equipment individually.

Condition No. 2.13 specifies the fuel sulfur content limit for emergency generators BGEN, DGEN2, GEN3, and GEN4 under Georgia Rule (g).

Condition No. 2.14 specifies the hours of operation limit for emergency generators BGEN, DGEN2, GEN3, and GEN4 for avoidance of Georgia Rule (mmm).

Condition No. 2.15 specifies the submerged fill pipe requirement for storage tanks TK01 through TK11, TK21 through TK23, TK25, and TK27 under Georgia Rule (vv).

3. Fugitive Emissions

Condition No. 3.1 specifies the work practice requirements for preventing fugitive emissions.

4. Process & Control Equipment

Condition No. 4.1 requires the facility to operate the appropriate Regenerative Thermal Oxidizer RTO1 or RTO2 during all times of operation of the LS3 process (LS03). This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 4.2 requires the facility to operate Regenerative Thermal Oxidizer RTO1 so as to achieve a minimum VOC destruction efficiency of 90% during all times that emissions from LS3 process (LS03) are routed to Regenerative Thermal Oxidizer RTO1. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 4.3 requires the facility to operate Regenerative Thermal Oxidizer RTO2 during all times of operation of the LS3 process (LS03A). This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 4.4 requires the facility to operate Regenerative Thermal Oxidizer RTO2 so as to achieve a minimum VOC destruction efficiency of 90% during all times of LS3 process (LS03A) operation and during all times that emissions from LS3 process (LS03) are routed to Regenerative Thermal Oxidizer RTO2. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 4.5 specifies the routine maintenance requirements for all process and control equipment.

Condition No. 4.6 specifies the work practice requirements for operating all process equipment as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 4.7 requires the facility to operate the appropriate Dust Collector(s) (DC01 through DC10) during all times of Secondary Packaging (SP01) operation for compliance with Georgia Rules (b) and (e).

5. Monitoring

General Monitoring Requirements

Condition No. 5.1 specifies the general monitoring requirements for continuous monitoring systems.

Specific Monitoring Requirements

Condition No. 5.2 specifies the continuous monitoring and recording requirements for the combustion temperature for Regenerative Thermal Oxidizers RTO1 and RTO2 as well as the accuracy and calibration requirements. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 5.3 requires the facility to install, calibrate, operate, and maintain a non-resettable hours meter on emergency generators BGEN, DGEN2, and GEN3 as a requirement of 40 CFR 63 Subpart ZZZZ and on emergency generator GEN4 as a requirement of 40 CFR 60 Subpart IIII.

Condition No. 5.4 specifies the annual inspection and leak detection and repair (LDAR) requirements for each valve and pump seal in gas/vapor or light liquid service associated with the operation of the LS3 process (LS03) or the new LS3 process (LS03A) in a manner consistent with 40 CFR 60 Subpart VVa. This condition was established as a case-by-case RACT requirement under Georgia Rule (tt).

6. Performance Testing

General Testing Requirements

Condition No. 6.1 specifies the general requirements associated with conducting performance tests.

Condition No. 6.2 specifies the test methods to be used for determining compliance with emission limits.

Specific Testing Requirements
Condition No. 6.3 specifies the initial performance testing requirements to determine the average VOC destruction efficiency and average combustion temperature for Regenerative Thermal Oxidizer RTO2 using the data collected. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 6.4 specifies the performance testing requirements to determine the average VOC destruction efficiency and average combustion temperature for Regenerative Thermal Oxidizer RTO1 using the data collected. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 6.5 specifies the performance testing requirements to determine the average VOC destruction efficiency and average combustion temperature for Regenerative Thermal Oxidizer RTO2 using the data collected. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

7. Notification, Reporting and Record Keeping Requirements
General Record Keeping and Reporting Requirements
Condition No. 7.1 requires the facility to maintain all records in a permanent form suitable for inspection and submission for at least five years.

Condition No. 7.2 requires the facility to report to the Division in writing any deviations from applicable requirements of four hours or more within seven days.

Condition No. 7.3 requires the facility to submit written semiannual reports of any failure to meet an applicable emission limit or standard or any failure to comply with any work practice standard or requirement.

Condition No. 7.4 requires the facility to submit written semiannual reports of any excess emissions, exceedances, or excursions and any monitoring malfunction.

Condition No. 7.5 requires the facility to maintain the listed records for sampling and measurement.

Condition No. 7.6 requires the facility to maintain records of all required measurements. These records shall be maintained in a permanent form suitable for inspection and submission for at least five years.

Condition No. 7.7 establishes the excess emissions, exceedances, and excursions that shall be included in the semiannual report in accordance with Condition No. 7.4.

Condition No. 7.7.a – Excess Emissions
There are no excess emissions to be reported

Condition No. 7.7.b – Exceedances
Paragraph (i) specifies an exceedance for the twelve-month rolling combined total VOC emissions from the equipment listed in Attachment A, which is all the existing equipment at the facility prior to construction of the project proposed in Application No. 23466. This paragraph was established for avoidance of the requirements for Non-Attainment NSR.

Paragraph (ii) specifies an exceedance for the twelve-month rolling combined total VOC emissions from the equipment listed in Attachment B, which is all the equipment proposed in Application No. 23466. This paragraph was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.7.c – Excursions
Paragraph (i) specifies an excursion for the twelve-month rolling combined natural gas usage of boilers BTI1 and BTI2. This paragraph was established for avoidance of the requirements for Non-Attainment NSR for NO_X emissions.

Paragraph (ii) specifies an excursion for fuels fired in boilers BTI1, BTI2, and JCM1 through JCM8 and Regenerative Thermal Oxidizers RTO1 and RTO2. This paragraph was established for avoidance of 40 CFR 63 Subpart JJJJJJ applicability for the boilers and subsumes the fuel sulfur content requirements of Georgia Rule (g) for the boilers and the RTOs.

Paragraph (iii) specifies an excursion for the sulfur content of fuels fired in emergency generators BGEN, DGEN2, GEN3, and GEN4 as a requirement of Georgia Rule (g).

Paragraph (iv) specifies an excursion for Regenerative Thermal Oxidizer RTO1 operation during all times that emissions from LS3 process (LS03) are routed to Regenerative Thermal Oxidizer RTO1. This paragraph was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Paragraph (v) specifies an excursion for the three-hour average combustion temperature of Regenerative Thermal Oxidizer RTO1 during all times that emissions from LS3 process (LS03) are routed to Regenerative Thermal Oxidizer RTO1. This paragraph was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Paragraph (vi) specifies an excursion for Regenerative Thermal Oxidizer RTO2 operation during LS3 process (LS03A) operation. This paragraph was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Paragraph (vii) specifies an excursion for the three-hour average combustion temperature of Regenerative Thermal Oxidizer RTO2 during all times of LS3 process (LS03A) operation and during all times that emissions from LS3 process (LS03) are routed to Regenerative Thermal Oxidizer RTO2. This paragraph was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Paragraph (viii) specifies an excursion for process equipment operating practices. This paragraph was established as a case-by-case RACT requirement under Georgia Rule (tt).

Paragraph (ix) specifies an excursion for the operation of the appropriate Dust Collector (DC01 through DC10) during Secondary Packaging SP01 operation. This condition was established to provide reasonable assurance of compliance with the opacity limit of Georgia Rule (b) and the PM limits of Georgia Rule (e).

Condition No. 7.8 requires the facility to report the actual facility-wide NO_X and VOC emissions to the Division annually as a requirement of all sources located in the 20-county Atlanta Non-Attainment Area.

Specific Record Keeping and Reporting Requirements

Condition No. 7.9 specifies the monthly recordkeeping requirements for each fuel fired in boilers BTI1 and BTI2 delivered to the facility. This condition is a recordkeeping requirement of 40 CFR 60 Subpart Dc.

Condition No. 7.10 specifies the monthly natural gas usage recordkeeping requirements for boilers BTI1 and BTI2. This condition was established for avoidance of the requirements of Non-Attainment NSR for NO_X emissions.

Condition No. 7.11 specifies the threshold for reporting monthly natural gas usage by boilers BTI1 and BTI2. This condition was established for avoidance of the requirements of Non-Attainment NSR for NO_X emissions.

Condition No. 7.12 specifies the twelve-month rolling natural gas usage recordkeeping requirements for boilers BTI1 and BTI2. This condition also specifies the threshold for reporting twelve-month rolling natural gas usage by boilers BTI1 and BTI2. This condition was established for avoidance of the requirements of Non-Attainment NSR for NO_X emissions.

Condition No. 7.13 specifies the startup notification requirements for Regenerative Thermal Oxidizer RTO2. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 7.14 specifies deviations and the associated reporting requirements for Regenerative Thermal Oxidizer RTO1. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 7.15 specifies deviations and the associated reporting requirements for Regenerative Thermal Oxidizer RTO2. This condition was established for avoidance of the requirements of Non-Attainment NSR and as a case-by-case RACT requirement under Georgia Rule (tt).

Condition No. 7.16 specifies the hours of operation recordkeeping requirements for emergency generators BGEN, DGEN2, GEN3, and GEN4 in emergency and non-emergency operation. This condition is a requirement of 40 CFR 63 Subpart ZZZZ for emergency generators BGEN, DGEN2, and GEN3 and is a requirement of 40 CFR 60 Subpart IIII for emergency generator GEN4.

Condition No. 7.17 specifies the monthly VOC usage recordkeeping requirements for all VOC-containing compounds used at the facility. This condition was established for avoidance of the requirements of Non-Attainment NSR.

Condition No. 7.18 specifies the monthly VOC recordkeeping requirements for the equipment listed in Attachment A, which is all the existing equipment at the facility prior to construction of the project proposed in Application No. 23466, and the threshold for reporting those monthly emissions. This condition was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.19 specifies the equations to be used in calculating the monthly VOC emissions from equipment listed in Attachment A, which is all the existing equipment at the facility prior to construction of the project proposed in Application No. 23466, in Condition No. 7.18. This condition was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.20 specifies the twelve-month rolling total VOC emissions from equipment listed in Attachment A, which is all the existing equipment at the facility prior to construction of the project proposed in Application No. 23466, and the threshold for reporting those twelve-month rolling total VOC emissions. This condition was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.21 specifies the monthly VOC recordkeeping requirements for the equipment listed in Attachment B, which is all the equipment proposed in Application No. 23466, and the threshold for reporting those monthly emissions. This paragraph was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.22 specifies the equations to be used in calculating the monthly VOC emissions from equipment listed in Attachment B, which is all the equipment proposed in Application No. 23466, in Condition No. 7.21. This condition was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.23 specifies the twelve-month rolling total VOC emissions from equipment listed in Attachment B, which is all the equipment proposed in Application No. 23466, and the threshold for reporting those twelve-month rolling total VOC emissions. This condition was established for avoidance of the requirements for Non-Attainment NSR.

Condition No. 7.24 specifies the startup, shutdown, and malfunction recordkeeping requirements.

8. Special Conditions

Condition No. 8.1 specifies the general requirement reserving the right of the Division to amend the permit for the protection of public health, safety, and welfare.

Condition No. 8.2 is the standard condition requiring the facility to calculate and pay an annual permit fee.

Condition No. 8.3 is the standard condition revoking all previous permits issued to the facility, including, but not limited to, Air Quality Permit Nos. 3851-121-0774-S-03-0 and 3851-121-0774-S-03-1.

Condition No. 8.4 requires the facility to submit a completed Title V application within twelve months of commencing operation as a major source.

Toxic Impact Assessment

Toxic Impact Assessments (TIAs) were conducted for four pollutants emitted from the facility and were submitted as part of Application No. 23466. The four pollutants are methyl ethyl ketone (MEK), 1-propanol, formic acid, and acrylic acid (polyacrylic acid). The pollutants were modeled using the SCREEN3 dispersion model. The primary sources emitting air toxics of concern are the existing R&D line, the existing LS3 lines (LS03) routed to Regenerative Thermal Oxidizer RTO1, and the new LS3 lines (LS03A) routed to Regenerative Thermal Oxidizer RTO2. The maximum modeled impacts resulting from emissions through each of these three stacks were determined using SCREEN3. Because Alcon is located in an urban area, the urban option was selected within the model, and building downwash was conservatively estimated within the assessment.

For each pollutant, the sum of the modeled impacts from each of the three stacks was compared to the Acceptable Ambient Concentrations (AACs) for that pollutant. All modeled pollutants were shown to have impacts below the respective AACs. Full inputs and results are detailed in Appendix E to Application No. 23466.

Summary & Recommendations

Based upon the above considerations, I recommend that Alcon Laboratories, Inc. be issued Air Quality Permit No. 3851-121-0744-E-04-0 for the operation of a contact lens manufacturing facility. As noted in the **Background Information** section of this narrative, Alcon Laboratories, Inc. is an existing synthetic minor facility under Non-Attainment NSR and Title V for VOC and NO_X operating under Air Quality Permit No. 3851-121-0774-S-03-0, issued September 27, 2012, with one amendment issued April 21, 2014. Alcon Laboratories, Inc. will become a major source with respect to Non-Attainment NSR and Title V for VOC emissions upon the issuance of this permit. Alcon Laboratories, Inc. is located in the Mountain District – Atlanta; however, the Stationary Source Compliance Program is responsible for compliance, inspection, complaints, and submittal of reports for this facility. The Public Advisory was issued on September 2, 2015, and expired on October 2, 2015. No comments were received during the Public Advisory period.