



**STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE**

PERMIT TO CONSTRUCT / MODIFY AND OPERATE AIR CONTAMINANT SOURCE(S)

Permit Number: 481911
Facility (Permittee): Denso Manufacturing Athens Tennessee, Inc.
Facility ID: 54-0158
Facility Address: 2400 Denso Drive, Athens
McMinn County
Facility Classification: Conditional Major
Federal Requirements: Not Applicable
Facility Description: Automotive Parts Manufacturing Facility

Conditional Major Permit 481911, consisting of 33 pages is hereby issued March 22, 2024, pursuant to the Tennessee Air Quality Act and by the Technical Secretary, Tennessee Air Pollution Control Board, Department of Environment and Conservation. This permit expires on July 1, 2033. The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations (TAPCR).

Michelle W. Owenby
Technical Secretary
Tennessee Air Pollution Control Board

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

Section I – Sources Included in this Permit

FACILITY DESCRIPTION			
Source Number	Source Description	Status	Control Device/Equipment
29	Calibration and Valve Assembly	Existing	RTO
30	Four Heater Assembly Operations (#1-#4)	Existing	None
38	Monolithic Carrier Production with Kilns #1 and #2	Existing	Baghouse/Thermal Oxidizers (TO1, TO2)
44	Gasoline Direct Injection Line Phase II (GDI3-P2)	Existing	Oil Mist Collectors, RTO
46	Fuel Systems Production Process	Existing	Thermal Oxidizers (N-TO, S-TO)
48	New Zonal ECU cleanroom operation	New	Thermal Oxidizers (N-TO, S-TO)

Section II – Permit Record

Permit Type	Description of Permit Action	Issue Date
Initial	Initial issuance of combined Conditional Major permit (combines operating permit amendment to incorporate changes made in Permit #978607 to Source 38 and construction permit for new Source 48)	March 22, 2024

Section III - General Permit Conditions

G1. Responsible Person

The application that was utilized in the preparation of this permit is dated November 28, 2023(with amendment request letter dated February 3, 2023), and is signed by Eddie Franks, Safety, Health, and Environment Manager, the Responsible Person for the permittee. The Responsible Person may be the owner, president, vice-president, general partner, plant manager, environmental/health/safety coordinator, or other person that is able to represent and bind the facility in environmental permitting affairs. If this Responsible Person terminates their employment or is assigned different duties and is no longer the person to represent and bind the permittee in environmental permitting affairs, the new Responsible Person for the permittee shall notify the Technical Secretary of the change in writing. The Notification shall include the name and title of the new Responsible Person assigned by the permittee to represent and bind the permittee in environmental permitting affairs, and the date the new Responsible Person was assigned these duties.

Should a change in the Responsible Person occur, the new Responsible Person must submit the Notification provided in Appendix 1 of this permit no later than 30 days after being assigned as the Responsible Person. A separate notification shall be submitted for each subsequent change in Responsible Person.

TAPCR 1200-03-09-.03(8)

G2. Application and Agreement Letters

This source shall operate in accordance with the terms of this permit, the information submitted in the approved permit application(s) referenced in **Condition G1**, and any documented agreements made with the Technical Secretary.

TAPCR 1200-03-09-.01(1)(d)

G3. Submittals

Unless otherwise specified within this permit, the permittee shall submit, preferably via email and in Adobe Portable Document format (PDF), all applicable plans, checklists, certifications, notifications, test protocols, reports, and applications to the attention of the following Division Programs at the addresses indicated in the table below:

Permitting Program	Compliance Validation Program	Field Services Program
• Notifications • Startup certifications • Applications • NSPS reports • MACT/GACT/NESHAP reports • Emission Statements	• Test protocols • Emission test reports • Visible emission evaluation reports	• Semiannual reports • Annual compliance certifications/status report
Before June 1, 2024 Division of Air Pollution Control William R. Snodgrass TN Tower, 15 th Floor 312 Rosa L. Parks Avenue Nashville, TN 37243 Air.Pollution.Control@tn.gov		Chattanooga Environmental Field Office Division of Air Pollution Control 1301 Riverfront Parkway, Suite #206 Chattanooga, TN 37402 APC.ChattEFO@tn.gov
On and after June 1, 2024 State of Tennessee Department of Environment and Conservation Division of Air Pollution Control Davy Crockett Tower, 7 th Floor 500 James Robertson Parkway Nashville, TN 37243 Air.Pollution.Control@tn.gov		

The permittee shall submit the information identified above as requested in this permit. In lieu of submitting this information to the email addresses above, the permittee may submit the information to the attention of the respective Division Programs at the mailing addresses listed above.

TAPCR 1200-03-09-.03(8)

G4. Notification of Changes

The permittee shall notify the Technical Secretary for any of the following changes to a permitted air contaminant source which would not be a modification requiring a new construction permit:

- change in air pollution control equipment that does not result in an increase or otherwise meet the definition of a modification
- change in stack height or diameter
- change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

The permittee must submit the Notification provided in Appendix 2 of this permit 30 days before the change is commenced.

TAPCR 1200-03-09-.02(7)

G5. Permit Transference

- A. This permit is not transferable from one air contaminant source to another air contaminant source or from one location to another location. The permittee must submit a construction permit application for a new source to the Permitting Program not less than 90 days prior to the estimated starting date of these events. If the new source will be subject to major New Source Review, the application must be submitted not less than 120 days in advance of the estimated starting date of these events.

TAPCR 1200-03-09-.03(6)(b)

- B. In the event an ownership change occurs at this facility, the new owner must submit the notification provided in Appendix 3 of this permit. The written notification must be submitted by the new owner to the Permitting Program no later than 30 days after the ownership change occurs. If the change in ownership results in a change in Responsible Person for the facility, notification of the change in Responsible Person must also be submitted, as specified in **Condition G1**.

TAPCR 1200-03-09-.03(6)(a) and (b) and 1200-03-09-.01(1)(b)

G6. Operating Permit Application Submittal

- A. The permittee shall apply for an operating permit renewal not less than 60 days prior to the permit's expiration date.

TAPCR 1200-03-09-.02(3)(a)

- B. Operation of each air contaminant source shall be in accordance with the provisions and stipulations set forth in this permit, all provisions of the Tennessee Division of Air Pollution Control Regulations, and all provisions of the Tennessee Air Quality Act.

TAPCR 1200-03-09-.02(6)

G7. Startup Certification for New or Modified Source(s)

The startup certification provided in Appendix 4 shall be submitted to the Permitting Program once an air contaminant source has started up. Startup of the air contaminant source shall be the date the new or modified air contaminant source began operation for the production of product for sale, use as raw materials, or steam or heat production under the terms of this permit.

TAPCR 1200-03-09-.03(8)

Compliance Method: The startup certification provided in Appendix 4 shall be submitted no later than 30 days after each air contaminant source has begun startup.

G8. Fees

The air contaminant source(s) identified in this permit shall comply with the requirements for payment of applicable annual emission fees and annual conditional major review fees to the Tennessee Division of Air Pollution Control based on the Administrative Fees Schedule I provided in Appendix 5 of this permit. The fee must be paid to the Division in full by the first day of the month that the fee is due (determined from Appendix 5). (Note: not all facilities are required to pay annual emission fees)

TAPCR 1200-03-26-.02

G9. General Recordkeeping Requirements

- A. All recordkeeping requirements for all data required to be recorded shall follow the following schedules:

For Daily Recordkeeping	For Weekly Recordkeeping	For Monthly Recordkeeping
No later than seven days from the end of the day for which the data is required.	No later than seven days from the end of the week for which the data is required.	No later than thirty days from the end of the month for which the data is required.

- B. The information contained in logs, records, and submittals required by this permit shall be kept at the facility's address, unless otherwise noted, and provided to the Technical Secretary or a Division representative upon request or as required in this permit. Computer-generated logs are acceptable. Compliance is assured by retaining the logs, records, and submittals specified in this permit for a period of not less than five years at the facility's address.

TAPCR 1200-03-10-.02(2)(a)

G10. Routine Maintenance Requirements

The permittee shall maintain and repair the emission source, associated air pollution control device(s), and compliance assurance monitoring equipment as required to maintain and assure compliance with the specified emission limits.

TAPCR 1200-03-09-.03(8)

Compliance Method: Records of all repair and maintenance activities required above shall be recorded in a suitable permanent form and kept available for inspection by the Division. These records must be retained for a period of not less than five years. The date each maintenance and repair activity began shall be entered in the log no later than seven days following the start of the repair or maintenance activity, and the completion date shall be entered in the log no later than seven days after activity completion.

G11. Visible and Fugitive Emissions

- A. Unless otherwise specified, visible emissions from this facility shall not exhibit greater than 20% opacity, except for one six-minute period in any one-hour period, and for no more than four six-minute periods in any 24-hour period. A stack is defined as any chimney, flue, conduit, exhaust, vent, or opening of any kind whatsoever, capable of, or used for, the emission of air contaminants.

TAPCR 1200-03-05-.01(1) and 1200-03-05-.03(6)

Compliance Method: When required to demonstrate compliance, visible emissions shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

- B. The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions shall include, but are not limited to, the following:

- (a) Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;

- (b) Application of asphalt, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;
- (c) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in TAPCR 1200-03-20. A malfunction is defined as, any sudden and unavoidable failure of process equipment or for a process to operate in an abnormal and unusual manner. Failures that are caused by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

TAPCR 1200-03-08-.01(1) and 1200-03-08-.01(2)

Compliance Method: When required to demonstrate compliance, fugitive emissions shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.

- C. Fugitive emissions from roads and parking areas shall not exhibit greater than 10% opacity.

TAPCR 1200-03-08-.03

Compliance Method: When required to demonstrate compliance, fugitive emissions from roads and parking areas shall be determined by utilizing Tennessee Visible Emissions Evaluation (TVEE) Method 1, as adopted by the Tennessee Air Pollution Control Board on April 29, 1982, as amended on September 15, 1982, and August 24, 1984.

G12. NSPS/NESHAP/MACT/GACT Standards

Not Applicable

G13. VOC and NO_x Emission Statement

Not Applicable

G14. Facility-wide Limitations (Other Than Conditional Major)

Not Applicable

G15. Permit Supersedes Statement

This permit supersedes all previously issued permits for this/these source(s).

TAPCR 1200-03-09-.03(8)

G16. Source Testing Requirements

Not Applicable

G17. VOC and HAP Recordkeeping

The as-supplied volatile organic compound (VOC) and hazardous air pollutant (HAP) content of all VOC and HAP-containing materials (all coatings, inks, adhesives, thinners, and solvents) to be used by this facility shall be determined from Safety Data Sheets (SDS) or manufacturer or vendor formulation data which explicitly list the VOC and HAP content by weight. If new materials are used, or if material formulation is changed, logs used to calculate emissions of VOC and HAP shall be updated within 30 days from the initial date of usage of the new or altered material.

TAPCR 1200-03-09-.03(8) and 1200-03-10-.02(2)(a)

Compliance Method: Purchase orders and/or invoices for all VOC- and HAP-containing materials, along with current SDS, must be maintained and kept available for inspection by the Technical Secretary or a Division representative. The SDS must explicitly list the VOC and HAP content by weight for all VOC- and HAP-containing materials. If SDS are not available with this information, vendor formulation data containing the required information for those materials must also be maintained. These records must be retained in accordance with **Condition G9**. Scanned documents (maintained electronically) may be used to fulfill this requirement.

G18. VOC and HAP, Waste Solvent Shipped Off Site

All waste VOC that are drummed and shipped offsite to a proper reuse or disposal site or which are shipped offsite in finished injectors can be deducted from the facility's VOC emissions. Before credit can be given, the following conditions must be met:

- (a) The quantity of VOC-containing waste shipped offsite shall be obtained from hazardous waste manifests and disposal records. The permittee shall analyze the VOC-containing calibration fluid waste stream at least once a year utilizing EPA Method 24/24A. The results of this analysis shall be included with the compliance status report required by **Condition C5**. The permittee shall utilize the results of the most recent analysis performed and the quantity of waste shipped offsite to calculate the quantity of VOC shipped offsite, on a monthly basis, for each applicable source.
- (b) Credit for residual VOC shipped offsite in finished injectors shall be determined as per the approved VOC Compliance Protocol submitted by the company (Appendix 10). The permittee shall maintain a monthly log of the amount of VOC shipped offsite as waste or as residual in finished injectors. These values shall also be included in the source-specific emission calculations for each applicable source. All logs shall be retained in accordance with **Condition G9**.

TAPCR 1200-03-10-.02(2)(a)

Section IV – Conditional Major Conditions

C1. Major Source Opt-Out Requirements

The permittee has elected to opt-out of being issued a major source operating permit pursuant to TAPCR 1200-03-09-.02(11)(a). The permittee would be considered a major source because their potential to emit value for VOC was greater than 100 tons per year, their potential to emit a single HAP was greater than 10 tons per year, and their potential to emit a combination of HAP was greater than 25 tons per year at the time of application. The permittee has agreed to be subject to limitations in order to be below the major source applicability thresholds for VOC of 100 tons per year, and for single and combined HAP of 10 and 25 tons per year, respectively.

TAPCR 1200-03-09-.02(11)(a)

C2. Notification of Non-Compliance

Any non-compliance with any condition(s) of this permit set to restrain the potential to emit below the applicability threshold(s) of 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations, shall be reported in writing to the Technical Secretary within 15 working days of such discovery. This notification, at a minimum, shall include the identification of the source, identification of the permit condition(s) violated, and details of the violation.

TAPCR 1200-03-09-.03(8) and 1200-03-09-.02(11)(a)

C3. Failure to Abide by Conditional Major Emission Limit(s)

The permittee is placed on notice that **Condition C4** of this permit contains limitations that allow the permittee to opt-out of the major source operating permit program requirements specified in paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations. Failure to abide by these limits will not only subject the permittee to enforcement action by the State of Tennessee, but it may also result in the imposition of federal enforcement action by the United States Environmental Protection Agency and the loss of being federally recognized as a conditional major source.

TAPCR 1200-03-09-.02(11)(e)1(vi)(I)

C4. Conditional Major Emission Limit(s)

Emissions from the entire facility shall not exceed the following federally enforceable maximum emission rate(s), including emissions from exempt and insignificant emission units:

Pollutant(s)	Maximum Emission Rate(s) (tons during any period of 12 consecutive months)
Volatile Organic Compounds (VOC)	99.0
Individual Hazardous Air Pollutants (listed pursuant to Section 112(b) of the Federal Act)	9.9
Combined Hazardous Air Pollutants	24.9

TAPCR 1200-03-09-.02(11)(a) and the permittee's agreement letter dated March 22, 2024 (Appendix 8)

Compliance Method: Compliance with these emission limits shall be assured through recordkeeping and proper operation of the associated control devices, where applicable. The permittee shall calculate the actual quantities of VOC and HAP emitted from this facility during each calendar month and during each period of 12 consecutive months. The permittee shall maintain records of these emissions in a form that readily shows compliance with the emission limits above (see example logs below or use a similar format that includes the same information). The permittee shall keep records of monthly material usage from monthly inventory reports for VOC-containing materials, calibration fluid, and cleanup solvent. Monthly emissions may be calculated assuming that calibration fluids and solvents (paint, thinner, and cleanup solvents) removed from inventory in a given month are emitted that month. The VOC content of the waste solvents shall be determined as noted in paragraph (a) of **Condition G18**. The amount of VOC to be credited (see below) shall be determined no later than the fifteenth day of the following month. The emissions calculated pursuant to this paragraph shall be deemed the actual VOC emissions from the facility for compliance purposes. Unused solvents returned to inventory on a given month may be credited to that month's emissions.

Credited means that this quantity of material can be deducted from the amount of material which is used when calculating emissions.

The emissions are deducted because either: the quantity of material being deducted is material which is being returned to the inventory, therefore, this material is not emitted from this facility; the quantity of material being deducted is shipped offsite as waste or for proper reuse, and therefore this material is not emitted from this facility; or the quantity of material is shipped offsite as residuals in the fuel injectors and therefore, this material is not emitted from this facility.

The procedures for determining the above quantities are found in **Condition G18** and in the approved VOC Compliance Protocol (Appendix 10).

In addition to the VOC emitted from the permitted sources at this facility, a total of 25.0 tons of VOC from insignificant activities and exempt sources shall be added to the 12-consecutive month total.

In addition to the HAP emitted from the permitted sources at the facility, a total of 1.0 ton for a single HAP and 3.0 tons for a combination of HAP from insignificant activities and exempt sources shall be added to the 12-consecutive month totals.

The as-supplied VOC and HAP content of all VOC and HAP-containing materials (all coatings, inks, adhesives, thinners, and solvents) to be used by this facility shall be determined as specified in **Condition G17**. All logs shall be retained in accordance with **Condition G9**.

LOG 1: Facility-Wide Monthly VOC and HAP Emission Log					
Month/Year:					
Source Number	VOC Emitted (ton/mo)	HAP ₁ Emitted (ton/mo)	HAP ₂ Emitted (ton/mo)	HAP _n Emitted ¹ (ton/mo)	Total HAP Emitted (ton/mo)
54-0158-29					
54-0158-30					
54-0158-38					
54-0158-44					
54-0158-46					
54-0158-48					
Exempt/Insignificant Activities					
Totals:					

¹ The columns for individual HAP should be repeated for each HAP emitted by the source. Monthly emissions should be calculated for each individual HAP. Identify each HAP by name and/or CAS# in the appropriate column heading.

LOG 2: Facility-Wide Annual VOC and HAP Emission Log								
Month/Year	VOC		HAP ₁		HAP ₂		Total HAP	
	(ton/mo)	(ton/12 consecutive mo) ¹	(ton/mo) ²	(ton/12 consecutive mo)	(ton/mo) ²	(ton/12 consecutive mo)	(ton/mo)	(ton/12 consecutive mo)

¹ The tons per 12-consecutive month values are the sum of the emissions in the 11 months preceding the month just completed + the emissions in the month just completed. If data is not available for the 11 months preceding the initial use of this table, this value will be equal to the value for tons per month. For the second month, it will be the sum of the first month and the second month. Indicate in parentheses the number of months summed [i.e., 6 (2) represents 6 tons emitted in 2 months].

² The columns for individual HAP should be repeated for each HAP emitted. Identify each HAP by name and/or CAS# in the appropriate column heading.

If the facility adds insignificant or exempt activities/emission units that emit VOC and/or HAP, the permittee shall provide notification to the Division of the change in facility VOC and/or HAP emissions at least 30 days prior to the installation of each insignificant activity/emission unit [TAPCR 1200-03-09-.04(4)(a)] or at least 30 days prior to the installation of each exempt air contaminant source [TAPCR 1200-03-09-.04(4)(b), (c), or (d)].

C5. Annual Compliance Status Report

The permittee shall submit a written report stating the compliance status of this facility with permit **Condition C4** by March 31 of every year. The report shall cover the preceding calendar year and shall include the records required by **Conditions C4, S1-4C, S1-6, S2-4, S3-4B, S3-6, S4-4B, S4-4C, and S4-7**. The first report following issuance of this permit is due March 31, 2025, and shall cover the permits and time periods specified below. The report must include the compliance certification statement included in Appendix 7. Reports submitted with unsigned certification statements will be deemed incomplete.

Permit Number	Reporting Period Begins	Reporting Period Ends	Report Due Date
464514	January 1, 2024	March 21, 2024	March 31, 2025
481911	March 22, 2024	December 31, 2024	March 31, 2025

The report covering calendar year 2023, required by **Condition G15** of Permit 464514, must be submitted as required by Permit 464514.

TAPCR 1200-03-09-.03(8), 1200-03-09-.02(11)(a), and 1200-03-10-.02(2)(a)

Section V - Source Specific Permit Conditions

Source Number	Source Description
29	Calibration and Valve Assembly Rooms (1 and 2): The Calibration and Valve Assembly rooms contain four lines: C-3 Line #1 and Line #2; UC Line #1 and Line #2. All lines are controlled by the RTO.
44	Gasoline Direct Injection Line (Phase II): The gasoline direct injection line (GDI3-P2) is comprised of 49 machines used for the fabrication, assembly, and calibration of gasoline fuel injectors. Fabrication equipment consists of body grinding, needle grinding, holder cutting, connector grinding, fluid grinding and FAS coating. Oil mist collectors are used to control emissions from the fabrication equipment. Emissions of VOC from the calibration equipment are exhausted through the RTO.

S1-1. Input Limitation(s) or Statement(s) of Design

- A. The stated design heat input rate of the RTO is 1.905 million British thermal units per hour (MMBtu/hr). Should the permittee need to modify the RTO in a manner that increases the stated design heat input rate a construction permit shall be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.03(8) and the information provided by the facility on March 29, 2019

Compliance Method: The permittee shall maintain documentation to demonstrate the heat input capacity of the RTO. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

- B. Only natural gas shall be used as fuel for the RTO. Should the permittee need to modify the source to allow the use of a fuel other than natural gas a construction permit shall be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.03(8) and the information provided by the facility on March 29, 2019

Compliance Method: The permittee shall maintain documentation to demonstrate the type of fuel used by the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

S1-2. Production Limitation(s)

Not Applicable

S1-3. Operating Hour Limitation(s)

Not Applicable

S1-4. Emission Limitation(s)

- A. Particulate matter (PM) emitted from the Calibration and Valve Assembly Rooms shall not exceed 1.0 pounds per hour (lbs/hr) on a daily average basis.

TAPCR 1200-03-26-.02(6)(b) and the agreement letter dated March 22, 2024 (Appendix 8)

Compliance Method: The RTO shall be operating when the associated process emission sources are in operation. Compliance with this emission limit shall be assured by compliance with **Condition S1-6**.

- B. PM emitted from the GDI3-P2 line shall not exceed 0.02 grain per dry standard cubic foot of stack gases (2.53 lbs/hr).

TAPCR 1200-03-07-.04(1)

Compliance Method: The oil mist collectors shall be operating when the associated process emission sources are in operation. Compliance with this emission limit shall be assured by maintaining each control device in accordance with **Condition G10**.

- C. Emissions of VOC, each individual HAP, and total HAP from this source, when combined with emissions from all other emission sources at this facility, including exempt and insignificant emission units, shall not exceed the facility-wide limits specified in **Condition C4**.

TAPCR 1200-03-09-.02(11)(a) and the agreement letter dated March 22, 2024 (Appendix 8)

Compliance Method: The permittee shall calculate actual quantities of VOC, each individual HAP, and total HAP emitted from this source during each calendar month and during each period of 12 consecutive months and maintain records of the emissions in a log (see example Log 3 and Log 4 in Appendix 9 or use a similar format that provides the same information). The overall control efficiency to be used in emissions calculations has been determined to be 99.32%. This is based on an RTO destruction efficiency of 99.32% and a capture efficiency of 100% for the approved total enclosure. The destruction efficiency is based upon the performance test conducted on January 14-15, 2020, and approved in the Division acceptance letter dated October 8, 2021.

Emissions of VOC and HAP from this source shall be included in the recordkeeping required by **Condition C4**. These logs must be completed and retained in accordance with **Condition G9**.

S1-5. Source-Specific Visible Emissions Limitation(s)

Not Applicable

S1-6. Control Device Monitoring

The permittee shall continuously monitor and record (i.e., a minimum of once every 15 minutes) the RTO combustion temperature using a thermocouple during emission unit operations. The RTO shall be operated with a minimum combustion chamber temperature of 1,630°F averaged over a three-hour block period. This requirement is based on the results of the most recent capture efficiency and destruction efficiency testing of the RTO on January 14-15, 2020, as acknowledged in the Division acceptance letter dated October 8, 2021. The first three-hour block period of each day begins at 12:00 midnight and ends at 2:59 am. The second three-hour block period of each day begins at 3:00 am and ends at 5:59 am, etc.

TAPCR 1200-03-10-.02(2)(a)

Compliance Method: Compliance with the above minimum combustion chamber temperature requirement and maintenance of the approved permanent total enclosure shall assure an overall VOC destruction efficiency of 99.32%. Any deviations from the RTO's minimum combustion chamber temperature requirement (three-hour block data averaging basis) during which the average temperature is more than 50°F below the minimum combustion chamber temperature of 1,630°F shall be recorded in a deviation log within seven days of the incident. An explanation of the cause of the incident and the corrective action taken shall be included in the deviation log. The combustion chamber temperature shall be recorded in either electronic or manual format. Manual format records shall also include the initials of the person performing the readings, along with the date, time, and any relevant comments. Times that the source is not in operation shall be noted. A copy of the temperature deviation log shall be submitted as part of the annual compliance report required by **Condition C5**. These records shall be retained in accordance with **Condition G9**.

S1-7. Permanent Total Enclosure Criteria

The enclosure in which the emission units are installed shall meet the following criteria for a total enclosure and to assure 100% capture of emissions being sent to the control device:

- (a) Any natural draft opening (NDO) shall be at least four equivalent opening diameters from each VOC emitting point unless otherwise specified by the Technical Secretary. An NDO is defined as any permanent opening in the enclosure that remains open during operation of the emission source and is not connected to a duct in which a fan is installed.
- (b) Any exhaust point from the enclosure shall be at least four equivalent duct or hood diameters from each NDO.
- (c) The total area of all NDOs shall not exceed 5% of the surface area of the enclosure's four walls, floor, and ceiling.
- (d) The average facial velocity (FV) of air flow through all NDOs shall be at least 200 feet per minute (fpm). The direction of air flow through all NDOs shall be into the enclosure. A differential pressure across the enclosure of 0.007 inches of water (0.013 mm Hg) is required to demonstrate compliance with this requirement.
- (e) All access doors and windows whose areas are not included in item (c) and are not included in the calculation in item (d), shall be closed during routine operation of the emission source. Those doors or windows open during the verification of those sections may remain open at all times.

40 CFR 51 Appendix M, EPA Method 204 and TAPCR 1200-03-10-.02(1)(a)

Compliance Method: The enclosure was acknowledged to meet these requirements and approved by the Division in the letter dated October 8, 2021.

- S1-8.** Emissions of nitrogen oxides (NO_x) and sulfur dioxide (SO₂) from this source were calculated based on emission factors from AP-42, Tables 1.4-1 and 1.4-2 and are provided in the table below. These emission rates are provided for fee purposes.

Pollutant	Emission rate (tons/year)
SO ₂	0.00108
NO _x	0.18

TAPCR 1200-03-26-.02(6)

Source Number	Source Description
30	Four Heater Assembly Operations (#1, #2, #3, and #4)

S2-1. Input Limitation(s) or Statement(s) of Design

Not Applicable

S2-2. Production Limitation(s)

Not Applicable

S2-3. Operating Hour Limitation(s)

Not Applicable

S2-4. Emission Limitation(s)

Emissions of VOC, each individual HAP, and total HAP from this source, when combined with emissions from all other emission sources at this facility, including exempt and insignificant emission units, shall not exceed the facility-wide limits specified in **Condition C4**.

TAPCR 1200-03-09-.02(11)(a) and the agreement letter March 22, 2024 (Appendix 8)

Compliance Method: The permittee shall calculate actual quantities of VOC, each individual HAP, and total HAP emitted from this source during each calendar month and during each period of 12 consecutive months and maintain records of the emissions in a log (see example Log 3 and Log 4 in Appendix 9 or use a similar format that provides the same information). Emissions of VOC and HAP from this source shall be included in the recordkeeping required by **Condition C4**. These logs must be completed and retained in accordance with **Condition G9**.

S2-5. Source-Specific Visible Emissions Limitation(s)

Not Applicable

Source Number	Source Description
38	Monolithic Carrier Production: This source consists of mixing/extruding process with baghouse control; Kiln #1 with thermal oxidizer (TO1) control; Kiln #2 with low-NO _x burners and thermal oxidizer (TO2) control.

S3-1. Input Limitation(s) or Statement(s) of Design

- A. The stated design heat input capacity of this source is 34.4 million British thermal units per hour (MMBtu/hr). Should the permittee need to modify this source in a manner that increases the stated design heat input capacity, a construction permit shall be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.01(1)(d) and the application dated October 13, 2020

Compliance Method: The permittee shall maintain documentation to demonstrate the heat input capacity for this source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

- B. Only natural gas shall be used as fuel for this source. Should the permittee need to modify this source to allow the use of a fuel other than natural gas, a construction permit shall be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.01(1)(d) and the application dated October 13, 2020

Compliance Method: The permittee shall maintain documentation to demonstrate the type(s) of fuel used by the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

S3-2. Production Limitation(s)

Not Applicable

S3-3. Operating Hour Limitation(s)

Not Applicable

S3-4. Emission Limitation(s)

- A. PM emitted from this source shall not exceed 0.02 grain per dry standard cubic foot of stack gases (15.92 pounds per hour [lbs/hr]) on a daily average basis.

TAPCR 1200-03-07-.04(1)

Compliance Method: The baghouse(s) shall be operating when the associated process emission sources are in operation. The permittee shall maintain a daily log to demonstrate that the baghouse(s) is in operation when the associate process emission source is operating (see example Log 5 in Appendix 9 or use a similar format that provides the same information). This log must be completed and retained in accordance with **Condition G9**.

- B. Emissions of VOC, each individual HAP, and total HAP from this source, when combined with emissions from all other emission sources at this facility, including exempt and insignificant emission units, shall not exceed the facility-wide limits specified in **Condition C4**.

TAPCR 1200-03-09-.02(11)(a) and the agreement letter dated March 22, 2024 (Appendix 8)

Compliance Method: The permittee shall calculate actual quantities of VOC, each individual HAP, and total HAP emitted from this source during each calendar month and during each period of 12 consecutive months and maintain records of the emissions in a log (see example Log 3 and Log 4 in Appendix 9 or use a similar format that provides the same information). The overall control efficiencies to be used in emission calculations are 89.4% for TO1 and 99.2% for TO2. This is based on the measured destruction efficiencies and a capture efficiency of 100%. The destruction efficiencies are based upon the performance tests conducted on August 31 and November 2, 2022, and approved in the Division acceptance letter dated March 17, 2023. Emissions of VOC and HAP from this source shall be included in the recordkeeping required by **Condition C4**. These logs must be completed and retained in accordance with **Condition G9**.

S3-5. Source-Specific Visible Emissions Limitation(s)

Not Applicable

S3-6. Control Device Monitoring

The kilns shall not be operated unless the associated thermal oxidizer (TO) is in operation. In case of control device malfunction, any product previously loaded into the kiln may finish traveling through the heated kiln. Ballast or dummy parts may be loaded into the kiln in order to maintain the kiln thermal mass balance. No additional green product shall be loaded into the kiln until the control device is fully and properly functioning.

The permittee shall continuously monitor and record (i.e., a minimum of once every fifteen minutes) the TO combustion chamber temperature during operation of the associated kiln. Each TO shall be operated with a minimum combustion chamber temperature not more than 50°F below the average combustion temperature recorded during the performance test, averaged over a three-hour block period, as specified below:

TO ID	Average Combustion Temperature Recorded During Performance Test	Minimum Combustion Chamber Temperature During Operation
TO1	762.5°F	712.5°F
TO2	790.0°F	740.0°F

The first three-hour block period of each day begins at 12:00 midnight and ends at 2:59 am. The second three-hour block period of each day begins at 3:00 am and ends at 5:59 am, etc.

TAPCR 1200-03-09-.03(8) and 1200-03-10-.02(2)(a)

Compliance Method: Compliance with the above minimum combustion chamber temperature requirements shall assure the overall control efficiencies specified in **Condition S3-4B**. Any deviations from the TO minimum combustion chamber temperature requirements (three-hour block data averaging basis) during which the average temperature is more than 50°F below the minimum combustion chamber temperature specified above shall be recorded in a deviation log within seven days of the incident. An explanation of the cause of the incident and the corrective action taken shall be included in the deviation log. The combustion chamber temperature shall be recorded in either electronic or manual format. Manual format records shall also include the initials of the person performing the readings, along with the date, time, and any relevant comments. Times that the source is not in operation shall be noted. A copy of the temperature deviation log shall be submitted as part of the annual compliance report required by **Condition C5**. These records shall be retained in accordance with **Condition G9**.

S3-7. Emissions of NO_x, SO₂, and carbon monoxide (CO) from this source shall not exceed the maximum emission rates in the table below.

Pollutant	Maximum Emission Rate (tons per 12 consecutive months)	Regulatory Basis
NO _x	9.2	TAPCR 1200-03-07-.07(2)
SO ₂	0.09	TAPCR 1200-03-14-.01(3)
CO	12.05	TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with this condition is assured through compliance with **Condition S3-1** and using the appropriate emission factors from AP-42 tables 1.4-1 and 1.4-2 for natural gas combustion.

Source Number	Source Description
46	Fuel Systems Production Process [Plant 701]: Fuel systems parts fabrication: Cold forging of metal, metal stamping, metal cutting, metal grinding, and carbon coating of metal parts. Parts fabrication includes 36 total cutting, grinding, lapping, and deburring machines with cutting oils used in the machining operations. Carbon coating of parts with argon and acetylene (acetylene is consumed in the coating reaction). Multiple electrostatic oil mist collectors (with a common exhaust stack) are used for control of particulate matter emissions from fuel systems fabrication. One oil mist collector is provided per each cutting, grinding, lapping, and deburring machine. Solvent washing of fabricated metal parts, assembly, calibration, and inspection: (1) Hydrocarbon washing: parts are washed in a paraffinic hydrocarbon solvent in a sequence of 3 tanks containing solvent followed by 3 tanks containing deionized water. Most of the solvent carryover is distilled and reused (emissions result from evaporation). (2) Fluorine washing: Parts are washed in an organic cleaning agent that contains 5% ethanol. (3) Solvent washing: Parts are washed in a Stoddard solvent. Inspection and calibration are part of the assembly step and involve testing and calibration of parts with a Stoddard solvent. Two regenerative thermal oxidizers (N-TO and S-TO) are used for control of VOC and HAP emissions associated with solvent washing, assembly, calibration, and inspection operations.
48	Zonal Electronic Control Unit (ECU) Cleanroom [Plant 701]: The cleanroom process consists of manual sealant, manual service, manual sealer coat, auto sealant, and auto sealant coat lines. There are total of nine lines (three manual sealer application lines and six automated sealer application lines). The cleanroom meets the criteria of a permanent total enclosure (PTE). Emissions from the cleanroom are exhausted to the N-TO and S-TO.

S4-1. Input Limitation(s) or Statement(s) of Design

- A. The stated design heat input capacity of each thermal oxidizer (N-TO and S-TO) is 1.003 MMBtu/hr. Should the permittee need to modify this source in a manner that increases the stated design heat input capacity, a construction permit shall be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.03(8) and the information provided by the facility on March 29, 2019

Compliance Method: The permittee shall maintain documentation to demonstrate the heat input capacity for this source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

- B. Only natural gas shall be used as fuel for the thermal oxidizers (N-TO and S-TO). Should the permittee need to modify this source to allow the use of a fuel other than natural gas, a construction permit shall be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.03(8) and the information provided by the facility on March 29, 2019

Compliance Method: The permittee shall maintain documentation to demonstrate the type(s) of fuel used by the source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

S4-2. Production Limitation(s)

Not Applicable

S4-3. Operating Hour Limitation(s)

Not Applicable

S4-4. Emission Limitation(s)

- A. PM emitted from the Fuel Systems Production Process and Zonal ECU shall not exceed 1.0 pound per hour (lbs/hr) on a daily average basis.

TAPCR 1200-03-07-.01(5), 1200-03-26-.02(6)(b), and the agreement letter dated March 22, 2024 (Appendix 8)

Compliance Method: The control devices shall be operating when the associated process emission sources are in operation. Compliance with this emission limit shall be assured by compliance with **Condition S4-7**.

- B. Emissions of VOC, each individual HAP, and total HAP from this source, when combined with emissions from all other emission sources at this facility, including exempt and insignificant emission units, shall not exceed the facility-wide limits specified in **Condition C4**.

TAPCR 1200-03-09-.02(11)(a) and the agreement letter dated March 22, 2024 (Appendix 8)

Compliance Method: The permittee shall calculate actual quantities of VOC, each individual HAP, and total HAP emitted from this source during each calendar month and during each period of 12 consecutive months and maintain records of the emissions in a log (see example Log 3 and Log 4 in Appendix 9 or use a similar format that provides the same information). The overall control efficiency to be used in emission calculations is 89.9%. This is based on a measured destruction efficiency of 89.9% and a capture efficiency of 100% for the approved total enclosure. The destruction efficiency is based upon the performance test conducted on October 30, 2018, with the Division acceptance letter dated March 21, 2019. The total enclosure is acknowledged in the Division acceptance letter dated October 8, 2021. Emissions of VOC and HAP from this source shall be included in the recordkeeping required by **Condition C4**. These logs must be completed and retained in accordance with **Condition G9**.

- C. Fluoride emissions (reported as hydrogen fluoride [HF]) from this source shall not exceed 1.0 pounds per hour on a daily average basis.

TAPCR 1200-03-03-.03(1)(b)

Compliance Method: Compliance with this emission limit shall be demonstrated through recording of material usage and calculation of actual HF emissions, on a monthly basis. Emissions shall be calculated using an emission factor determined using the results of the performance test. Emission should be included in the records required by **Condition S4-4B**.

S4-5. Source-Specific Visible Emissions Limitation(s)

Not Applicable

- S4-6.** The exhaust gases from N-TO and S-TO shall be discharged unobstructed vertically upwards to the ambient air from a stack with an exit diameter of 2.67 feet, not less than 39.75 feet above ground level.

TAPCR 1200-03-03-.03(1)(b)

Compliance Method: This is a statement of parameters utilized in the source impact analysis dated July 10, 2019, performed by the Division. The permittee must notify the Technical Secretary at least 30 days before changing any of these parameters.

S4-7. Control Device Monitoring

The permittee shall continuously monitor and record (i.e., a minimum of once every 15 minutes) the thermal oxidizer (N-TO and/or S-TO) combustion temperature using a thermocouple during emission unit operations. Each TO shall be operated with a minimum combustion chamber temperature not more than 50°F below the average combustion temperature recorded during the performance test, averaged over a three-hour block period, as specified below:

TO ID	Average Combustion Temperature Recorded During Performance Test	Minimum Combustion Chamber Temperature During Operation
N-TO	1,498°F	1,448°F
S-TO	1,489°F	1,439°F

This requirement is based on the results of the most recent capture efficiency and destruction efficiency testing of the N-TO on January 14-15, 2020, as acknowledged in the Division acceptance letter dated October 8, 2021, and testing of the S-TO on October 30, 2018, as acknowledged in the Division acceptance letter dated March 21, 2019. The first three-hour block period of each day begins at 12:00 midnight and ends at 2:59 am. The second three-hour block period of each day begins at 3:00 am and ends at 5:59 am, etc.

TAPCR 1200-03-10-.02(2)(a)

Compliance Method: Compliance with the above minimum combustion chamber temperature requirement and maintenance of the approved permanent total enclosure shall assure an overall VOC destruction efficiency of 89.9%. Any deviations from the TO minimum combustion chamber temperature requirements (three-hour block data averaging basis) during which the average temperature is more than 50°F below the minimum combustion chamber temperatures shown above shall be recorded in a deviation log within seven days of the incident. An explanation of the cause of the incident and the corrective action taken shall be included in the deviation log. The combustion chamber temperature shall be recorded in either electronic or manual format. Manual format records shall also include the initials of the person performing the readings, along with the date, time, and any relevant comments. Times that the source is not in operation shall be noted. A copy of the temperature deviation log shall be submitted as part of the annual compliance report required by **Condition C5**. These records shall be retained in accordance with **Condition G9**.

S4-8. The enclosure in which the emission units are installed shall meet the following criteria for a total enclosure and to assure 100% capture of emissions being sent to the control device:

- (a) Any natural draft opening (NDO) shall be at least four equivalent opening diameters from each VOC emitting point unless otherwise specified by the Technical Secretary. An NDO is defined as any permanent opening in the enclosure that remains open during operation of the emission source and is not connected to a duct in which a fan is installed.
- (b) Any exhaust point from the enclosure shall be at least four equivalent duct or hood diameters from each NDO.
- (c) The total area of all NDOs shall not exceed 5% of the surface area of the enclosure's four walls, floor, and ceiling.
- (d) The average facial velocity (FV) of air flow through all NDOs shall be at least 200 feet per minute (fpm). The direction of air flow through all NDOs shall be into the enclosure. A differential pressure across the enclosure of 0.007 inches of water (0.013 mm Hg) is required to demonstrate compliance with this requirement.
- (e) All access doors and windows whose areas are not included in item (c) and are not included in the calculation in item (d), shall be closed during routine operation of the emission source. Those doors or windows open during the verification of those sections may remain open at all times.

40 CFR 51 Appendix M, EPA Method 204 and TAPCR 1200-03-10-.02(1)(a)

Compliance Method: The enclosure was acknowledged to meet these requirements and approved by the Division in the letter dated October 8, 2021.

S4-9. Emissions of NO_x and SO₂ from this source were calculated based on emission factors from AP-42, Tables 1.4-1 and 1.4-2 and are provided in the table below. These emission rates are provided for fee purposes.

Pollutant	Maximum Emission Rate (tons per 12 consecutive months)
NO _x	0.19
SO ₂	0.00114

TAPCR 1200-03-26-.02(2)(d)

(end of conditions)

The permit application gives the location of this source as 35°28'37" Latitude and 84°38'41" Longitude.

Appendix 1: Notification of Change in Responsible Person

Facility (Permittee): _____ Denso Manufacturing Athens Tennessee, Inc. _____

Facility ID: _____ 54-0158 _____

Former Responsible Person: _____
Name Title

New Responsible Person: _____
Name Title

Email

Mailing Address

Phone (Office) Phone (cell)

Date New Responsible Person was assigned this duty: _____

I certify that the information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer’s name (print)	Title	Phone (with area code)

Appendix 2: Notification of Changes

Facility (Permittee): Denso Manufacturing Athens Tennessee, Inc.

Facility ID: 54-0158

Source Number: _____

	Control Equipment	Stack Height (Feet)	Stack Diameter (Feet)	Exit Velocity (Feet/Second)	Exit Temperature (°F)
Current					
Proposed					
Current					
Proposed					
Current					
Proposed					

Comments:

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

Appendix 3: Notification of Ownership Change

Facility (Permittee): Denso Manufacturing Athens Tennessee, Inc. (Previous Owner)

Facility ID: 54-0158

Facility (Permittee): _____ (New Owner) _____
Date of Ownership Change

Secretary of State Control Number: _____ [as registered with the TN Secretary of State (SOS)]

Responsible Person/Authorized Contact	Email Address
Mailing Address	Phone with area code
Principal Technical Contact	Email Address
Mailing Address	Phone with area code
Billing Contact	Email Address
Mailing Address	Phone with area code

As the responsible person for the new owner or operator of the above mentioned facility (permittee):

- I agree to not make any changes to the stationary source(s) that meet the definition of modification as defined in Division 1200-03 or Division 0400-30¹, and
- I agree to comply with the conditions contained in **the permits listed below**, Division 1200-03 and Division 0400-30 of the Tennessee Air Pollution Control Regulations, the Tennessee Air Quality Act, and any documented agreements made by the previous owner to the Technical Secretary.

List all active permits issued to the facility for which the owner wishes to assume ownership:

The information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature	Date
Signer's name (print)	Title
	Phone (with area code)

¹ Appropriate application forms must be submitted prior to modification of the stationary source(s).

Appendix 4: Startup Certification

Facility (Permittee): Denso Manufacturing Athens Tennessee, Inc.

Facility ID: 54-0158

Startup Certification for Source Number:

The permittee shall certify the startup date for each new or modified air contaminant source regulated by Conditional Major permit 481911 by submitting this document.

Date of startup: / /
Month Day Year

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Startup Certification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

Appendix 5: Fees

All minor and conditional major source annual emission fees are due and payable to the Division in full according to SCHEDULE I below². The county that a source is located in determines when the minor source annual emission fee is due. Fees are due the first day of the month listed. If a source is located on contiguous property in more than one county, the county appearing earliest in the calendar year shall be used to determine the due date of the annual emission fee.

SCHEDULE I Month the Annual Emissions Fee is Due (Accounting Period) Counties in the Monthly Grouping

January	Anderson, Bedford, Benton, Bledsoe, Blount, Bradley and Campbell
February	Cannon, Carroll, Carter, Cheatham, Chester, Claiborne, Clay and Cocke
March	Coffee, Crockett, Cumberland, Davidson, Decatur, DeKalb, Dickson, Dyer and Fayette
April	Fentress, Franklin, Gibson, Giles, Grainger, Greene and Grundy
May	Hamblen, Hamilton, Hancock, Hardeman, Hardin, Hawkins, Haywood and Henderson
June	Henry, Hickman, Houston, Humphreys, Jackson, Jefferson, Johnson, Knox, Lake, Lauderdale, Lawrence and Lewis
July	Lincoln, Loudon, McMinn, McNairy, Macon and Madison
August	Marion, Marshall, Maury, Meigs, Monroe, Montgomery, Moore and Morgan
September	Obion, Overton, Perry, Pickett, Polk, Putnam and Rhea
October	Roane, Robertson, Rutherford, Scott, Sequatchie, Sevier, and Shelby
November	Smith, Stewart, Sullivan, Sumner, Tipton, Trousdale, Unicoi and Union
December	Van Buren, Warren, Washington, Wayne, Weakley, White, Williamson and Wilson

² Note that some sources with allowable emissions below specific thresholds are not subject to the requirement to pay annual emission fees. Contact the Emission Inventory Program at apc.inventory@tn.gov if you have any questions.

Appendix 6: Emission Statement for VOC and NO_x

Not Applicable

Appendix 7: Compliance Certification Statement

Facility (Permittee): Denso Manufacturing Athens Tennessee, Inc.

Facility Address:

Facility ID: 54-0158

Conditional Major Permit Number	Reporting Period	Report Deadline

This report is required pursuant to TAPCR 1200-03-09-.02(11)(a).

Responsible Person Certification

I, the undersigned, am a Responsible Person (as described in **Condition G1**) of the facility for which this report is being submitted. This document consists of _____ pages and they are numbered from page ____ to _____. As a Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Annual Compliance Status Report is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer’s name (print)	Title	Phone (with area code)

Appendix 8: Agreement Letters



March 22, 2024

Technical Secretary
Division of Air Pollution Control
Tennessee Department of Environmental and Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, Tennessee 37243

Subject: Emissions Agreement Letter for Source 54-0158 as listed in the Draft Permit #481911

Technical Secretary:

DENSO Manufacturing Athens Tennessee, Inc. is in agreement with the terms and limitations as specified in the draft permit #481911.

Emissions from the entire facility shall not exceed the following federally enforceable maximum emission rate(s), including emissions from exempt and insignificant emission units as specified in **Condition C4**.

Pollutant(s)	Maximum Emission Rate(s) (tons during any period of 12 consecutive months)
Volatile Organic Compounds (VOC)	99.0
Individual Hazardous Air Pollutants (listed pursuant to Section 112(b) of the Federal Act)	9.9
Combined Hazardous Air Pollutants	24.9

Source 29 (PM) shall not exceed the following specified in **Condition S1-4**:

PM emitted from the Calibration and Valve Assembly Rooms shall not exceed 1.0 pounds per hour (lbs/hr) on a daily average basis. TAPCR 1200-03-26-.02(6)(b) and the agreement letter dated March 14, 2003 (Appendix 8)

Source 46 and 48 (PM) shall not exceed the following specified in **Condition S4-4**:

PM emitted from the Fuel Systems Production Process and Zonal ECU shall not exceed 1.0 pound per hour (lbs/hr) on a daily average basis.

TAPCR 1200-03-07-.01(5), 1200-03-26-.02(6)(b), and the agreement letter dated October 24, 2014 (Appendix 8).

Thank you for your efforts and communication in the permit process.

Best Regards,

Eddie Franks
Manager, Safety, Health and Environment

DENSO MANUFACTURING ATHENS TENNESSEE, INC.
2400 Denso Drive, Athens, Tennessee 37303

Appendix 9: Example Logs

Example log for monthly and annual VOC and HAP emission calculations, **Conditions S1-4C, S2-4, S3-4B, S4-4B, and S4-4C.**

LOG 3: Monthly VOC and HAP Emission Log													
Month/Year:			Source Number:				Emissions						
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Material ID	Material Name	Material Usage (gal/month or lb/mo)	Material Density (lb/gal)	VOC Content (wt% or lb VOC/gal)	HAP ₁ Content (wt% or lb HAP ₁ /gal)	HAP ₂ ¹ Content (wt% or lb HAP ₂ /gal)	Total HAP Content (wt% or lb HAP ₁ /gal)	VOC (lb/mo)	VOC (ton/mo)	HAP ₁ (lb/mo)	HAP ₁ (ton/mo)	Total HAP (lb/mo)	Total HAP (ton/mo)
Total													

¹The columns for individual HAP should be repeated for each HAP contained in the materials used. Monthly emissions shall be calculated for each individual HAP. Identify each HAP by name and/or CAS# in the appropriate column headings.

[9] VOC Emissions (lb/mo) = [3] Material Usage (gal/mo) * [4] Material Density (lb/gal) * [5] VOC Content (wt%), or

[9] VOC Emissions (lb/mo) = [3] Material Usage (gal/mo) * [5] VOC Content (lb/gal), or

[9] VOC Emissions (lb/mo) = [3] Material Usage (lb/mo) * [5] VOC Content (wt%)

[10] VOC Emissions (ton/mo) = [9] VOC Emissions (lb/mo) / 2,000 lb/ton

[11] HAP₁ Emissions (lb/mo) = [3] Material Usage (gal/mo) * [4] Material Density (lb/gal) * [6] HAP₁ Content (wt%), or

[11] HAP₁ Emissions (lb/mo) = [3] Material Usage (gal/mo) * [6] HAP₁ Content (lb/gal), or

[11] HAP₁ Emissions (lb/mo) = [3] Material Usage (lb/mo) * [6] HAP₁ Content (wt%)

[illegible]

¹ The tons per 12-consecutive month values are the sum of the emissions in the 11 months preceding the month just completed + the emissions in the month just completed. If data is not available for the 11 months preceding the initial use of this table, this value will be equal to the value for tons per month. For the second month, it will be the sum of the first month and the second month. Indicate in parentheses the number of months summed [i.e., 6 (2) represents 6 tons emitted in 2 months].

² The columns for individual HAP should be repeated for each HAP contained in the materials used. Monthly emissions should be calculated for each individual HAP. Identify each HAP by name and/or CAS# in the appropriate column headings.

Example log provided for compliance with **Condition S3-4A**.

LOG 5: 20XX Daily Baghouse Operating Log for Source 38							
JAN ☐ FEB ☐ MAR ☐ APR ☐ MAY ☐ JUN ☐ JUL ☐ AUG ☐ SEP ☐ OCT ☐ NOV ☐ DEC ☐							
Day	Observation Time	<Process Source> operating?		<Control Device> operating?		Comments / Corrective Actions	Initials
		Yes	No	Yes	No		
1		☐	☐	☐	☐		
2		☐	☐	☐	☐		
3		☐	☐	☐	☐		
4		☐	☐	☐	☐		
5		☐	☐	☐	☐		
6		☐	☐	☐	☐		
7		☐	☐	☐	☐		
8		☐	☐	☐	☐		
9		☐	☐	☐	☐		
10		☐	☐	☐	☐		
11		☐	☐	☐	☐		
12		☐	☐	☐	☐		
13		☐	☐	☐	☐		
14		☐	☐	☐	☐		
15		☐	☐	☐	☐		
16		☐	☐	☐	☐		
17		☐	☐	☐	☐		
18		☐	☐	☐	☐		
19		☐	☐	☐	☐		
20		☐	☐	☐	☐		
21		☐	☐	☐	☐		
22		☐	☐	☐	☐		
23		☐	☐	☐	☐		
24		☐	☐	☐	☐		
25		☐	☐	☐	☐		
26		☐	☐	☐	☐		
27		☐	☐	☐	☐		
28		☐	☐	☐	☐		
29		☐	☐	☐	☐		
30		☐	☐	☐	☐		
31		☐	☐	☐	☐		

Appendix 10: VOC Emission Calculation Procedure

DENSO Manufacturing Athens Tennessee, Inc.

Date: August 31, 2021

VOC Emissions Calculations

RE: Emission Source Reference Nos. 54-0158-29 and 54-0158-46 (Permit No. 464514P)

The referenced emission sources include: the RTO and fuel injector assembly and calibration equipment (Source 29) and the fuel systems assembly and calibration equipment along with the associated TO1 and TO2 (Source 46). The fuel injector assembly (Source 29) and calibration equipment and fuel systems (pump) assembly and calibration equipment (Source 46) have been determined to meet the requirements for total enclosure (per Division acceptance letter dated July 31, 2020). DENSO proposes the following method to determine the overall capture and control efficiency of the emission sources:

- The quantity of calibration fluid, VOCs, used by the source each month will be determined from monthly production and inventory logs and/or flow monitoring data. The quantity of VOCs used each month will be considered as being emitted from the source.

Emissions credit calculation method for VOCs shipped off-site as waste

- All waste VOCs that are drummed and shipped offsite to a proper disposal site may be used as credit toward the facility's VOC emissions. The quantity of waste shipped off-site will be obtained from hazardous waste manifests and disposal records. DENSO has completed Volatiles Method 24/24A analysis of the calibration fluid VOC waste stream. Based on the samples analyzed the waste calibration fluid contains 97.24% volatiles by weight. Because the content of the waste stream is consistent, DENSO requests that the 97.24% volatiles, 6.38 lbs VOC per gallon of waste calibration fluid, be incorporated as a standard VOC factor for the waste stream credit. The total gallons of waste calibration fluid shipped each month will be multiplied by 6.38 lbs VOC/gallon of waste to calculate the quantity of VOCs in the waste.
- The volume of waste calibration fluid generated each month varies. During routine operation of the calibration system, DENSO generates approximately 150 gallons of waste per month. DENSO must maintain a high level of cleanliness in the calibration fluid system to prevent contamination of the fuel injectors during the production process. The calibration fluid system is drained periodically and completely replaced to maintain the required level of cleanliness. Over 1,200 gallons of waste calibration fluid is generated by each periodic replacement of the calibration fluid.

Emissions credit calculation method for VOCs shipped off-site as residuals in finished injectors (source 54-0158-29) and pumps (source 54-0158-46)

- **Injectors (Source 54-0158-29):**

- A small quantity of residual VOCs remains in each fuel injector. The actual amount of residual VOCs varies by fuel injector part number. The finished fuel injectors are packaged for shipment in sealed containers to prevent contamination. The packaging also prevents the fugitive emission of the residual calibration fluid at DENSO. The finished injectors are then shipped to customers for final installation into engines. DENSO requests that the residual fluid be credited toward the facility's VOC emissions based on actual monthly production volumes.
- DENSO has calculated the internal volume of each injector type based on engineering design drawings. The quantity of calibration fluid in each injector ranges from 0.00158 to 0.0032 lbs depending on the injector type. The actual quantity of VOC sent off-site in finished injectors each month will be calculated by multiplying the number of each type of injector shipped off-site by its corresponding residual value. The total number of fuel injectors shipped off-site will be obtained from sales and shipment records.

$(\# \text{ Type A injectors shipped} \times 0.00158 \text{ pounds residual VOC/type A injector}) = \text{Total quantity of residual VOC in type A injectors}$

- **Pumps (Source 54-0158-46):**

- There are 2 types of fuel pumps low pressure and high pressure pumps. The basic design is the same and the volume of residual calibration fluid is the same for both types of pump.
- Testing and design requirements has determined the residual volume of these pumps to be 3.58 grams (0.007 pounds) of calibration fluid per pump.
- The finished fuel pumps are packaged for shipment in sealed containers to prevent contamination. The packaging also prevents the fugitive emission of the residual calibration fluid at DENSO. The finished injectors are then shipped to customers for final installation into engines. DENSO requests that the residual fluid be credited toward the facility's VOC emissions based on actual monthly production volumes.

These calculations to determine residual calibration fluid will be completed monthly for pumps produced and each type of injector. The credit for residual in the injectors will be the total of all injector types shipped. The credit for pumps will be the number of pumps produced $\times$ 0.007 pounds / pump.

Actual Control Efficiency Calculation:

It has been determined that the DENSO fuel injector and fuel pump assembly and calibration processes meet the requirements for total enclosure. Therefore capture efficiency is 100%.

Injectors (Source 54-0158-29): RTO

- Destruction Efficiency = 99.32% (Based on Performance test January 14-15 2020)
- Capture Efficiency = 100%
- **Control Efficiency = Destruction Efficiency x Capture efficiency = 99.32% x 100% = 99.32%**

Pumps (Source 54-0158-46): TO1 & TO2

- Destruction Efficiency (Based on performance test January 14-15, 2020)
 - North Thermal Oxidizer (TO1) = 98.27
- Destruction Efficiency (Based on performance test October 30,2018)
 - South Thermal Oxidizer (TO2) = 89.9%
 - In order to simplify recordkeeping the more conservative destruction efficiency of 89.9% will be used in calculating the VOC and HAPs emissions from this source.
- **Control Efficiency = Destruction Efficiency x Capture efficiency = 89.9% x 100% = 89.9%**

Actual Emissions Calculation:

Emissions = (Calibration fluid used – Fluid disposed of as waste – Residual fluid in parts)
x (1.0- Control Efficiency %/100)