



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

September 19, 1988

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. James R. Kolanek
Manager, Environmental Services
Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

Dear Mr. Kolanek:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permits for Harris Semiconductor for Buildings No. 54 and No. 59, in order to consolidate multiple permits previously issued for the sources/buildings. Buildings No. 54 and No. 59 are wafer fabrication sources.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/

Attachments

cc: C. Collins, Cent. FL Dist.
L. R. Hutker, P.E., HS
B. Pittman, Esq., DER

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permits by:

Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

DER File Nos. AC 05-147321
AC 05-150794

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue permits (copy attached) for the proposed project as detailed in the applications specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Harris Semiconductor, applied on March 3, 1988 and June 10, 1988, respectively, to the Department of Environmental Regulation for permits to consolidate multiple permits issued previously for Buildings No. 54 and No. 59, which are wafer fabrication sources. The sources/buildings are located at the applicant's existing facility on Palm Bay Road in the City of Palm Bay, Brevard County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permits were needed for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, FAC, you (the applicant) are required to publish at your own expense the enclosed Notice of Proposed Agency Action on the permit applications. The notice must be published one time only in a section of a major local newspaper of general circulation in the county in which the project is located and within thirty (30) days from receipt of this intent. Proof of publication must be provided to the Department within seven days of publication of the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permits.

The Department will issue the permits with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S. A person whose substantial interests are affected by the

Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirements of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copy enclosed) and be filed with (received by) the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant must be filed within fourteen (14) days of receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this intent, whichever first occurs. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes, concerning the subject permit applications. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

C. Collins, Cent. FL Dist.
L. R. Hutker, P.E., HS
B. Pittman, Esq., DER

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 9-19-88.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Jeddy Rogers
Clerk

9-19-88
Date

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

- (1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.
- (2) All petitions filed under these rules should contain:
 - (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name and address of the petitioner or petitioners;
 - (c) All disputed issues of material fact. If there are none, the petition must so indicate;
 - (d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;
 - (e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;
 - (f) A demand for the relief to which the petitioner deems himself entitled; and
 - (g) Such other information which the petitioner contends is material.

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department of Environmental Regulation hereby gives notice of its intent to issue permits to Harris Semiconductor to consolidate multiple permits previously issued for Buildings No. 54 and No. 59, which are wafer fabrication sources and located at the applicant's existing facility on Palm Bay Road in the City of Palm Bay, Brevard County, Florida. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The applications are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
Central Florida District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

Harris Semiconductor
Brevard County
Palm Bay, Florida

Construction Permit Numbers:

AC 05-147321

AC 05-150794

Florida Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Quality Management
Central Air Permitting

September 19, 1988

I. Application

A. Applicant

Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

B. Project and Location

The applicant has applied for construction permits for Buildings No. 54 and No. 59, in order to consolidate multiple permits previously issued for these sources/buildings.

The existing facility is located on Palm Bay Road, City of Palm Bay, Florida. The UTM coordinates are Zone 17, 538.7 km East and 3100.9 km North.

C. Process and Controls

1. Building 54

Building 54 is a wafer fabrication facility. The second floor of the two-story building houses two clean room modules. Both fabrication areas employ a series of manufacturing procedures referred to as layering, patterning, doping and heating processes. The frequency and sequence of these processes can vary depending on the desired nature of the final product.

Wet stations that house vats containing a variety of acid and caustic compounds are located throughout the clean rooms. Storage cabinets safely hold virgin chemicals until they are ready for use. The first floor of the building contains exhausted gas cabinets that supply process gases to the 'fab' operations.

The exhaust system for the building is divided into two sections. The west half exhaust is fed into a common duct that is divided into two wet scrubber systems, F54S01 and F54S02, at ground level. The east portion of the building exhaust is ducted to a common line that divides into two wet scrubbers (F54S03 and F54S04) on the east side of building. Also on the east side of Building 54 is a non-scrubbed exhaust fan F54E17 that handles air flow from several alligners, furnace source cabinets, and gas cabinets.

2. Building 59

Building 59 houses a wafer fabrication facility on the second floor. The fabrication area employs a series of manufacturing procedures referred to as layering, patterning,

doping and heating processes. The frequency and sequence of these processes can vary depending on the desired nature of the final product.

Thirteen exhausted wet stations that house vats containing a variety of acid and caustic compounds are in the fabrication facility. Five of these stations contain solvents, one of which is heated.

The ground floor of the two-story manufacturing area houses a process equipment support room that contains gas cabinets, chemical storage cabinets, vacuum pumps and drains. These exhausted units service the process equipment which resides above it in the fabrication area. Storage cabinets safely hold virgin chemicals until they are ready for use. Gas cabinets house cylinders that supply process gases to the 'fab' operations. In addition, several waste collection areas are exhausted. The ground floor also houses the site's distilled water plant and a mechanical equipment storage area.

The exhaust system for the building is divided between two scrubbers. Acid vapors are vented to scrubber number F59S01, while solvent exhaust streams are ducted to scrubber number F59S03. Both systems reside on the site grounds directly outside the west wall of the building.

3. General

In the controlled environment of the fabrication clean room, wafer surfaces first undergo acid and/or solvent cleaning followed by thermal oxidation in furnaces to form a layer of silicon dioxide on the wafer surface.

During the patterning process the wafers are initially baked and primed. Coaters then spin a thin layer of "photoresist" on the wafer, after which the wafers are soft baked. Next, the circuit pattern is projected onto the wafers via "aligners" or "steppers." Developers are then applied to remove unpolymerized areas of photoresist. This is followed by a solvent rinse.

Next, the wafers are hard-baked, inspected to determine accuracy, and etched by wet (acid bath) or dry (plasma vapor) mechanisms. Once etching is complete, the photoresist is stripped off the wafer using chemical baths or plasma techniques.

In another step of the fabrication process, "dopant" atoms are either diffused into the wafer in diffusion furnaces, or accelerated into the wafer using "ion implantation." Fumes from the vapor deposition furnaces are oxidized in burn boxes. The oxidized gases are then exhausted to scrubber systems. Additional material may be layered on the wafer surface in vapor and

crystal (epitaxial) deposition furnaces. Metallization to interconnect uppermost circuit layers is performed by deposition (using "sputtering" systems) or evaporation.

A material balance scheme will be used to account for the annual VOC/solvent emissions released into the atmosphere by the facility. A program of sampling and analysis will be used to assess the VOC/solvent emissions from each building.

The Standard Industrial Classification Codes are:

- o Major Group 36: Electrical and Electronic Machinery, Equipment, and Supplies
- o Industry Group No. 367: Electronic Components and Accessories
- o Industry No. 3674: Semiconductors and Related Devices

The Source Classification Codes are:

- o Major Group 36: Organic Solvent Evaporation
- o Building 54 4-01-003-99 Tons VOC/solvent consumed
- o Building 59 4-01-003-99 Tons VOC/solvent consumed

II. Rule Applicability

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4.

The application packages were deemed complete on July 1, 1988.

The existing facility is located in an area designated attainment for all pollutants. Therefore, review of emissions shall be in accordance with FAC Rule 17-2.500, Prevention of Significant Deterioration (PSD).

Since the facility is not one of those contained in Table 500-1, FAC Rule 17-2, the VOC/solvent threshold for triggering new source review pursuant to FAC Rule 17-2.500(5) is 250 TPY.

The following table presents the projected potential VOC/solvent emissions:

Table 1

Source	Potential VOC/solvent Emissions (TPY)
Building 54	
o F54S01	15.24
o F54S02	15.24
o F54S03	32.59
o F54S04	32.59
Building 59	
o F59S03	0.50
Total:	96.16

Note: 1. Annual hours of operation at 8760.

The following table presents the projected potential VOC/solvent emissions from the facility:

Table 2

Building	Potential VOC/solvent Emissions (TPY)
4	10.96
51	33.29
54	95.65
57	1.66
58	3.24
59	0.50
60	min.
61	0.25
62	0.83
63	6.14
Total:	152.50

Since the potential emissions are less than 250 TPY for the facility, the potential emissions projected from Buildings 54 and 59 will be reviewed pursuant to FAC Rule 17-2.520, Sources Not Subject to PSD or Nonattainment Requirements.

Since there is no specific emission limiting standard contained in FAC Rule 17-2.600 nor is there any standards of performance for new stationary sources contained in FAC Rule 17-2.660, the sources will be permitted in accordance with FAC Rule 17-2.620, General Pollutant Emission Limiting Standards.

In FAC Rule 17-2.620(1)(a), no person shall store, pump, handle, process, load, unload or use in any process or installation volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. Pursuant to FAC Rule 17-2.620(2), no person shall cause, suffer, allow or

permit the discharge of air pollutants which cause or contribute to an objectionable odor. Objectionable odor is defined as any odor present in the outdoor atmosphere, which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance according to FAC Rule 17-2.100(132).

The buildings operations/sources are subject to the provisions of FAC Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-4.130: Plant Operation-Problems; and, 17-4.140: Reports.

III. Summary of Emissions

A. Emission Limitations

The regulated pollutant emissions from these buildings/sources are VOC/solvents in accordance with FAC Rule 17-2.620.

Specific acid solutions are also being used during the manufacturing operations. There are no specific emission limiting standards for these specific acids. However, the acid vapors will be scrubbed to reduce emissions.

The following table presents the allowable VOC/solvent emissions and the potential acid vapor emissions from Buildings 54 and 59 in TPY:

Table 3

Building	Maximum Allowable VOC/Solvent Emissions	Potential Acid Vapor Emissions
54	95.7	
59	0.5	0.1

Note: Hours of operation are 8760.

The permitted emissions are in compliance with all requirements of FAC Rules 17-2 and 17-4.

B. Air Quality Impacts

From the technical review of the application packages and supplementary material, an air quality analysis was not required.

V. Conclusion

The maximum allowable VOC/solvent emissions from Buildings 54 and 59 are in compliance with FAC Rules 17-2 and 17-4. Even though there are no emission standards for acid vapors, the

applicant has installed scrubber systems to control their emissions.

A system of material balance and sampling/analysis will be used to account for and verify pollutant emissions from each building and their scrubber systems.

The General and Specific Conditions listed in the proposed permits (attached) will ensure compliance with all applicable requirements of FAC Rules 17-2 and 17-4.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Harris Semiconductor
P. O. Box 883
Melbourne, Florida 32901

Permit Number: AC 05-147321
Expiration Date: April 30, 1990
County: Brevard
Latitude/Longitude: 28° 01' 20" N
80° 36' 10" W

Project: Building 54
Manufacturing Lab

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of hood type work stations for the manufacture of semiconductors in Building 54. Two 20,000 cfm and two 23,000 cfm horizontal cross-flow plastic saddle packed wet scrubbers, manufactured by Harrison, are installed to control VOC/solvent vapors. The building/source is located at the permittee's existing facility located on Palm Bay Road in the City of Palm Bay. The UTM coordinates are Zone 17, 538.7 km East and 3100.9 km North.

The source shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted in the General and Specific Conditions.

Attachments to be Incorporated:

1. Application to Construct Air Pollution Sources, DER Form 17-1.202(1), and Mr. James R. Kolanek's cover letter received March 3, 1988.
2. Mr. James R. Kolanek's letter with a processing fee received March 24, 1988.
3. Mr. C. H. Fancy's letter dated April 20, 1988.
4. Mr. James R. Kolanek's letter with attachments received May 20, 1988.
5. Mr. C. H. Fancy's letter dated June 6, 1988.
6. Mr. James R. Kolanek's letter and attachments received July 1, 1988.
7. Mr. James R. Kolanek's letter and addendum received September 12, 1988.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-147321
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-147321
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-147321
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17- 30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- () Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-147321
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum allowable VOC/solvent emissions from Building No. 54 shall be 95.7 tons per year.
2. The VOC/solvent vapor exhaust scrubber must be on during the working hours.
3. Annual operation shall be 8760 hours per year.
4. Objectionable odors shall not be allowed off plant property.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-147321
Expiration Date: April 30, 1990

SPECIFIC CONDITIONS:

4. An inspection and maintenance plan shall be submitted to the DER's Central Florida District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of VOC/solvent losses from leaks and equipment malfunctions.

5. By March 31 of each calendar year, an annual operating report shall be submitted to the DER's Central Florida District office demonstrating compliance with the VOC/solvent emissions limit for Building No. 54 and shall be determined by a material balance scheme, which includes the following:

- a) a beginning inventory of full containers, cylinders and storage tanks at the beginning of each calendar year;
- b) plus all purchased deliveries after the beginning inventory (verifiable by invoices);
- c) minus all quantities picked-up and shipped-off the premise after the beginning inventory (verifiable by invoices);
- d) minus all quantities deep well injected during the calendar year, justified by assumptions and established scrubber efficiencies; and,
- e) minus an ending inventory of full containers, cylinders, and storage tanks; and, should occur at the beginning of the following calendar year.

6. Each scrubber system's efficiency and potential VOC/solvent emissions shall be established by a sampling and analysis program, which includes:

- a) a sample shall be taken annually from each scrubber stack and analyzed using EPA Reference Method 25;
- b) the DER's Central Florida District office shall receive 15 days notice in writing prior to sampling; and,
- c) the report, summarizing the sampling results, shall be submitted to the DER's Central Florida District office within 45 days after the last test run is completed.

7. This permit will supercede all other permits previously issued on this source/Building No. 54.

8. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the material balance results, compliance test results and Certificate of Completion, to the DER's Central Florida District office 90 days prior to the expiration date of the construction permit. The permittee may

PERMITEE:
Harris Semiconductor

Permit Number: AC 05-147321
Expiration Number: April 30, 1990

SPECIFIC CONDITIONS:

continue to operate in compliance with all terms of the construction permit until its expiration date in accordance with FAC Rules 17-2 and 17-4.

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease pursuant to FAC Rule 17-4.

9. Building No. 54 is subject to the provisions of FAC Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-4.130: Plant Operation-Problems; and, 17-4.140: Reports.

10. Any modification pursuant to FAC Rule 17-2.100(119) shall be submitted to the DER's Central Florida District office and the Bureau of Air Quality Management office for approval.

Issued this _____ day of _____,
19____.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Dale Twachtmann, Secretary

ATTACHMENT 1
(Available Upon Request)

ATTACHMENT 2

FS-JRK-150-88

March 23, 1988

Mr. C. H. Fancy
Deputy Bureau Chief
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

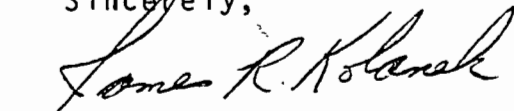
Subject: Harris Semiconductor
B-54 Consolidated Air Permit

Dear Mr. Fancy:

Enclosed please find check number 623607 in the amount of \$750.00. This check is the application fee to cover the subject air permit modification submitted with my letter of March 2, 1988.

If you should have any questions, please feel free to contact me at (305) 724-7467.

Sincerely,


J. R. Kolanek, Manager
Environmental Services

/pgc

END MAR 26 PM 10:27

1031

ATTACHMENT 3

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

April 20, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James R. Kolanek
Manager, Environmental Services
Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

Dear Mr. Kolanek:

Re: Completeness Review of AC 05-147321
Building 54 - Permit Consolidation

The Department received the above referenced application package and your letter dated March 2, 1988, on March 3, 1988. The appropriate fee was received on March 24, 1988. Based on a review of the application package, the package is deemed incomplete and the following information, including all assumptions, calculations and reference material, will have to be submitted to the DER's Bureau of Air Quality Management office so that the status can, again, be ascertained:

1. For the 13% nonproduction VOC reduction due to scrubber efficiency (see Attachment B of the submittal), what is the final disposition of the scrubber effluent? Of the VOC removed, is any of the VOC being reclaimed or recycled? In order to take credit for removal of VOC, it must be proven that the VOC is not released into the atmosphere and it can be quantified (distilling, reclaiming, recycling, etc.) through record keeping.
2. Based on No. 1, is it to be assumed that 87% of the VOC production and nonproduction emissions are being released into the atmosphere without control? If not, please explain.
3. Provide the facility's material balance report, which was to have been completed by this time.
4. Describe and provide how many heated and unheated reservoirs, sinks, or containers containing precursor and nonprecursor organic compounds are there in Building 54? How many of them have adequate covers to prevent release of organic compounds during non-use? What is the freeboard ratio of each?

Mr. James R. Kolanek
Page Two
April 20, 1988

5. Please explain how emissions of VOC are being released during nonproduction hours?
6. What is the current status of the cogeneration project, which was discussed during the February 17, 1988 meeting?

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,



C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: T. Sawicki, CFD
L. Hutker, P.E., Harris Semiconductor
B. Pittman, Esq.

ATTACHMENT 4
AVAILABLE UPON REQUEST

ATTACHMENT 5



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

June 6, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James R. Kolanek
Manager, Environmental Services
Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

Dear Mr. Kolanek:


Re: Completeness Review of AC 05-147321
Building 54 - Permit Consolidation

The Department received your letter dated May 13, 1988, as a response to the Department's letter dated April 20, 1988, requesting additional information. Based on the response, the application package is deemed incomplete and the following information, including all assumptions, reference material and calculations, will have to be submitted before the status can, again, be ascertained.

1. Submit the facility's material balance report, which will be used to categorize the facility according to its annual emissions and to assess the emissions from each building.

If there are any questions, please call Bruce Mitchell at (904)488-1344 or write to me at the above address.

Sincerely,


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: T. Sawicki, Central FL District
L. Hutker, P.E., Harris Semiconductor
B. Pittman, Esq., DER

ATTACHMENT 6

Available Upon Request

ATTACHMENT 7

*10:11 AM
9-9-88*

Purostat courier
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RECEIVED
SEP 12 1988
DER-BAQM

FS-JRK-036-89

September 9, 1988

Mr. Bruce Mitchell
State of Florida
Department of Environmental Regulations
Twin Tower Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Subject: Technical Evaluation and Preliminary
Determination AC05-147321 & AC05-150794

Dear Mr. Mitchell:

Per our conversation of August 19, 1988, we have reviewed the subject Technical Evaluation. In addition we have reviewed the methods utilized to calculate the projected air emissions from Building 54 and Building 59.

We are in agreement that the methods used to calculate the emissions should be consistent on each permit modification. As a result we have revised the calculation to established the annual emissions based on 8760 hours of production.

Please find enclosed a revised list of projected emissions from the Semiconductor facility on a by source basis. We would like these numbers incorporated in Tables 1 and 2 of the Technical Review.

If you should have any questions please call me at (407) 724-7467.

Sincerely,

James R. Kolanek
J. R. Kolanek, Manager
Environmental Services

/pgc

- cc: N. A. Baldisserotto
- D. R. Erdley
- L. R. Hutker
- R. R. Sands

*copied: Bruce Mitchell
Chuck Collins, CF Dept
CHF/BT*

ADDENDUM TO BUILDING 54 & 59 PERMIT APPLICATIONS

When solvent emission limits included in the building 54 permit application were initially estimated, the building's production and nonproduction hours were taken into account, and values were based on monitoring work performed during these time intervals. The building's projected emissions were based on an extrapolation derived from the following proportion:

$$\frac{A \text{ tpy}}{B \text{ tpy}} = \frac{C \text{ tpy}}{D \text{ tpy}}$$

where: A = maximum building emissions determined by EPA method 25-A monitoring.
B = maximum Semiconductor site emissions determined by EPA method 25-A monitoring.
C = building's projected emissions.
D = site's emission limit as discussed in the meeting between Semiconductor and FDER in February of 1988.

However, a problem arises with this method due to the potential for fluctuating production activity, as was the case when the methodology had to be altered to accommodate the increased production activity when applying for building 59's air permit. In order to establish consistency in estimating VOC emissions from Semiconductor's buildings, releases will be calculated based on the maximum potential production schedule for each building; 24 hours a day, 365 days a year (in other words, 8760 hours a year.) The total yearly VOC emissions listed in attachment represent maximum yearly atmospheric loading, which equates to 152.50 tons/yr.

Total projected VOC emissions for building 54 is 95.65 tons/year as opposed to 94.34 tons/year initially calculated and submitted in the application.

Total projected VOC emissions for building 59 is 0.50 tons/year instead of 0.57 tons/year initially extrapolated for this building.

Assumptions previously stated remain consistent:

-Emission values for F54S02 & F54S04 are assumed to be equal to F54S01 & F54S03, respectively. This is because each pair handle exhaust from a common duct.

-VOC values refer to all organic emissions including organic solvents.

-All data is corrected for 2 ppm background concentration of VOC's that is present in the ambient air.

-The F.I.D. acumulative emission figure is based on the maximum concentration observed during the monitoring timeframe.

SOLVENT SCRUBBERS--HARRIS SEMICONDUCTOR

BLDG	SCRUBBER#	PRODUCTION SCHEDULE (hrs/yr)	TOTAL YEARLY VOC EMISSIONS (ton/yr)	total by bldg
04	F04S01	8760	0.26	10.96
04	F04S02	8760	min	
04	F04S03	8760	1.93	
04	F04S08	8760	8.77	
51	F51S02	8760	11.39	33.29
51	F51S03	8760	3.72	
51	F51S04	8760	1.71	
51	F51S05	8760	16.47	
54	F54S01	8760	15.24	95.65
54	F54S02	8760	15.24	
54	F54S03	8760	32.59	
54	F54S04	8760	32.59	
57	F57S01	8760	1.66	1.66
58	F58S01	8760	2.82	3.24
58	F58S02	8760	0.41	
59	F59S03	8760	0.50	0.50
60	F60S01	8760	min	min
61	F61S01	8760	0.25	0.25
62	F62S02	8760	0.83	0.83
63	F63S02	8760	2.02	6.14
63	F63S03	8760	4.12	

			152.50	

* When multiple testing was performed, values are indicative of highest VOC concentrations observed.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Harris Semiconductor
P. O. Box 883
Melbourne, Florida 32901

Permit Number: AC 05-150794
Expiration Date: April 30, 1990
County: Brevard
Latitude/Longitude: 28° 01' 20" N
80° 36' 10" W

Project: Building 59
Manufacturing Lab

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (FAC) Rules 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

For the permitting of hood type work stations for the manufacture of semiconductors in Building 59. A 24,000 cfm vertical counter-current flow wet scrubber, using polypropylene packing, and with a mist eliminator, manufactured by Beverly Pacific, is installed to control VOC/solvent vapors. A 40,000 cfm horizontal cross-flow wet scrubber, using polypropylene packing, and with a mist eliminator, manufactured by Beverly Pacific, is installed to control acid vapors. The building/source is located at the permittee's existing facility located on Palm Bay Road in the City of Palm Bay. The UTM coordinates are Zone 17, 538.7 km East and 3100.9 km North.

The source shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted in the General and Specific Conditions.

Attachments to be Incorporated:

1. Application to Construct Air Pollution Sources, DER Form 17-1.202(1), along with the processing fee, and Mr. James R. Kolanek's cover letter received June 10, 1988.
2. Mr. James R. Kolanek's letter and attachments received July 1, 1988.
3. Mr. James R. Kolanek's letter and addendum received September 12, 1988.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-150794
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-150794
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-150794
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17- 30.30, as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- () Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-150794
Expiration Date: April 30, 1990

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum allowable VOC/solvent emissions from Building No. 59 shall be 0.50 tons per year. The projected potential acid vapor emissions are 0.1 tons per year.
2. The VOC/solvent and acid vapor exhaust scrubbers must be on during the working hours.
3. Annual operation shall be 8760 hours per year.
4. Objectionable odors shall not be allowed off plant property.

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-150794
Expiration Date: April 30, 1990

SPECIFIC CONDITIONS:

4. An inspection and maintenance plan shall be submitted to the DER's Central Florida District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of VOC/solvent losses from leaks and equipment malfunctions.

5. By March 31 of each calendar year, an annual operating report shall be submitted to the DER's Central Florida District office demonstrating compliance with the VOC/solvent emissions limit for Building No. 59 and shall be determined by a material balance scheme, which includes the following:

- a) a beginning inventory of full containers, cylinders and storage tanks at the beginning of each calendar year;
- b) plus all purchased deliveries after the beginning inventory (verifiable by invoices);
- c) minus all quantities picked-up and shipped-off the premise after the beginning inventory (verifiable by invoices);
- d) minus all quantities deep well injected during the calendar year, justified by assumptions and established scrubber efficiencies; and,
- e) minus an ending inventory of full containers, cylinders, and storage tanks; and, should occur at the beginning of the following calendar year.

6. Each scrubber system's efficiency and potential VOC/solvent and acid emissions shall be established by a sampling and analysis program, which includes:

- a) a sample shall be taken annually from each scrubber stack and analyzed using EPA Reference Method 25;
- b) the DER's Central Florida District office shall receive 15 days notice in writing prior to sampling; and,
- c) the report, summarizing the sampling results, shall be submitted to the DER's Central Florida District office within 45 days after the last test run is completed.

7. This permit will supercede all other permits previously issued on this source/Building No. 59.

8. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit an application for an operating permit, including the application fee, along with the material balance results, compliance test results and Certificate of Completion, to the DER's Central Florida District office 90 days prior to the expiration date of the construction permit. The permittee may

PERMITEE:
Harris Semiconductor

Permit Number: AC 05-150794
Expiration Number: April 30, 1990

SPECIFIC CONDITIONS:

continue to operate in compliance with all terms of the construction permit until its expiration date in accordance with FAC Rules 17-2 and 17-4.

If the construction permit expires prior to the permittee filing an application for a permit to operate, then all activities at the project must cease pursuant to FAC Rule 17-4.

9. Building No. 59 is subject to the provisions of FAC Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; 17-4.130: Plant Operation-Problems; and, 17-4.140: Reports.

10. Any modification pursuant to FAC Rule 17-2.100(119) shall be submitted to the DER's Central Florida District office and the Bureau of Air Quality Management office for approval.

Issued this _____ day of _____,
19____.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Dale Twachtmann, Secretary

ATTACHMENT I

(Available Upon Request)

ATTACHMENT 2

Available Upon Request.

ATTACHMENT 3

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HARRIS

FS-JRK-036-89

September 9, 1988

RECEIVED

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RECEIVED
DER-BAQM

SEP 12 1988

DER-BAQM

Mr. Bruce Mitchell
State of Florida
Department of Environmental Regulations
Twin Tower Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Subject: Technical Evaluation and Preliminary
Determination AC05-147321 & AC05-150794

Dear Mr. Mitchell:

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If you should have any questions please call me at (407) 724-7467.

Sincerely,

James R. Kolanek
J. R. Kolanek, Manager
Environmental Services

/pgc

- cc: N. A. Baldisserotto
- D. R. Erdley
- L. R. Hutker
- R. R. Sands

copied: *Bruce Mitchell*
Chuck Collins, CF Dept.
CHF/BT

ADDENDUM TO BUILDING 54 & 59 PERMIT APPLICATIONS

When solvent emission limits included in the building 54 permit application were initially estimated, the building's production and nonproduction hours were taken into account, and values were based on monitoring work performed during these time intervals. The building's projected emissions were based on an extrapolation derived from the following proportion:

$$\frac{A \text{ tpy}}{B \text{ tpy}} = \frac{C \text{ tpy}}{D \text{ tpy}}$$

where: A = maximum building emissions determined by EPA method 25-A monitoring.
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However, a problem arises with this method due to the potential for fluctuating production activity, as was the case when the methodology had to be altered to accommodate the increased production activity when applying for building 59's air permit. In order to establish consistency in estimating VOC emissions from Semiconductor's buildings, releases will be calculated based on the maximum potential production schedule for each building; 24 hours a day, 365 days a year (in other words, 8760 hours a year.) The total yearly VOC emissions listed in attachment represent maximum yearly atmospheric loading, which equates to 152.50 tons/yr.

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-All data is corrected for 2 ppm background concentration of VOC's that is present in the ambient air.

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WALVENT SCRUBBERS--HARRIS SEMICONDUCTOR

BLDG	SCRUBBER#	PRODUCTION SCHEDULE (hrs/yr)	TOTAL YEARLY VOC EMISSIONS (ton/yr)	total by bldg
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59	F59S03	8760	0.50	0.50
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			152.50	

* When multiple testing was performed, values are indicative of highest VOC concentrations observed.