P 938 762 746

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to L. R. Hutker Director, Facilities Dept.	
Street and No. Harris Semiconductor	
P.O., State and ZIP Code P.O. Box 883 Melbourne, FL 32901	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date mailed: 11/13/89 AC 05-168460	

PS Form 3800, June 1985

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:	4. Article Number
L. R. Hutker Director, Facilities Dept. Harris Semiconductor P.O. Box 883 Melbourne, FL 32901	P 938 762 746 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Willie Gipson Harris Semiconductor	
7. Date of Delivery 11-16-89	

MELBOURNE, FL NOV 16 1989 USA

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

File Copy

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

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. L. R. Hutker
Director, Facilities Department
Harris Semiconductor
P. O. Box 883
Melbourne, Florida 32901

November 9, 1989

Enclosed is construction permit No. AC 05-168460 for Harris Semiconductor to consolidate permits previously issued for Building No. 60 at Harris Semiconductor's existing facility in Palm Bay, Brevard County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any party to this permit has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for H. L. Thomas

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copy furnished to:

C. Collins, Central District
N. Baldisserotto, HS
Reading File
Bruce Mitchell } 11-13-89 RBR

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 11-13-89.

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.

Kim Doben 11-13-89
Clerk Date

Final Determination

Harris Semiconductor
Brevard County
Palm Bay, Florida

Construction Permit Number:
AC 05-168460

Florida Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

November 6, 1989

Final Determination

The construction permit application has been reviewed by the Department. Public Notice of the Department's Intent to Issue was published in the Florida Today Newspaper on October 11, 1989. The Technical Evaluation and Preliminary Determination were available for public inspection at the DER's Central District and Bureau of Air Regulation.

There were no comments received on the proposed action. Therefore, it is recommended that the proposed construction permit be issued as drafted.

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

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

Permit Number: AC 05-168460
Expiration Date: June 30, 1990
County: Brevard
Latitude/Longitude: 28° 01' 20" N
80° 36' 10" W
Project: Building 60

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 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 Building 60, which is a source whose primary operations is the manufacture of semiconductor photo masks. The scrubber control system is:

o F60SO1: a Harrison 24,500 cfm horizontal cross-flow mist eliminator using polypropylene plastic saddle packing for caustic and corrosive vapor removal; Model No. HF-245.

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 Classification Codes are: Major Group 36

o Cold Solvent Cleaning/ Stripping	4-01-003-99	Tons VOC/Solvent Consumed

The source shall be constructed 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. L. R. Hutker's cover letter received August 3, 1989.
2. Technical Evaluation and Preliminary Determination dated September 27, 1989.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

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. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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.

GENERAL CONDITIONS:

6. The permittee shall 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor 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 provide the Department with the following information:

a. a description of and cause of non-compliance; and

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

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 for 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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

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 dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. 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 corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum allowable VOC/solvent emissions from Building No. 60 shall be 0.75 tons per year.

2. The VOC/solvent vapor exhaust scrubber must be on and operating properly during working hours.

3. Permitted hours of operation are 8760.

4. Objectionable odors shall not be allowed off plant property.

5. An inspection and maintenance plan shall be submitted to the DER's Central 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.

6. By March 31 of each calendar year, an annual operating report shall be submitted to the DER's Central District office demonstrating compliance with the VOC/solvent emissions limit for Building No. 60. The emissions shall be determined by a material balance scheme, verifiable on a monthly basis, and shall include 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);

SPECIFIC CONDITIONS:

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.

7. The 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 Methods 25 or 25A, 40 CFR 60, Appendix A;

b) the DER's Central 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 District office within 45 days after the last test run is completed.

8. This permit will supercede all other permits previously issued on this source/Building No. 60.

9. The source/Building No. 60 is subject to all applicable provisions of F.A.C. Chapters 17-2 and 17-4.

10. Projected potential acid emissions are 0.3 TPY.

11. Building No. 60 is subject to the provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-4.130: Plant Operation - Problems.

12. Any modification pursuant to F.A.C. Rule 17-2.100(119), Modification, shall be submitted to the DER's Central District office and the Bureau of Air Regulation office for approval.

13. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

PERMITTEE:
Harris Semiconductor

Permit Number: AC 05-168460
Expiration Date: June 30, 1990

SPECIFIC CONDITIONS:

14. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 7 day
of November, 1989

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Dale Twachtmann

Dale Twachtmann, Secretary

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee
To: _____ Location: _____
To: _____ Location: _____
To: _____ Location: _____
From: _____ Date: _____

Interoffice Memorandum

TO: Dale Twachtmann

FROM: for Steve Smallwood John C Brown Jr

DATE: November 6, 1989

SUBJ: Approval of Construction Permit No. AC 05-168460
Harris Semiconductor

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation for the above mentioned Corporation to consolidate permits previously issued for Building No. 60, which is a source involved with the manufacture of semiconductor photo masks at Harris Semiconductor's existing facility in Palm Bay, Brevard County, Florida.

No comments were submitted on the Department's Intent to Issue the permit.

Day 90, after which the permit will be issued by default, is November 30, 1989.

I recommend your approval and signature.

attachment

SS/BM/t

Check Sheet

Company Name: HARRIS SEMICONDUCTOR
Permit Number: AC 05-168460
PSD Number:
Permit Engineer:

Application:

- [x] Initial Application
  - [ ] Incompleteness Letters
  - [ ] Responses
  - [ ] Waiver of Department Action
  - [ ] Department Response
  - [ ] Other

Cross References:

- [ ]
- [ ]
- [ ]

Intent:

- [x] Intent to Issue
- [x] Notice of Intent to Issue
- [x] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit
- Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] Other
- [x] Proof of Publication
  - [ ] Petitions - (Related to extensions, hearings, etc.)
  - [ ] Waiver of Department Action
  - [ ] Other

Final Determination:

- [x] Final Determination
- [x] Signed Permit
- [ ] BACT Determination
  - [ ] Other

Post Permit Correspondence:

- [ ] Extensions/Amendments/Modifications
- [x] Other

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

August 29, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Kent Smith, Environmental Manager
Harris Semiconductor
P. O. Box 883
Melbourne, Florida 32902-0883

Dear Mr. Smith:

Re: Amendment of Construction Permits

AC 05-165757	Bldg. 04
-157786	51
-147321	54
-164544	55
-161706	57
-159484	58
-150794	59
-168460	60
-157787	62
-158237	63

The Department has reviewed Constantine Triantafyllidis' letter received July 19, 1990, requesting that the above referenced air construction permits' expiration dates be extended. The Department is in agreement with the request and the following will be changed and added:

Expiration Date:

From: December 31, 1990
To: June 30, 1991

Attachment to be Incorporated:

o Constantine Triantafyllidis' letter received July 19, 1990.

This letter must be attached to your air construction permits, as referenced above, and shall become a part of the permits.

Sincerely,

for STEVE SMALLWOOD, P.E.
Director
Division of Air Resources Management

SS/BM/plm

Attachment

c: C. Collins, Central Dist.
C. Triantafyllidis, HS

HARRIS SEMICONDUCTOR
HARRIS · RCA · GE · INTERSIL

July 17, 1990

Mr. Claire Fancy
Bureau Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

JUL 19 1990
DER-BAQM

Subject: Extension of Consolidated Construction Permits
Harris Semiconductor, Melbourne

Permit Nos.	Bldg.
AC 05-165757	04
AC 05-157786	51
AC 05-147321	54
AC 05-164544	55
AC 05-161706	57
AC 05-159484	58
AC 05-150794	59
AC 05-168460	60
AC 05-157787	62
AC 05-158237	63

Dear Mr. Fancy:

This letter is submitted, on behalf of Harris Semiconductor Sector, Inc. ("Semiconductor"), to request an extension of the expiration dates of the above-referenced permits until March 31, 1991. We believe the extension is justified for the following reasons. The current specific conditions of these permits require the submission of applications for operating permits by the end of September. As you are aware, over the last several months we have been working with the Department to reduce the potential for Semiconductor's operations to contribute to odors in the areas adjacent to the facility. It is possible that some of the projects we currently have underway to accomplish this objective may not be completed by the end of September. The stack extensions associated with the Building 54 operations should be completed by the end of September. However, another major element of our odor reduction efforts which consists of a facility-wide substitution of certain phenolic process chemicals with non-phenolic ones, where reasonably possible, may not be completed by October 1st. We believe this program is important because these non-phenolic compounds should prove to be much less odoriferous in nature.

This program is considerably more complex and difficult to implement than the stack extensions. Due to the sophisticated and sensitive nature of the integrated circuits manufactured at the facility, in many instances, a substitution of process chemicals requires customer (which in many instances is the U.S. Government) approval.

The whole project, including necessary customer approval and the actual chemical substitutions, may take several months or more. We believe, from the Department's and Semiconductor's perspective, it would be better to complete this process prior to submission of the applications for operating permits. It should be noted that some chemical changes may not be possible if the U.S. Government objects to the substitution. Should the Department have any questions or require any additional information, please contact our office at 407/729-5301.

Yours sincerely,

Constantine Triantafyllidis

Constantine Triantafyllidis
Environmental Engineer
Environmental Services

cc: T. Sawicki
B. Mitcell 7/24/90
C. Collins

E/929/90

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy

DATE: August 29, 1990

SUBJ: Amendment of Construction Permits
Harris Semiconductor

Attached for your approval and signature is a letter that will amend ten construction permits issued to the above mentioned company to extend their expiration dates. There is no controversy regarding this action.

I recommend your approval and signature.

CF/BM/plm

CAPE PUBLICATIONS, INC.

The Times
Published Weekly on Wednesday

THE TRIBUNE
Published Weekly on Wednesday

RECEIVED

OCT 16 1989

DER - BAQM

FLORIDA TODAY
Published Daily

STATE OF FLORIDA
COUNTY OF BREVARD

Before the undersigned authority personally appeared **Linda L. Spicer** who on oath says that he/she is **Legal Advertising Clerk** of the **FLORIDA TODAY**, a newspaper published in Brevard County, Florida; that the attached copy of advertising being a Legal Notice in the matter of permits for Building No. 60; semiconductor photo masks in the Court was published in the **FLORIDA TODAY NEWSPAPER** in the issues of October 11, 1989

Affiant further says that the said **FLORIDA TODAY NEWSPAPER** is a newspaper published in said Brevard County, Florida and that the said newspaper has heretofore been continuously published in said Brevard County, Florida regularly as stated above, and has been entered as second class mail matter at the post office in **COCOA**, said Brevard County, Florida for a period of one year next preceeding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in said newspaper.

Linda L. Spicer

Sworn and subscribed to before me this 11th day of October A.D., 19 89

Notary Public
State of Florida at Large
My Commission Expires March 19, 1991

cc: B. Mitchell
C. Collins

State of Florida
Department of
Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Harris Semiconductor, Post Office Box 883, Melbourne, Florida 32901, to consolidate multiple permits previously issued for Building No. 60, which is a source involved with the manufacture of semiconductor photo masks. The proposed project will occur at the applicant's existing facility located in Brevard County, Florida. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5/207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Central 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.
TO100224-1T-10/11, 1989,
Wednesday

FLORIDA TODAY/USA TODAY
GANNETT PLAZA
P.O. BOX 363000
MELBOURNE, FL 32936

±±

RECEIVED
OCT 16 1989
DER-BAQM

Department of Enviromental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241
Attn: C. H. Fancy,P.E.

P 938 762 697

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. L. R. Hutker, Harris Semiconductor	
Street and No. P.O. Box 883	
P.O., State and ZIP Code Melbourne, FL 32901	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 10-2-89 Permit: AC 05-168460	

PS Form 3800, June 1985

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to: Mr. L. R. Hutker Director, Facilities Department Harris Semiconductor P. O. Box 883 Melbourne, FL 32901	4. Article Number P 938 762 697
	Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Harris Semiconductor	
7. Date of Delivery	

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-885 **DOMESTIC RETURN RECEIPT**

File Copy

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

September 27, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. L. R. Hutker
Director, Facilities Department
Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

Dear Mr. Hutker:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for Harris Semiconductor to consolidate multiple permits previously issued for Building No. 60, which is a source involved with the manufacture of semiconductor photo masks.

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 Regulation.

Sincerely,

C. H. Fancy, P.E.
Bureau of Air Regulation

CHF/BM/kt

Attachments

cc: C. Collins, C District
N. Baldisserotto, HS
Reading File
Bruce Mitchell } 9-29-89 BBM

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

DER File No. AC 05-168460

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application 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 August 3, 1989, to the Department of Environmental Regulation for a permit to consolidate multiple permits previously issued for Building No. 60, which is a source involved with the manufacture of semiconductor photo masks. The proposed project will occur at the applicant's existing facility located in 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 permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit 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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such

person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Bureau of Air Regulation

Copies furnished to:

C. Collins, C District
N. Baldisserotto, HS

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 10/2/89.

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.

Clerk

10/2/89
Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Harris Semiconductor, Post Office Box 883, Melbourne, Florida 32901, to consolidate multiple permits previously issued for Building No. 60, which is a source involved with the manufacture of semiconductor photo masks. The proposed project will occur at the applicant's existing facility located in Brevard County, Florida. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

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

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Central 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 Number:
AC 05-168460

Florida Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

September 27, 1989

I. Application

A. Applicant

Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

B. Project and Location

The applicant has applied for a construction permit for Building No. 60 in order to consolidate multiple permits previously issued for this source/building.

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 60

The primary operation in Building 60 is the manufacture of semiconductor photo masks. First, commercially prepared mask blanks are patterned by computer controlled electron beams in a high vacuum environment. After inspection, the masks are coated with photoresist ('resist'), and are sent to either of two process areas where they are developed. After the exposed chrome on the masks is acid etched, they are sent for patterning through the use of ultraviolet light. Next, the patterned masks are, again, developed, etched and inspected. The resist is stripped off of the finished plate and the plate is inspected for defects. Some of the masks are sent for pellicle mounting and surface contamination inspection. In the Chemical Mix area, in-house formulated developers and etches are mixed and filtered. Exhausted equipment includes wet stations, developers, etchers, coaters, vacuum pumps, and chemical cabinets.

Harrison scrubber number F60S01 treats exhaust resulting from the above mentioned equipment and processes. The scrubber is located on the east side of the building at ground level.

2. General

A material balance scheme will be used to account for the annual VOC/solvent emissions released into the atmosphere by the building/source and facility.

The Standard Industrial Classification Codes are:

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

The Source Classification Codes are: Major Group 36

o Cold Solvent Cleaning/Stripping

o Building 60 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 (F.A.C.) Chapters 17-2 and 17-4.

The application package was deemed complete on August 3, 1989.

The existing facility is located in an area designated attainment for all pollutants.

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

The following table presents the projected potential VOC/solvent and acid emissions from Building No. 60 in tons per year (TPY):

Table 1

Source	Potential Pollutant Emissions (TPY)	
	VOC/Solvent	Acid
Building 60		
o F60S01	0.75	0.34

Note: Annual hours of operation at 8760.

The following table presents the projected potential VOC/solvent emissions from Building 60 and the entire facility:

Table 2

Building	Potential VOC/solvent Emissions (TPY)
4	10.96
51	33.29
54	95.65
55	0.28 (fugitive)
57	1.66
58	3.24
59	0.50
60	0.75
61	0.25
62	0.83
63	6.14
Total:	153.53

Note: Annual hours of operation at 8760.

Since the potential emissions are less than 250 TPY for the facility, the potential emissions projected from Building 60 will be reviewed pursuant to F.A.C. Rule 17-2.520, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements.

Since there is no specific emission limiting standard contained in F.A.C. Rule 17-2.600 nor is there any standards of performance for new stationary sources contained in F.A.C. Rule 17-2.660, the source/Building 60 will be permitted in accordance with F.A.C. Rule 17-2.620, General Pollutant Emission Limiting Standards.

In F.A.C. 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 F.A.C. 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 F.A.C. Rule 17-2.100(132).

The building operations/source is subject to the provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-4.130: Plant Operation - Problems.

III. Summary of Emissions

A. Emission Limitations

The regulated pollutant emissions from this building/source are VOC/solvents in accordance with F.A.C. Rule 17-2.620.

Specific acid solutions and other chemicals are also being processed at the building. There are no specific emission limiting standards for these specific acids and chemicals. However, the vapors will be scrubbed to reduce emissions.

The following table presents the maximum allowable VOC/solvent emissions from Building 60 in TPY:

Table 3

Building	Maximum Allowable VOC/Solvent Emissions (TPY)
60	0.75

Note: Annual hours of operation at 8760.

The permitted emissions are in compliance with all requirements of F.A.C. Chapters 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

A system of material balance will be used to account for and verify pollutant emissions from the facility and each building/source.

Based on the information provided by Harris Semiconductor, the Department has reasonable assurance that the consolidation of multiple permits previously issued for this source/building, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.

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

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

Permit Number: AC 05-168460
Expiration Date: June 30, 1990
County: Brevard
Latitude/Longitude: 28° 01' 20" N
80° 36' 10" W
Project: Building 60

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 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 Building 60, which is a source whose primary operations is the manufacture of semiconductor photo masks. The scrubber control system is:

o F60SO1: a Harrison 24,500 cfm horizontal cross-flow mist eliminator using polypropylene plastic saddle packing for caustic and corrosive vapor removal; Model No. HF-245.

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 Classification Codes are: Major Group 36

o Cold Solvent Cleaning/ Stripping	4-01-003-99	Tons VOC/Solvent Consumed

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. L. R. Hutker's cover letter received August 3, 1989.
2. Technical Evaluation and Preliminary Determination dated September 27, 1989.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

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. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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.

GENERAL CONDITIONS:

6. The permittee shall 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor 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 provide the Department with the following information:

a. a description of and cause of non-compliance; and

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

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 for 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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

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 dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. 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 corrected promptly.

SPECIFIC CONDITIONS:

1. The maximum allowable VOC/solvent emissions from Building No. 60 shall be 0.75 tons per year.

2. The VOC/solvent vapor exhaust scrubber must be on during working hours.

3. Permitted hours of operation are 8760.

4. Objectionable odors shall not be allowed off plant property.

5. An inspection and maintenance plan shall be submitted to the DER's Central 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.

6. By March 31 of each calendar year, an annual operating report shall be submitted to the DER's Central District office demonstrating compliance with the VOC/solvent emissions limit for Building No. 60. The emissions shall be determined by a material balance scheme, verifiable on a monthly basis, and shall include 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);

SPECIFIC CONDITIONS:

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.

7. The 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 Methods 25 or 25A, 40 CFR 60, Appendix A;

b) the DER's Central 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 District office within 45 days after the last test run is completed.

8. This permit will supercede all other permits previously issued on this source/Building No. 60.

9. The source/Building No. 60 is subject to all applicable provisions of F.A.C. Chapters 17-2 and 17-4.

10. Projected potential acid emissions are 0.3 TPY.

11. Building No. 60 is subject to the provisions of F.A.C. Rules 17-2.240: Circumvention; 17-2.250: Excess Emissions; and, 17-4.130: Plant Operation - Problems.

12. Any modification pursuant to F.A.C. Rule 17-2.100(119), Modification, shall be submitted to the DER's Central District office and the Bureau of Air Regulation office for approval.

13. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

SPECIFIC CONDITIONS:

14. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this _____ day

of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Dale Twachtmann, Secretary

9-25-89

BT
CHF,

For your review,
edit, seal, etc...
Hampton
Bam

HARRIS

RECEIVED
DER - MAIL ROOM
1989 AUG -3 PM 1:57

July 18, 1989

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

Reference: HARRIS SEMICONDUCTOR
B-60 Consolidated Air Permit

Dear Mr. Fancy:

On February 17, 1988, representatives from Harris and the Florida DER met in Orlando to discuss the status of air permits at Harris Semiconductor's facility in Palm Bay. At that meeting it was agreed that Harris would submit modified air permits. The purpose of the permit modifications was as follows:

1. Consolidate permits on a by building basis to reduce the existing number of permits.

2. To accurately quantify the current air emissions.

Enclosed is the modified permit application for Semiconductor's Building 60.

If you should have any questions about the enclosed information, please feel free to contact me at (407) 724-7229.

Sincerely,

L. R. Hutker

L. R. Hutker, Director
Facilities Department

/nab

cc: A. T. Sawicki
L. R. Hutker
D. R. Erdley
R. R. Sands
Bruce Mitchell 8-8-89 BRM

1031

HARRIS

FS-LRH-161-89

June 19, 1989

TO WHOM IT MAY CONCERN:

I, Jon E. Cornell, Senior Vice President and Sector Executive of HARRIS SEMICONDUCTOR, a division of HARRIS CORPORATION, do hereby authorize Lawrence R. Hutker, Director of Facility Support of said HARRIS SEMICONDUCTOR, to execute applications for Pollution Source permits to the Department of Environmental Regulation of the State of Florida, and the United States Environmental Protection Agency. Mr. Hutker is further authorized to sign monitoring reports and execute other correspondence related to these permits.

Jon E. Cornell
Senior Vice President and Sector Executive
HARRIS SEMICONDUCTOR

/pgc

DEPARTMENT OF ENVIRONMENTAL REGULATION

$200 pd. 8-3-89 Receipt # 117644

WIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

AC 05-168460

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Stationary [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: Harris Semiconductor COUNTY: Brevard

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Bldg 60-Photomask Fab

SOURCE LOCATION: Street Palm Bay Road City Palm Bay

UTM: East 17-538700 North 17-3100900

Latitude 28 ° 01 ' 20 "N Longitude 80 ° 36 ' 10 "W

APPLICANT NAME AND TITLE: Lawrence R. Hutker, Director - Facilities Department

APPLICANT ADDRESS: P.O. Box 883, Melbourne, Fl 32901

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Harris Semiconductor

I certify that the statements made in this application for a modified permit are true, correct and complete to the best of my knowledge and belief. Furthe I agree to maintain and operate the pollution control source and pollution contr facilities in such a manner as to comply with the provision of Chapter 403, Flori Statutes, and all the rules and regulations of the department and revisions thereof. also understand that a permit, if granted by the department, will be non-transferab and I will promptly notify the department upon sale or legal transfer of the permitt establishment.

*Attach letter of authorization

Signed: Lawrence R. Hutker

Lawrence R. Hutker, Director-Facilities Dp
Name and Title (Please Type)

Date: 7/19/89 Telephone No. (407) 729-4655

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project ha been designed/examined by me and found to be in conformity with modern engineeri principles applicable to the treatment and disposal of pollutants characterized in t permit application. There is reasonable assurance, in my professional judgment, th

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Lawrence R Hutker

Lawrence R. Hutker
Name (Please Type)

Harris Semiconductor
Company Name (Please Type)

P.O. Box 883, Melbourne, Florida 32901
Mailing Address (Please Type)

Florida Registration No. 35972 Date: 7/19/89 Telephone No. (407) 729-4655

SECTION II: GENERAL PROJECT INFORMATION

. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

This is a modification and consolidation of existing air permits.

. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction N/A Completion of Construction

. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

N/A

. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

DER permit no. AO 05-117084; issued May 20, 1986; expires 5/22/91.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:_____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significamt Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
---SEE ATTACHMENT C ----				

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): not applicable

2. Product Weight (lbs/hr): not applicable

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
---SEE ATTACHMENT B ----							

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

J. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
---SEE ATTACHMENT D ---				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Waste water from air scrubbers is discharged to on-site Waste Water Treatment Plant--discharge to deepwell under UIC - Permit #UC05-126519.

--------SEE ATTACHMENT D--------

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

not applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy [2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, inetall in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1] Explain method of determining efficiency.
[2] Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^{2}* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

HARRIS SEMICONDUCTOR

AIR PERMIT - BUILDING 60

ATTACHMENT A

PROCESS DESCRIPTION

PROCESS DESCRIPTION - BUILDING 60

The primary operation in building 60 is the manufacture of semiconductor photo masks. In the Mebes area, commercially prepared mask blanks are patterned by computer controlled electron beams in a high vacuum environment. After inspection, the masks are coated with photoresist ('resist'), and are sent to either the PBS Process area or the AZ Process area where they are developed. After the exposed chrome on the masks is acid etched, they are sent to the Optical Step area or the Contact Print area for patterning through the use of ultraviolet light. Next, the patterned masks are sent to the Optical 1XPA QA area, where they are again developed, etched and inspected. The resist is stripped off of the finished plate and the plate is inspected for defects. Some of the masks are sent to the Horiba area for pellicle mounting and surface contamination inspection. In the Chemical Mix area, in-house formulated developers and etches are mixed and filtered. Exhausted equipment includes wet stations, developers, etchers, coaters, vacuum pumps, and chemical cabinets.

Harrison scrubber number F60S01 treats exhaust resulting from the above mentioned equipment and processes. For additional information on this system, see attachment D.) The scrubber is located on the east side of the building at ground level (see location maps in attachment E.)

HARRIS SEMICONDUCTOR

AIR PERMIT - BUILDING 60

ATTACHMENT B

AIR EMISSIONS

SOLVENT MONITORING--BUILDING 60

Solvent monitoring work was performed on the building 60 scrubber system F60S01 during November of 1987, and December of 1988. The tests conducted were EPA Method 25A (flame ionization detection) and EPA Method TO-1 (Tenax adsorption and GC/MS analysis.) The test results are included in this application.

FID test results revealed that total accumulative monitored VOC emissions for the building were 0.745 tons/year expressed as propane. This figure is based on a 'worse case' hypothetical production schedule of 8760 hours a year. The following assumptions were made regarding monitoring work on this building:

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

-1987 data was corrected for 2 ppm background noise; 1988 data was corrected for 1.3 ppm background noise.

EPA METHOD 25-A (F.I.D. ANALYSIS) BUILDING 60
SCRUBBER NUMBER F60S01
EMISSIONS DURING PRODUCTION HOURS

TEST DATE	VOC EMISSIONS (TON/YR)
11/19/87.....	MIN
12/19/88.....	0.745

NOTES: MIN -- LESS THAN 0.2 PPM DETECTED

EMISSION FIGURES ARE BASED ON 'WORSE CASE' OPERATING SCHEDULE OF 8760 HOURS/YEAR. ACTUAL OPERATING HOURS MAY BE LESS.

TOTAL PROJECTED VOC EMISSIONS FROM BLDG 60 = 0.745 TONS/YEAR

NOVEMBER 1987 MASS EMISSIONS
EPA METHOD 624 GAS CHROMATOGRAPHY/MASS SPECTROSCOPY

	SCRUBBER # F60S01
ACETONE (LB/HR)	<D.L.
XYLENES (LB/HR)	<D.L.
ETHYL BENZENE (LB/HR)	<D.L.
1,2-DICHLOROBENZENE (LB/HR)	<D.L.
1,1-DICHLOROETHENE (LB/HR)	<D.L.
TETRACHLOROETHENE (LB/HR)	<D.L.
1,1,1-TRICHLOROETHANE	<D.L.

NOTE: <D.L. -- Less Than Detectable Limits

ACID MONITORING--BUILDING 60

Monitoring was performed on the building 60 scrubber F60S01 in December of 1988. Samples were collected using modified EPA method 8 sampling train. The impinger medium consisted of a 0.1 N sodium hydroxide solution. The analytical methodology utilized to determine the ions of highest concentration is as follows:

Chloride ion--EPA Method 325.3
Fluoride ion--EPA Method 340.2
Nitrate, phosphite, and sulfate ions--ion chromatography

All results were in pounds per hour as "X", where "X" represents the acid compound present in highest concentration.

The test results revealed that the total accumulative monitored acid emissions for the building were 0.342 tons/year expressed as hydrochloric, hydrofluoric, nitric, phosphoric and sulfuric acids. This figure is based on a hypothetical production schedule of 8760 hours a year. The monitoring was performed over an 8 hour time interval when the full production was occurring.

When a resulting acid concentration was expressed as a "less than 'y' " value, where 'y' represents the lowest detectable limit possible using the analytical methodology employed, acid emissions were taken to be equal to this 'y' limit value.

RESULTS OF ACID MONITORING--BUILDING 60

PERFORMED ON SCRUBBER OUTLET
IN DECEMBER OF 1988

Scrub #		HCl	HF	Nitric Acid	Phosphoric Acid	Sulfuric Acid	TOTAL (TON/YR)
F60S01	(LB/HR)	0.049	0.001	0.005	0.015	0.008	0.078
	(TON/YR)	0.215	0.004	0.022	0.066	0.035	0.342

TOTAL EMISSIONS FROM SCRUBBER OUTLET = 0.342 TONS/YEAR

HARRIS SEMICONDUCTOR

AIR PERMIT - - BUILDING 60

ATTACHMENT C

RAW MATERIALS AND CHEMICALS

BUILDING 60
CONSOLIDATED AIR PERMIT APPLICATION
LIST OF CHEMICALS

ACETIC ACID
AMMONIUM CHLORIDE
AMMONIUM HYDROXIDE
AMMONIUM PERSULFATE
BROMOCRESOL GREEN
CERIC AMMONIUM NITRATE
CHROMIC ACID
CHROMIUM TRIOXIDE
CRESOL
ETHOXYLATED TALL OIL FATTY ACIDS
FERROUS CHLORIDE
GLYCOLIC ACID
HEXACARBONYL CHROMIUM
HYDROCHLORIC ACID
HYDROFLUORIC ACID
HYDROGEN PEROXIDE
HYDROQUINONE
NITRIC ACID
PHOSPHORIC ACID
POTASSIUM HYDROXIDE
SODIUM CARBONATE
SODIUM HYDROXIDE
SODIUM HYPOCHLORITE
SULFURIC ACID
SURFACTANT

BUILDING 60
CONSOLIDATED AIR PERMIT APPLICATION
LIST OF SOLVENTS

1,1,1 TRICHLOROETHANE
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE
2-METHYL-4-ISOTHIAZOLIN-3-ONE
2-PENTANONE
5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE
5-METHYL-2-HEXANONE
ACETONE
CELLOSOLVE ACETATE
DICHLORODIFLUOROMETHANE
ETHYL CYANOACRYLATE
ETHYLENE GLYCOL
FORMALDEHYDE
ISOPROPANOL
METHANOL
METHYL PROPYL KETONE
MONOETHANOLAMINE
NITROETHANE
N-ALKYL DIMETHYL BENZYL
N-BUTYL ACETATE
OXTYLPLHENOL POLYETHOXYLATE
PHENOL
POLY (METHYL METHACRYLATE)
TELOMER OF TETRAFLUOROETHYLENE
TRICHLOROFLUOROMETHANE
XYLENE

BUILDING 60
CONSOLIDATED AIR PERMIT APPLICATION
LIST OF GASES

ARGON
CARBON DIOXIDE
HELIUM
ISOBUTANE
NITROGEN

HARRIS SEMICONDUCTOR

AIR PERMIT - BUILDING 60

ATTACHMENT D

CONTROL EQUIPMENT

HARRIS SEMICONDUCTOR -- AIR PERMIT INFORMATION

CURRENT PERMIT

BUILDING: 60
PERMIT NUMBER: AO 05-117084
PERMIT TYPE : OPERATING

DATE ISSUED : 05/20/86
RENEWAL DATE: 03/23/91
DATE EXPIRES: 05/22/91

AREA SERVED:
PROCESS DESCRIPTION: PHOTO MASK ACID/VOC SCRUBBER

PERMIT LIMITS

VOL. RATE (SCFM): 24,500
ACID MIST (LB/HR): 0.0302
SOLVENTS (LB/HR): 0.0156
VOCS (LB/HR): 0.0125
OPER. (HRS/YEAR): 6336

SPECIFIC CONDITIONS

ANNUAL OPERATING REPORT : 03/01
NOTIFICATION OF VE TEST : NOT SPEC.
ANNUAL VIS EMISSION TEST: NOT SPEC.

EQUIPMENT INFORMATION

MANUFACTURER : HARRISON
HARRIS ID NUMBER : F60S01
VOLUME FLOW RATE (CFM): 24,500
RECIRCULATION RATE (GPM): 112
MAKEUP WATER RATE (GPM): 11.0

MODEL NUMBER : HF-245
STACK HEIGHT (FT):
STACK DIAMETER (IN):
STACK VELOCITY (FPM):
DUCT MATERIAL :

:

SCRUBBER INFORMATION

HARRIS ID # : F60S01
MANUFACTURER : HARRISON MODEL NUMBER : HF-245
SERIAL NUMBER: MATERIAL : POLYPRO
DESCRIPTION : HORIZONTAL CROSS-FLOW, PLASTIC SADDLE PACKING, LIQUID DISTRIBUTION THROUGH MAIN HEADER, NO SPRAY NOZZLES

DESIGN DATA
VOLUME FLOW RATE (CFM): 24,500 PRESSURE DROP (IN):
RECIRCULATION RATE (GPM): 112 MAKE UP RATE (GPM): 11.0

ACTUAL DATA
VOLUME FLOW RATE (CFM): PRESSURE DROP (IN): N/E DATE: 06/05/87
RECIRCULATION RATE (GPM): N/R MAKE UP RATE (GPM): N/R DATE: "

RECIRCULATION PUMP INFORMATION

MANUFACTURER : LEROY SOMERING MODEL NUMBER : 180
SERIAL NUMBER: F762622 HP : 5 RPM : 3460
BRKR LOCATION: NEXT TO UNIT FED FROM MCC : F184

FAN INFORMATION

HARRIS ID # :
MANUFACTURER : HARTZELL MODEL NUMBER: 41-40-GR3
SERIAL NUMBER: 49453 MATERIAL : FIBERGLASS
DESCRIPTION : CENTRIFUGAL TYPE, BACKWARD CURVED BLADES

DESIGN DATA
VOLUME FLOW RATE (CFM): 24,500 STATIC PRESS (IN): 3.25

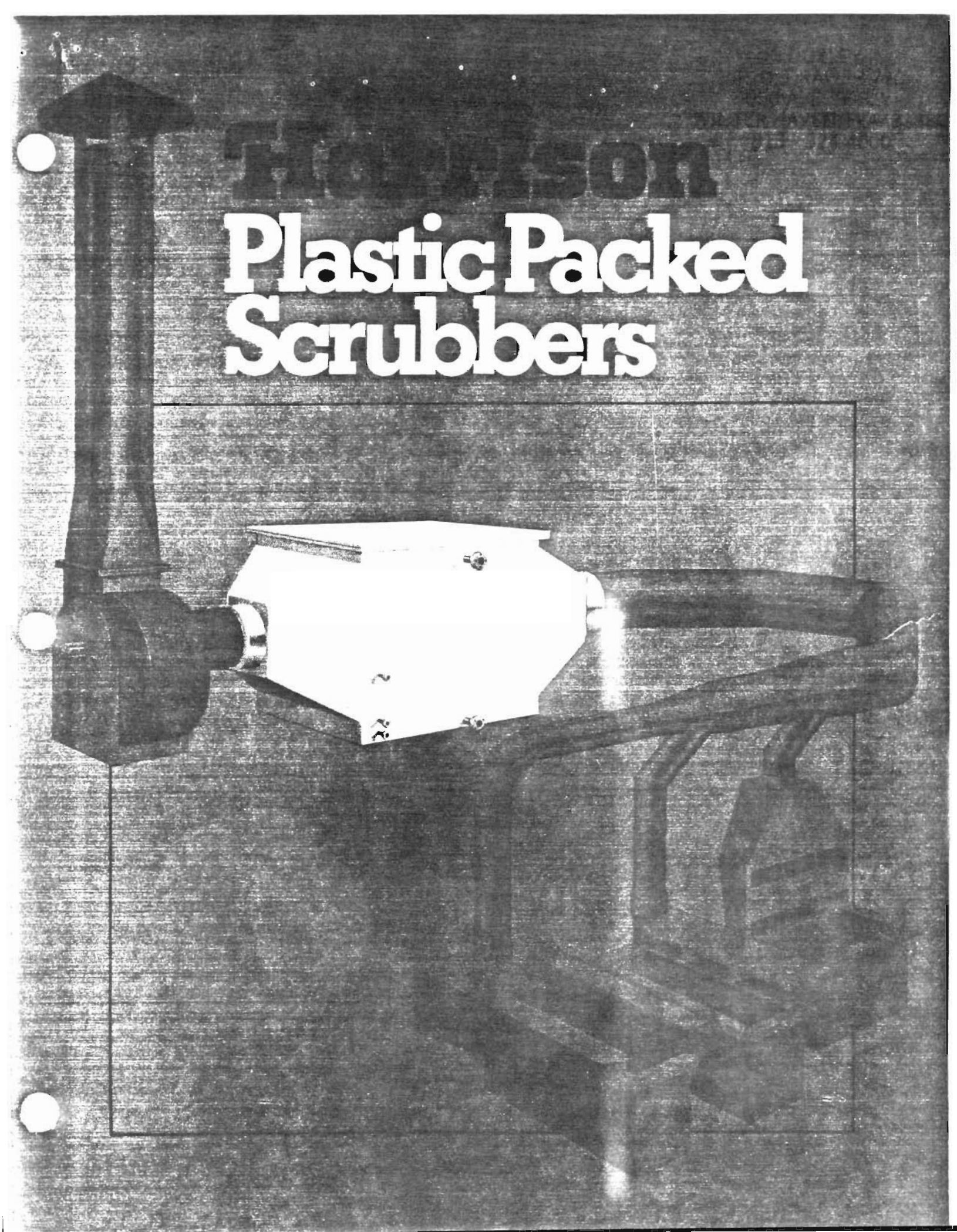
ACTUAL DATA SPEED (RPM): DATE:
VOLUME FLOW RATE (CFM): STATIC PRESS (IN): DATE:

FAN MOTOR INFORMATION

MANUFACTURER : MODEL NUMBER :
SERIAL NUMBER: HP : 30 RPM : 1800
BRKR LOCATION: NEXT TO UNIT FED FROM MCC : 1FIB5

Hobson

Plastic Packed Scrubbers



THE HARRISON SYSTEM

Harrison is a prime designer and producer of complete plastic exhaust systems, custom engineered scrubbing systems, as well as duct and fittings, tanks, and hoods. As a result of this capability and experience, design and manufacture of standard, pre-engineered fume scrubbers is a natural extension.

MATERIALS

Self-supporting or fiberglass armored PVC and Polypropylene, fiberglass armored Kynar, and solid fiberglass construction offers a wide range of resistance to acids, alkalis, solvents, and other corrosives at operating temperatures to approximately 250°F. Harrison systems do not use any metal in contact with the process stream.

PRE-ENGINEERING

Pre-engineered design reduces cost by eliminating the necessity to re-invent each item ordered. It results in more reliable service thru improved workmanship achieved by repetitive production control, and speeds quotations and approval drawings because costs and designs are immediately available. In addition to significant savings in approval and order time, Harrison reduces delivery time by stocking scrubber components including packing, support grids, distributor plates, nozzles, duct reducers, and sheet stock.

SCRUBBER CONFIGURATION

Most fume removal applications can be served by the two scrubber designs shown in this catalog. Vertical Counter Current style directs liquid down vertically, and unwanted fumes upward in the opposite direction. Horizontal Cross Flow unit directs liquid down vertically, but unwanted fumes are driven horizontally at 90° to the liquid. In both designs, liquid and fumes are inter-mixed in the packed bed section of the scrubber where fumes are removed by chemical reaction or water solubility. Scrubber shape does not affect performance. Horizontal design presents a low profile and is suitable where head room is limited. Verticals require more head room, but use only minimum floor space.

SCRUBBER DESIGN AND OPERATION

Highest scrubber efficiency (volumetric % of contaminate removed) is obtained by having the proper amount of contact surface area (packing) wetted by sufficient liquid (recirculated liquid rate) for an optimum residence time (packing depth) to allow unwanted fumes to take a treacherous path thru the wetted packing to permit their maximum removal from the carrier air stream by chemical reaction or water solubility. Air stream resistance encountered in the packing (static pressure loss) is a function of air velocity, cross-sectional packing area, and packing depth. Harrison scrubbers utilize proven packing depth to achieve efficiencies approaching 99+%, when operated within recommendations.

LIQUID DISTRIBUTION AND MIST ELIMINATION

Simple liquid distribution is achieved thru a main header pipe feeding perforated laterals, without use of troublesome spray nozzles. Nozzles are subject to plugging, and produce a difficult-to-remove atomized mist carryover. In the Harrison design, any large droplets of liquid caught in the upward moving air stream are easily and efficiently removed by a short bed of dry packing located above the liquid distributor.

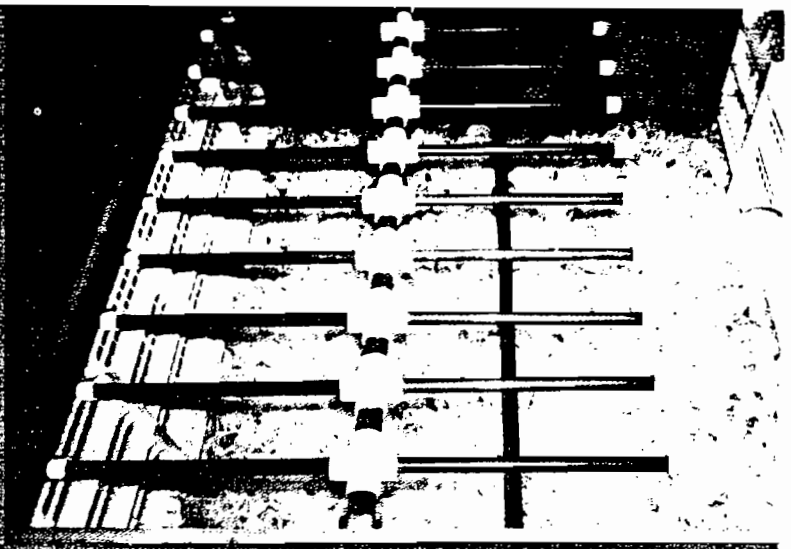
STATIC PRESSURE LOSS

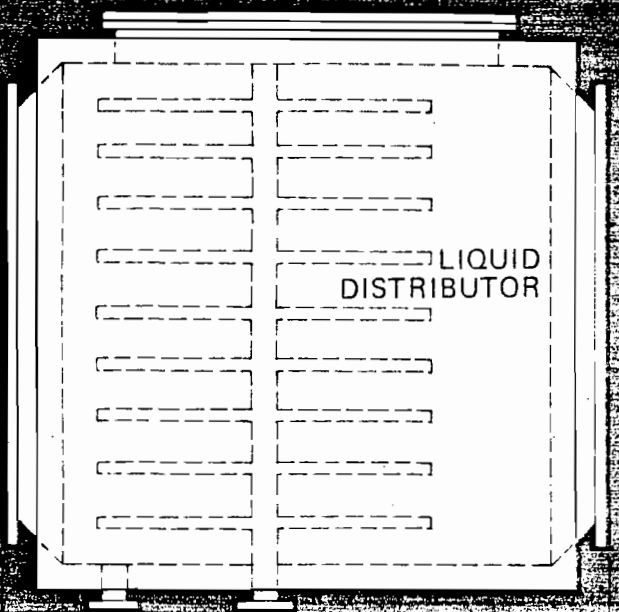
Use of high-surface-area, low-pressure-drop plastic saddles in a balanced design result in low static pressure loss of only 0.4 inches H_2O (w.g.) per foot of packed depth in Vertical Counter Current scrubbers, and 0.33 in Horizontal Cross Flow units. At the same time, sufficient irrigation rates constantly keep saddles clear of potential sludge buildup. Thereby, continuous, non-clogging operation at a proper rate of intermixing turbulence between liquid and fumes is achieved for 99+% efficiency.

LIQUID SUMP OPERATION

Harrison scrubbers employ an integral liquid recirculating sump which reduces amount of liquid consumption required by 90 to 95% in most applications. Therefore, considerably less effluent must be handled and treated. The sump reservoir is contained within the scrubber itself. Harrison recommends optimum rate of effluent removal. When effluent is acidic only, additional liquid conservation can be obtained with either scrubber design with the simple optional recovery system shown with the vertical scrubber drawing on page 4. If central treating facilities exist, no sump, recirculation, or independent recovery is needed. In this case, treated liquid would be directed over the packing in a single pass, then treated, then returned to the scrubber, etc. In both instances where effluent is treated, liquid consumption would be reduced to only that amount lost by evaporation.

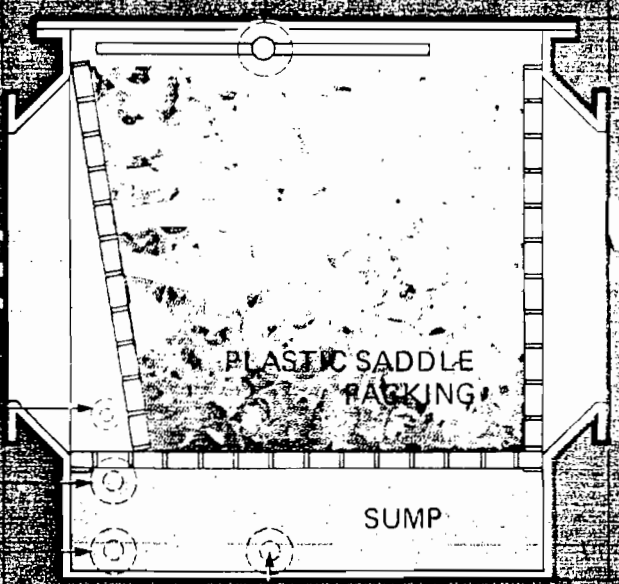
Harrison
Box 184 Aurora Ohio 44202/216-562-9545



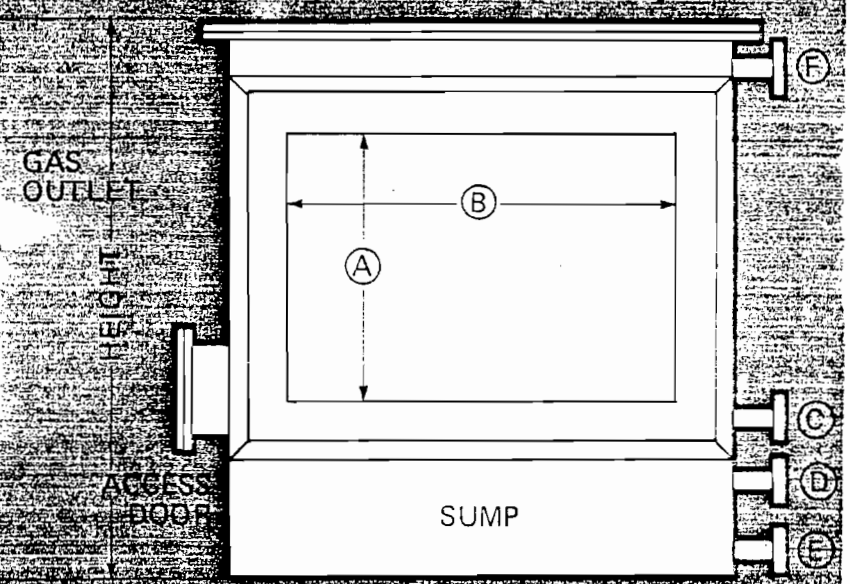


TOP VIEW

(LIQUID DISTRIBUTOR)



SIDE VIEW (CUT-A-WAY)



INLET SIDE VIEW

HORIZONTAL CROSS-FLOW

Model	CFM	Inlet & Outlet A x B In.	Length L Ft.	Width W In.	C In.	D In.	E In.	F In.	G In.	Sump Capacity Gal.	Rec. Liquid GPM	Overall Height In.	Ship* Wt. Lbs.	Operating Wt. Lbs.
HF-8	800	11x11	6	17	¾	1	1	1¼	1	58	17	35	182	646
HF-12	1,200	14x14	6	20	¾	1	1	1¼	1	69	21	38	224	781
HF-17	1,700	18x18	6	24	¾	1	1	1½	1¼	82	24	42	275	926
HF-21	2,100	21x21	6	27	¾	1	1	1½	1¼	92	28	45	316	1028
HF-25	2,500	24x24	6	30	¾	1½	1½	1½	1¼	102	32	48	357	1166
HF-31	3,100	27x27	6	33	¾	1½	1½	1½	1¼	113	35	51	419	1313
HF-37	3,700	30x30	6	36	¾	1½	1½	1½	1¼	125	39	54	481	1445
HF-45	4,500	33x33	6	39	¾	1½	1½	1½	1¼	134	42	57	563	1669
HF-50	5,000	36x36	6	42	¾	1½	1½	1½	1¼	144	45	5.0 ft.	615	1733
HF-67	6,700	36x36	6	48	1	2	2	1½	1¼	165	51	5.5	690	1980
HF-85	8,500	42x42	6	54	1	2	2	2	1½	186	56	6.0	824	2276
HF-105	10,500	48x48	6	60	1	2	2	2	1½	206	60	6.5	1035	2639
HF-126	12,600	54x54	6	66	1	2	2	2	1½	228	68	7.0	1242	2990
HF-150	15,000	60x60	6	72	1	2	2	2½	2	247	74	7.5	1545	3460
HF-176	17,600	66x66	6	78	1	2	2	2½	2	268	80	8.0	1751	3803
HF-190	19,000	66x72	6	84	1	2	2	2½	2	300	86	8.0	1957	4161
HF-220	22,000	66x84	6	96	1	2	2	2½	2	330	98	8.0	2266	4770
HF-245	24,500	66x96	6	108	1½	2	2	3	3	371	112	8.0	2524	5328
HF-273	27,300	66x108	6	120	1½	2	2	3	3	412	123	8.0	2835	5980
HF-300	30,000	66x120	6	132	1½	2	2	3	3	454	136	8.0	3180	6684
HF-327	32,700	66x132	6	144	1½	2	2	3	3	495	147	8.0	3490	7398

Selection Guide

41-40-3

HARTZELL
MODEL CODE 41-33GO3

- Blower Series No.
- Wheel Diameter, Inches
- Wheel Type
- Horsepower Code
- Motor RPM/Phase

3 Phase	1 Phase
3 = 1750	C = 1750

How To Use Capacity Tables

(1) Select size, RPM and BHP for a given air delivery and pressure of a centrifugal blower from rating tables, pages 10 through 21. Performance ratings are based on standard air conditions, sea level 70°F. and 29.92 inches barometric pressure giving an air density of .075 lbs. per cubic foot. The specific gravity of air equals 1.00 at these conditions.

(2) If non-standard temperature or altitude is involved, correct to standard air density (see Table 1).

(3) For speeds above ratings consult factory.

How to use Hartzell Model Code

EXAMPLE:

Assume the required performance to be 16,276 CFM at 3" SP standard air. Reading across the 33" Rating Table, page 13, we find a blower RPM of 1306 and brake horsepower of 14.5. Motor horsepower required is 15; therefore, horsepower code is "O". Type specification would be "GO3". The complete blower specification would read: Series 41-33-GO3.

Horsepower Code

Horsepower	¼	⅓	½	¾	1	1½	2	3	5	7½	10	15	20	25	30	40	50	60	75	100
Code Letter	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W

Altitude – Temperature Correction

Temperatures above or below 70° at sea level (O ft.) are read vertically between the double lines, giving the proper correction factors. Altitudes above sea level at a constant 70°F. temperature are read horizontally between the double lines giving those factors. Any other factors are obtained by reading down to the desired temperature, then across to the desired altitude.

Example:

Assume the required performance to be 12,520 CFM at 6.15" SP, 175° F. and 2000 feet altitude.

1. Table 1 gives a factor of 1.30.
2. 6.15" SP × 1.30 = 8.0" SP for 70° F. at sea level.
3. A backward curved centrifugal blower, size 33", selected from the rating tables for the new condition shows 12,520 CFM at 8.0" SP, 1537 RPM and 23.9 BHP.
4. Correct the horsepower and static pressure in Item 3 to non-standard performance by dividing by the factor:
   8.0" SP ÷ 1.30 = 6.15 SP
   23.9 BHP ÷ 1.30 = 18.38 BHP
5. Final performance of this size 33" backward curved centrifugal blower at assumed conditions:
   12,520 CFM at 6.15" SP, 1537 RPM, 18.38 BHP, 175° F. and 2000 Ft.

Table 1 – Combined Altitude - Temperature Correction Factors

°F. TEMP. \ ALT. FT.	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
−50	0.77	0.80	0.83	0.86	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.16	1.21
−25	0.82	0.85	0.89	0.92	0.95	0.98	1.03	1.07	1.11	1.15	1.20	1.24	1.29
0	0.87	0.90	0.94	0.97	1.01	1.04	1.09	1.13	1.17	1.22	1.27	1.31	1.37
25	0.91	0.95	0.98	1.02	1.06	1.09	1.14	1.18	1.23	1.27	1.33	1.37	1.43
50	0.96	1.00	1.04	1.08	1.11	1.15	1.20	1.25	1.30	1.34	1.40	1.45	1.51
70	1.00	1.04	1.08	1.12	1.16	1.20	1.25	1.30	1.35	1.40	1.46	1.51	1.57
100	1.06	1.10	1.14	1.19	1.23	1.27	1.33	1.38	1.43	1.48	1.55	1.60	1.66
125	1.10	1.14	1.19	1.23	1.28	1.32	1.38	1.43	1.49	1.54	1.61	1.66	1.73
150	1.15	1.20	1.24	1.29	1.33	1.38	1.44	1.50	1.55	1.61	1.68	1.74	1.81
175	1.20	1.25	1.30	1.34	1.39	1.44	1.50	1.56	1.62	1.68	1.75	1.81	1.88
200	1.25	1.30	1.35	1.40	1.45	1.50	1.56	1.63	1.69	1.75	1.83	1.89	1.96
250	1.34	1.39	1.45	1.50	1.55	1.61	1.68	1.74	1.81	1.88	1.96	2.02	2.10
300	1.43	1.49	1.54	1.60	1.66	1.72	1.79	1.86	1.93	2.00	2.09	2.16	2.25
350	1.53	1.59	1.65	1.71	1.77	1.84	1.91	1.99	2.07	2.14	2.23	2.31	2.40
400	1.62	1.69	1.75	1.82	1.89	1.96	2.04	2.12	2.20	2.27	2.35	2.45	2.55
450	1.72	1.79	1.86	1.93	2.00	2.08	2.16	2.24	2.33	2.41	2.50	2.60	2.70
500	1.81	1.88	1.96	2.03	2.11	2.19	2.28	2.36	2.46	2.54	2.62	2.74	2.85
550	1.91	1.98	2.06	2.14	2.22	2.30	2.40	2.49	2.58	2.68	2.77	2.89	3.00
600	2.00	2.08	2.16	2.24	2.33	2.42	2.50	2.61	2.71	2.80	2.90	3.03	3.14

NOTE: Above table has inverted values. Actual density is the *reciprocal* of the above values.

Abrasive/Erosive Atmospheres

HartKoate is an abrasive erosive resistant coating developed by Hartzell for application in environments where abrasive/erosive conditions may exist. HartKoate helps prevent premature deterioration of equipment in environments where uncoated fans may fail.

Impact resistant HartKoate is applied to a 50-60 mil thickness suitable for temperatures to 200°F.

HartKoate is particularly appropriate for use when water mist and or abrasive particles exist in the air stream.

Contact your Hartzell representative for further details concerning the application of HartKoate coating to fiberglass fans in corrosive atmospheres.

Installation Weights-Bearing/Shaft Sizes

Series 41

Size	Type	Net Wt. (lbs.)	Shaft/ Bearing Sizes
15"	GH3	526	1 7/16"
	GI3	526	1 7/16"
	GJ3	529	1 7/16"
	GK3	529	1 7/16"
	GL3	549	1 7/16"
	GM3	554	1 7/16"
22"	GH3	772	1 11/16"
	GI3	772	1 11/16"
	GJ3	776	1 11/16"
	GK3	776	1 11/16"
	GL3	806	1 11/16"
	GM3	813	1 11/16"
	GN3	854	1 11/16"
	GO3	865	1 11/16"
	GP3	926	1 11/16"
27"	GI3	954	1 15/16"
	GJ3	959	1 15/16"
	GK3	959	1 15/16"
	GL3	996	1 15/16"
	GM3	1004	1 15/16"
	GN3	1054	1 15/16"
	GO3	1069	1 15/16"
	GP3	1144	1 15/16"
	GQ3	1164	1 15/16"
	GR3	1190	1 15/16"
33"	GI3	1355	2 3/16"
	GJ3	1355	2 3/16"
	GK3	1382	2 3/16"
	GL3	1397	2 3/16"
	GM3	1454	2 3/16"
	GN3	1482	2 3/16"
	GO3	1514	2 3/16"
	GP3	1544	2 3/16"
	GQ3	1594	2 3/16"
	GR3	1644	2 3/16"
40"	GI3	1885	2 7/16"
	GJ3	1885	2 7/16"
	GK3	1912	2 7/16"
	GL3	1932	2 7/16"
	GM3	1972	2 7/16"
	GN3	1987	2 7/16"
	GO3	2047	2 7/16"
	GP3	2077	2 7/16"
	GQ3	2127	2 7/16"
	GR3	2177	2 7/16"
	GS3	2277	2 7/16"
	GT3	2327	2 7/16"
49"	GL3	2415	2 15/16"
	GM3	2465	2 15/16"
	GN3	2483	2 15/16"
	GO3	2558	2 15/16"
	GP3	2596	2 15/16"
	GQ3	2658	2 15/16"
	GR3	2721	2 15/16"
	GS3	2846	2 15/16"
	GT3	2908	2 15/16"
	GU3	2958	2 15/16"
	GV3	3063	2 15/16"
	GW3	3123	2 15/16"

Series 43

Size	Type	Net Wt. (lbs.)	Shaft/ Bearing Sizes
16"	FH3	302	1 3/16"
	FI3	302	1 3/16"
	FJ3	302	1 3/16"
	FK3	338	1 3/16"
	FL3	358	1 3/16"
	FM3	361	1 3/16"
	FN3	380	1 3/16"
	FO3	431	1 3/16"
	FP3	460	1 3/16"
19"	FI3	372	1 7/16"
	FJ3	372	1 7/16"
	FK3	399	1 7/16"
	FL3	444	1 7/16"
	FM3	447	1 7/16"
	FN3	466	1 7/16"
	FO3	517	1 7/16"
	FP3	547	1 7/16"
	FQ3	587	1 7/16"
	FR3	667	1 7/16"
23"	FJ3	404	1 11/16"
	FK3	431	1 11/16"
	FL3	451	1 11/16"
	FM3	496	1 11/16"
	FN3	516	1 11/16"
	FO3	535	1 11/16"
	FP3	565	1 11/16"
	FQ3	605	1 11/16"
	FR3	695	1 11/16"
	FS3	735	1 11/16"
26"	FK3	489	1 11/16"
	FL3	509	1 11/16"
	FM3	555	1 11/16"
	FN3	574	1 11/16"
	FO3	625	1 11/16"
	FP3	655	1 11/16"
	FQ3	715	1 11/16"
	FR3	805	1 11/16"
	FS3	845	1 11/16"
	FT3	940	1 11/16"
30"	FL3	626	1 15/16"
	FM3	629	1 15/16"
	FN3	649	1 15/16"
	FO3	709	1 15/16"
	FP3	739	1 15/16"
	FQ3	779	1 15/16"
	FR3	869	1 15/16"
	FS3	909	1 15/16"
	FT3	1004	1 15/16"
	*FU3	529	1 15/16"
33"	FL3	692	1 15/16"
	FM3	695	1 15/16"
	FN3	705	1 15/16"
	FO3	775	1 15/16"
	FP3	805	1 15/16"
	FQ3	855	1 15/16"
	FR3	945	1 15/16"
	FS3	985	1 15/16"
	FT3	1075	1 15/16"
	*FU3	600	1 15/16"
	*FV3	600	1 15/16"
	*FW3	600	1 15/16"

Series 42

Size	Type	Net Wt. (lbs.)	Shaft/ Bearing Sizes
10"	FC3	63	
12"	FF3	78	
14"	FG3	96	

*Net installation weights are for Arrangement 1. (Less motor & drive.)

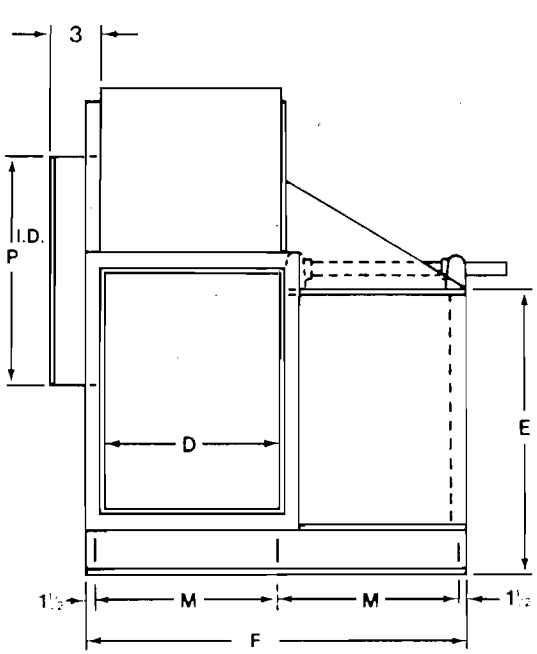
Metric Conversion Table

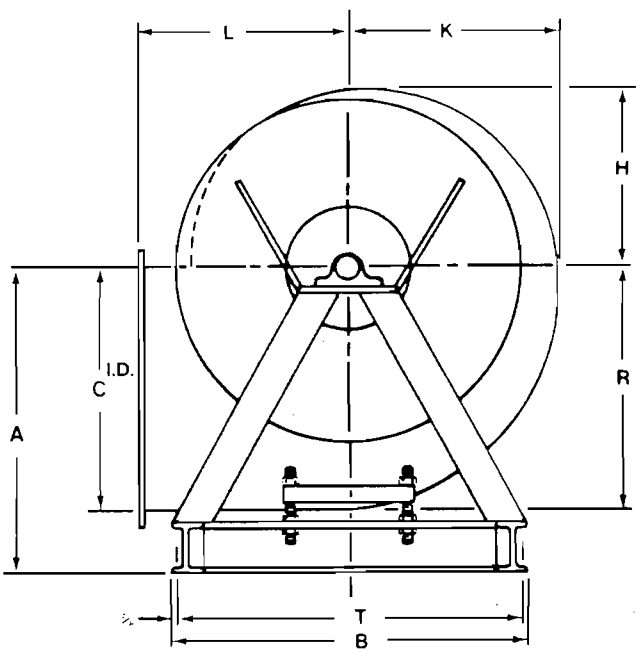
FROM	TO	MULTIPLY BY
Inches (in.)	Millimeter (mm)	25.400
Feet (ft.)	Meter (m)	0.3048
Velocity (ft./min.)	Meter/Second (m/s)	0.00508
Volume Flow (cfm)	Cubic Meter/Second (m^3/s)	0.00047195
Pressure (in. w.g.)	Pascal (N/m^2)	248.36
Density ($lb./ft.^3$)	Kilogram /Cubic Meter (Kg/m^3)	16.018
Power (hp)	Watt (w)	745.70
Square Foot ($ft.^2$)	Square Meter (m^2)	0.09290
Square Inch ($in.^2$)	Square Meter (m^2)	0.0006451

Principal Dimensions

Size	Wheel Dia.	A	B	C	D	E	F	H	K	L	M	P	R	T	Max. Motor Frame Size	
															ODP	TEFC
15	15⅝	32⅛	33½	16⅛	11 11/16	30¼	41	12 11/16	14 9/16	16 5/16	19	16	16 7/16	31⅝	326T	286T
22	22 9/16	32½	33½	23⅝	17⅛	30¼	46	18 7/16	21 5/16	21¼	21½	23	23 5/16	31⅝	326T	286T
27	27¾	38⅛	43	29	21	35⅞	51	22¾	26⅛	24	24	28	29½	41¼	326T	286T
33	33 13/16	43⅛	50	35 7/16	25 11/16	40⅝	56	27 11/16	31 13/16	29 5/16	26½	34½	35 15/16	48½	326T	286T
40	41½	51¼	59	43 5/16	31⅜	48⅜	62	33 13/16	38 13/16	35⅞	29½	41⅞	43⅞	57¼	326T	286T
49	50 5/16	61⅜	73	52⅝	38⅛	58	92	41	47⅛	40	44½	50 5/16	53¼	71⅛	447T	447T

NOTES: ON 15 AND 22 SIZES WITH 254T FR. AND LARGER MOTORS, BASE DIMENSIONS MUST BE CERTIFIED BY THE FACTORY. DIMENSIONS AND SPECIFICATIONS ARE SUBJECT TO CHANGE. CERTIFIED PRINTS ARE AVAILABLE.



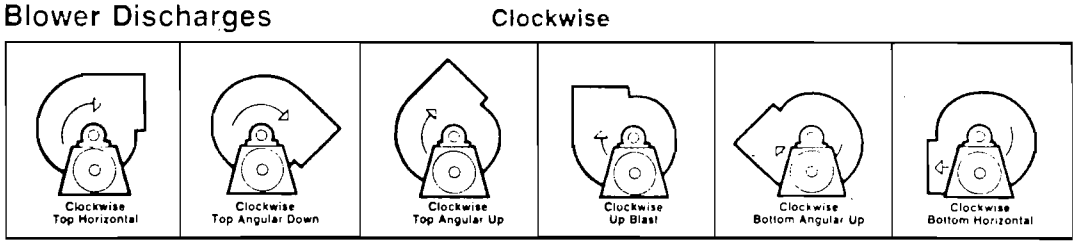


Material Specifications — Inches

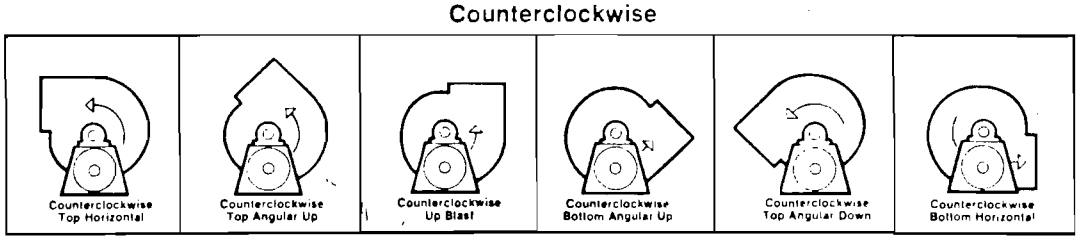
Size	HOUSING (Thickness)				(H.R.S.) FAN STAND			WHEEL (Thickness)		
	Scroll	Inlet Cone	Flanges		Back Plate	H-Beam	Channel	Blade	Back Plate	Outer Panel
			Inlet	Outlet						
15	5/16	5/16	3/16	5/16	¼	6 × 4	4	¼	¼	¼
22	5/16	7/16	¼	5/16	¼	6 × 4	4	¼	5/16	5/16
27	¼	¼	5/16	¼	¼	6 × 4	4	5/16	¾	¾
33	¼	5/16	⅜	¼	¼	6 × 4	4	⅜	7/16	7/16
40	9/16	¾	7/16	9/16	¼	6 × 4	4	7/16	1	1
49	5/8	15/16	9/16	5/8	¼	6 × 4	4	1	1⅜	1⅜

Blower Discharges

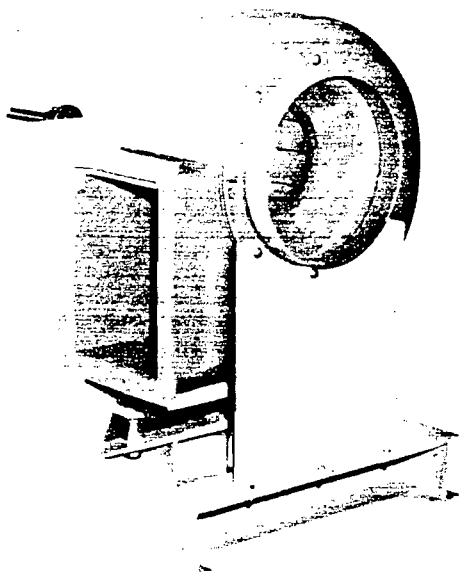
Clockwise



Counterclockwise



Backward Curved Blower (Belt Drive)



Arrangement #10 Shown.

AMCA CERTIFIED RATINGS AIR

Series 41

Blowers available in SWSI only

The belt drive airfoil backward curved centrifugal blower offers non-overloading efficiency and economy in corrosive atmospheres at static pressures up to 12". The wheel and housing are constructed with a special corrosive resistant polyester resin having a Class I flame spread rate of 25 or less. No metal parts are exposed in the airstream. All internal hardware is 300 series stainless steel encapsulated with fiberglass.

Features

- **Sizes** — 15", 22", 27", 33", 40", 49" wheel diameters.
- **Arrangements** — available in Arrangements #1, #9 or #10.
- **Rotation — clockwise** and **counter clockwise rotation. Rotatable in field.**
- **Discharges** — available discharges shown on page 9.
- **Packaged unit** — motor and drive mounted by factory.
- **Easy installation and maintenance** — motor, drive and bearings are readily accessible for ease in wiring, installation, adjustment and lubrication.
- **Wheel** — a true airfoil type of multi-piece, solid fiberglass construction bonded together with resin and fiberglass material. Airfoil backwardly inclined blades offer greater versatility for industrial applications. Wheel has non-overloading horsepower characteristics in that brake horsepower levels off at a point that prevents motor overload if system changes occur. Wheel Type G.
- **Motors** — open end drip proof are standard. Totally enclosed fan cooled and other special motors are available upon request.
- **Variable pitch drives** are standard on all units up to 10 HP.
- **Flanged outlets are standard.** Inlet flanges are optional. Drilling of flanges is optional. (Position of drilled holes must be specified by customer.)
- **All units are test run** and **electronically balanced** before shipment.
- **Heavy Duty Design** suitable for service up to and including Class III.
- **Bearings** — heavy duty, self-aligning, double row spherical roller type pillow block bearings are standard and are furnished with extended lubrication lines. Bearings have floating labyrinth seals. (See page 7 for Bearing/Shaft sizes.)
- **Shafts** are 304 stainless steel as standard. Monel available at extra cost.
- **Bases** — heavy gauge hot rolled steel, epoxy coated.
- **Maximum Temperature:** 200° F.
- **Maximum tip speed:** 16,000 FPM
- **Accessories** —
  See pages 22 and 23.

	OV	½" SP		1" SP		1½" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP	
CFM	FPM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7448	800			470	1.5	537	2.6	598	3.4										
8379	900			487	2.1	550	2.9	613	4.0	725	6.0								
9310	1000			500	2.2	575	3.4	627	4.5	732	6.6	832	9.2						
10241	1100			525	2.5	593	3.8	650	5.0	750	7.4	847	10.1						
11172	1200	475	1.9	548	2.9	615	4.2	673	5.3	765	8.0	857	11.0	947	13.8				
12103	1300	506	2.0	572	3.2	629	4.5	696	5.9	797	8.5	870	11.6	954	15.0	1032	17.9		
13034	1400	536	2.6	597	3.7	656	5.0	714	6.2	812	9.4	897	12.4	967	16.0	1046	19.4	1112	22.5
13965	1500	560	2.8	622	4.0	675	5.5	725	6.5	832	9.9	909	13.8	980	16.6	1053	20.4	1123	25.0
14896	1600	597	3.4	650	4.7	702	6.0	748	7.3	851	10.8	933	14.5	998	17.5	1067	21.5	1135	25.6
15827	1700	623	3.8	675	5.2	725	6.6	764	8.0	865	11.1	956	15.0	1019	18.7	1084	22.5	1147	26.5
16758	1800	653	4.4	705	6.0	753	7.4	790	8.6	882	11.7	976	16.4	1047	19.7	1097	23.8	1165	28.1
17689	1900	685	5.1	731	6.6	775	8.0	820	9.6	900	12.5	992	16.9	1070	21.1	1125	25.0	1179	29.3
18620	2000	712	5.6	760	7.2	802	8.9	841	10.6	922	13.5	1005	17.5	1088	22.2	1149	26.4	1205	30.6
20482	2200	775	7.4	823	8.9	864	10.8	900	12.4	973	16.0	1040	19.0	1121	23.7	1196	29.5	1251	34.0
22344	2400	841	9.3	882	11.1	918	12.9	953	14.8	1024	18.5	1085	22.0	1150	26.0	1226	31.6	1294	37.7
24206	2600	900	11.3	935	12.9	975	15.2	1008	17.0	1075	21.5	1132	25.4	1193	29.2	1259	34.0	1325	39.8
26068	2800	962	13.6	1000	15.8	1035	17.6	1064	20.0	1127	24.5	1187	29.0	1244	33.5	1295	37.4	1357	42.5
27930	3000	1035	16.5	1068	19.0	1098	21.3	1128	23.5	1186	28.5	1243	33.4	1297	38.0	1348	42.5	1398	47.1
29792	3200	1104	20.2	1131	22.5	1162	25.0	1188	27.1	1250	32.7	1304	37.0	1352	43.0	1399	48.0	1446	52.6
31654	3400	1156	23.0	1185	25.5	1215	28.2	1254	31.5	1300	36.5	1350	41.7	1400	47.5	1448	53.0	1493	58.0
33516	3600	1225	27.5	1252	30.4	1277	32.5	1303	35.0	1356	41.9	1409	47.0	1455	52.8	1502	58.8		
35378	3800	1293	32.5	1321	35.0	1344	37.9	1369	40.2	1420	46.6	1466	52.5	1512	58.7				
37240	4000	1356	36.2	1385	40.2	1409	43.2	1433	46.2	1480	52.4	1525	58.5						
39102	4200	1422	42.8	1446	45.6	1471	49.0	1495	52.2	1539	58.4								
40964	4400	1489	48.9	1512	52.0	1537	55.5												

	OV	8" SP		9" SP		10" SP		11" SP		12" SP	
CFM	FPM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
13965	1500	1191	28.8	1253	31.3						
14896	1600	1200	29.3	1263	32.9	1324	36.9				
15827	1700	1213	31.4	1272	34.5	1330	38.6	1390	44.5		
16758	1800	1225	32.6	1283	36.9	1343	41.1	1398	46.7	1453	51.0
17689	1900	1242	34.5	1296	38.5	1354	42.9	1410	48.9	1462	53.6
18620	2000	1256	35.1	1313	40.1	1368	45.0	1421	50.7	1473	56.0
20482	2200	1300	38.0	1350	43.5	1403	49.0	1452	54.4	1500	60.0
22344	2400	1350	43.0	1395	47.5	1440	52.5	1488	58.1	1534	63.8
24206	2600	1392	48.6	1442	52.3	1486	57.3	1529	62.6		
26068	2800	1425	50.0	1485	56.6	1533	62.5				
27930	3000	1458	53.4	1519	60.2						
29792	3200	1495	57.5								
31654	3400	1539	63.0								

Performance shown is with inlet and outlet ducts.
RPM shown is nominal and performance is based on actual speed of test.
BHP includes belt drive losses.

HARTZELL FAN

BELT DRIVE FANS
MAINTENANCE AND LUBRICATION

THE MOTOR BEARINGS AND FAN BEARINGS ON BELT DRIVE FANS SHOULD BE GREASED AT REGULAR INTERVALS. MTR.MFG.GREASING INSTRUCTIONS & RECOMMENDATIONS SHOULD BE FOLLOWED CLOSELY. AVOID THE USE OF A PRESSURE GREASING SYSTEM WHICH TENDS TO FILL THE BEARING CHAMBER COMPLETELY. DO NOT OVER GREASE. NOTE: ON MOTORS WITH NON-REGREASABLE, SEALED BEARING, NO LUBRICATION IS REQUIRED FOR THE LIFE OF THE BEARING. THE FOLLOWING TABLE LISTS THE TIME INTERVALS BETWEEN FAN GREASING TO INSURE PROPER LUBRICATION IN ADVERSE CONDITIONS OF HEAT & DUST. USE ONLY 1 OR 2 SHOTS WITH A HAND GUN IN MOST CASES. MAXIMUM HANDGUN RATING 40 P.S.I.

CONDITIONS AROUND BEARING	OPERATING TEMPERATURE OF FAN	** GREASING INTERVALS
FAIRLY CLEAN	UP TO 120 F	6 MONTHS TO 12 MONTHS
	120 F TO 160 F	2 MONTHS TO 3 MONTHS
	160 F TO 200 F PLUS*	1 MONTH TO 2 MONTHS
MODERATE TO EXTREMELY DIRTY	UP TO 160 F	1 MONTH TO 2 MONTHS
	160 F TO 200 F PLUS*	2 WEEKS TO 4 WEEKS
COLD STORAGE ROOM		EVERY DEFROSTING PERIOD OR NO MORE THAN 4 MONTHS

** FOR VERTICAL INSTALLATIONS GREASING INTERVALS SHOULD BE TWICE AS FREQUENT AS TABLE VALUES

*FOR FAN APPLICATIONS OVER 200 F GREASING INTERVALS SHOULD BE FROM SEVERAL DAYS TO 2 WEEKS, DEPENDING ON THE TEMPERATURE

THE FOLLOWING GREASES, OR ONE THAT IS EQUIVALENT TO THE GENERAL DESCRIPTION, ARE RECOMMENDED FOR THE FOLLOWING TEMPERATURES OR EXCESSIVE MOISTURE APPLICATIONS:

OPERATING CONDITIONS	USE GREASE EQUIVALENT TO THESE GRADES
TEMPERATURES -65 F TO 0 F	ESSO-BEACON #325 (-65 F) MOBIL GREASE #28 (-65 F) SHELL OIL-AEROSHELL NO. 16 (-65 F) SHELL OIL AEROSHELL NO. 22 (-85 F) SHELL OIL AEROSHELL NO. 7 (-100 F) ++ DOW CORNING-DC33, DC41, DC44 (-40 F) NOTE: NOT MISCIBLE WITH NON-SILICON BASED GREASES.

GENERAL DESCRIPTION: VERSATILE MULTIPURPOSE MICROGEL THICKENED SYNTHETIC HYDROCARBON GREASE WITH CORROSION INHIBITORS, ANTIOXIDANT ADDITIVES, WATER RESISTANCE TENDENCIES AND EP CHARACTERISTICS.

TEMPERATURE 0 F TO 200 F INCLUSIVE (ALSO USE FOR HEAVY CONDENSATION OR DIRECT SPLASH OF WATER)	TEXACO-PREMIUM RP#2 OR REGAL AFB#2 AMERICAN OIL-AYKON PREMIUM#2 OR AMOLITH#2 UNION 76-UNOBA EP#2 (275 F) GULF OIL CORP.-GULF CROWN EP#2 MOBIL OIL-MOBILUX EP#2 SHELL OIL-SHELL ALVANIA EP#2 CHEVRON-CHEVRON SRI #2 ATLANTIC RICHFIELD-LITHOLENE EP#2 STANDARD OIL-FACTRAN EP#2 CONOCO-CONOLITH EP#2

GENERAL DISCRIPTION: MULTIPURPOSE NLGI#2 GREASE FROM LITHIUM SOAP WITH EP CHARACTERISTICS, RUST INHIBITORS, ANTI-OXIDANT ADDITIVES & GOOD WATER RESISTANCE TENDENCIES.

TEMPERATURES OVER 200 F CONSULT WITH HARTZELL ENGINEERS ON HI TEMP FAN APPLICATIONS.	MOBIL OIL-MOBIL GREASE #28 (350 F) ESSO-BEACON #325 (350 F) SHELL OIL-AEROSHELL NOS. 16 & 22 (400 F) ++DOW CORNING-DC44 & DC41 (400 F) NOTE: NOT MISCIBLE WITH NON-SILICON BASED GREASES.

GENERAL DESCRIPTION: VERSATILE MULTIPURPOSE MICROGEL THICKENED SYNTHETIC HYDROCARBON GREASE WITH CORROSION INHIBITORS, ANTIOXIDANT ADDITIVES, WATER RESISTANCE TENDENCIES AND EP CHARACTERISTICS.

THE BEARINGS ON THIS FAN SHAFT HAVE BEEN GREASED AT THE FACTORY FOR THE FOLLOWING APPLICATION:

- ☐ GENERAL PURPOSE (UNION 76 UNOBA EP#2)
- ☐ HIGH TEMPERATURE (MOBIL GREASE #28)
- ☐ LOW TEMPERATURE (MOBIL GREASE #28)
- ☐ EXTREME MOISTURE (UNION 76 UNOBA EP#2)
- ☐ OTHER _____

BELT TENSION--EXCESSIVE TENSION OF THE BELTS PUTS AN ADDED LOAD ON THE BEARING & REDUCES BEARING LIFE. TO AVOID THIS CONDITION, TIGHTEN BELTS AS SHOWN ON THE REVERSE SIDE.

++NOTE: WHEN USING DOW CORNING SILICON BASED GREASES, FAN BEARINGS SHOULD BE COMPLETELY PURGED OF EXISTING GREASE. BEARINGS SHOULD BE ROTATED WHILE PURGING TO INSURE EXISTING GREASE IS PURGED AS BEST POSSIBLE. DO NOT USE SILICON GREASE IN MOTORS UNLESS MTR. MANUFACTURER'S INSTRUCTIONS SO STATE.

INSTALLING, TENSIONING AND CHECKING V-DRIVES

GENERAL DRIVE TENSIONING GUIDELINES:

1. IDEAL TENSION IS THE TENSION AT WHICH THE BELT WILL NOT SLIP UNDER PEAK LOAD CONDITIONS.
2. OVER TENSIONING SHORTENS BELT AND BEARING LIFE.
3. KEEP BELTS FREE FROM FOREIGN MATERIAL WHICH MAY CAUSE SLIPPING.
4. MAKE PERIODIC V-DRIVE INSPECTION. TENSION WHEN SLIPPING. THE USE OF BELT DRESSING IS NOT RECOMMENDED.
5. BEFORE INSTALLING A NEW SET OF V-BELTS, CHECK THE CONDITION OF THE SHEAVES. DIRTY OR RUSTY SHEAVES IMPAIR THE DRIVES EFFICIENCY AND ABRADE THE BELTS, RESULTING IN PREMATURE FAILURE. ALSO, WORN SHEAVES CAN SHORTEN THE BELT LIFE BY AS MUCH AS 50%.
6. DO NOT USE A NEW OR USED BELT AS A REPLACEMENT FOR A UNIT OF A SET. IF A BELT BREAKS A NEW SET OF MATCHED BELTS IS NECESSARY. ALWAYS REPLACE BELTS WITH THE SAME KIND THAT WERE ON THE FAN BEFORE.
7. AFTER PROPERLY TENSIONING THE BELTS, DOUBLE-CHECK TO BE SURE THE SHEAVE GROOVES ARE CORRECTLY ALIGNED, AND THAT ALL SHAFTING IS PARALLEL.

INSTALLATION AND CHECKING METHODS:

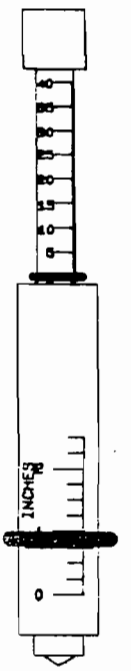
I. VISUAL METHOD

1. WHEN INSTALLING BELTS, REDUCE THE CENTER DISTANCE SO THAT THE BELTS MAY BE PLACED IN THE SHEAVE GROOVES WITHOUT FORCING. ARRANGE THE BELTS SO THAT THE TOP AND BOTTOM SPANS HAVE ABOUT THE SAME AMOUNT OF SAG. APPLY TENSION TO THE BELTS BY INCREASING THE CENTER DISTANCE UNTIL BELTS ARE SNUG AND HAVE A LIVE SPRINGING ACTION WHEN STRUCK WITH THE HAND.
2. OPERATE THE DRIVE A FEW MINUTES TO SEAT THE BELTS IN THE SHEAVE GROOVES. OBSERVE THE OPERATION OF THE DRIVE UNDER ITS HIGHEST LOAD CONDITIONS (USUALLY STARTING). A SLIGHT BOWING OF THE SLACK SIDE OF THE DRIVE INDICATES ADEQUATE TENSION. EXCESSIVE BOWING OR SLIPPAGE INDICATES INSUFFICIENT TENSION. IF THE SLACK SIDE REMAINS TAUT DURING THE PEAK LOAD, THE DRIVE IS TOO TIGHT.
3. NEW DRIVE TENSION SHOULD BE CHECKED SEVERAL TIMES DURING THE FIRST 24 HOURS OF OPERATION, BY OBSERVING THE SLACK SIDE SPAN.

II. TENSIONING GAGE METHOD

WHEN A TENSION GAGE IS AVAILABLE & THE CENTER OF THE BELT SPAN IS ACCESSIBLE, THE FOLLOWING METHOD MAY BE USED. TO DETERMINE THE POUNDS FORCE REQUIRED TO TENSION A DRIVE WITH A BELT TENSIONER, PROCEED AS FOLLOWS:

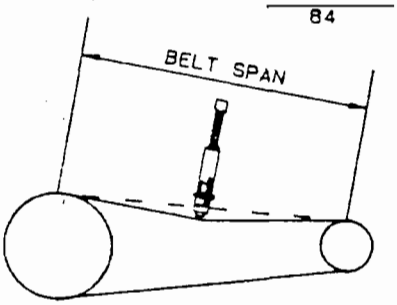
1. MEASURE THE BELT SPAN AS SHOWN & CALCULATE THE DEFLECTION INCHES USING THE GIVEN EQUATION . SET LARGE O-RING FOR CALCULATED INCHES OF DEFLECTION.
2. SET SMALL O-RING AT 0 AND PRESS DOWN THE BELT TENSIONER AT CENTER OF BELT SPAN AS SHOWN.
   A. ON A SINGLE BELT DRIVE, DEPRESS BELT TENSIONER UNTIL THE LARGE O-RING IS EVEN WITH BOTTOM OF A STRAIGHT EDGE PLACED ACROSS THE OUTSIDE EDGE OF THE TWO SHEAVES.
   B. ON MULTIPLE BELT DRIVE, DEPRESS BELT TENSIONER UNTIL LARGE O-RING IS EVEN WITH THE TOP OF THE NEXT BELT. AVERAGE READINGS FROM ALL BELTS IS THE VALUE TO USE IN THE TABLES BELOW.
3. REMOVE TENSION GAGE & OBSERVE THE NEW POSITION OF THE SMALL O-RING IS SET AT THE NUMBER OF DEFLECTION POUNDS FOR THE SET NUMBER OF INCHES.
4. COMPARE THIS READING, OR THE AVERAGE OF SEVERAL READINGS IN THE CASE OF MULTIPLE BELTS, TO THE NEW/USED VALUES IN THE TABLES BELOW FOR THE PROPER BELT CROSS SECTION. IF READINGS DO NOT FALL IN THIS RANGE, READJUST THE BELT TENSION AS DESCRIBED IN THE VISUAL METHOD AND REPEAT MEASUREMENT.



EXAMPLE:

1. BELT SPAN =64" AND SMALL SHEAVE IS 6.0 P.D. WITH COG BELTS.
2. 84"/64=1" REQUIRED DEFLECTION.
3. SET LARGE O-RING AT 1" ON GAGE INCHE SCALE.
4. SET SMALL O-RING AT ZERO ON PLUNGER.
5. PRESS DOWN ON BELTS WITH GAGE UNTIL LARGE O-RING IS EVEN WITH THE NEXT BELT OR A STRAIGHT EDGE, WHICHEVER THE CASE MAY BE. WITH MULTIPLE BELTS, SEVERAL READINGS ARE NEEDED TO GET AN AVERAGE.
6. USE THE POUND FORCE READING OR AVERAGE OF SEVERAL READINGS REQUIRED FOR 1" DEFLECTION IN THE TABLES BELOW.
7. THE "B" BELT TABLE FOR 6.0" P.D. SMALL SHEAVE SHOULD HAVE A DEFLECTION FORCE BETWEEN 7.3 & 10.3 LBS.
8. INCREASE OR DECREASE THE TENSION ON BELTS UNTIL THE DEFLECTION FORCE IS BETWEEN 7.3 & 10.3 LBS.

$$\text{DEFLECTION} = \frac{\text{BELT SPAN}}{84}$$



CROSS SECTION	SMALLEST SHEAVE DIAMETER	R.P.M. RANGE	BELT DEFLECTION FORCE STD. BELTS USED	STD. BELTS NEW	COG BELTS USED	COG BELTS NEW
A, AX	3.0-3.6	1000-2500	3.7	5.5	4.1	6.1
		2501-4000	2.6	4.2	3.4	5.0
	3.6-4.6	1000-2500	4.5	6.8	5.0	7.4
		2501-4000	3.8	5.7	4.3	6.4
	5.0-7.0	1000-2500	5.4	8.0	5.7	8.4
		2501-4000	4.7	7.0	5.1	7.5
B, BX	3.4-4.2	880-2500	5.3	7.8	4.9	7.2
		2501-4000	4.8	6.8	4.2	6.2
	4.4-5.8	880-2500	5.3	7.9	7.1	10.5
		2501-4000	4.5	6.7	7.1	8.1
	5.6-8.6	880-2500	6.5	9.4	6.5	12.6
		2501-4000	8.0	6.8	7.3	10.3
C, CX	7.0-8.0	500-1740	11.5	17.0	14.7	21.8
		1741-3000	8.4	13.8	11.8	17.5
	8.5-10.0	500-1740	14.1	21.0	15.8	23.5
		1741-3000	12.5	18.5	14.5	21.8
D	12.0-16.0	200-850	24.8	37.0	28.0	37.0
		851-1500	21.2	31.5	21.0	31.0
	16.0-20.0	200-850	30.4	45.8	30.1	46.0
		851-1500	25.8	38.0	25.0	38.0

CROSS SECTION	SMALLEST SHEAVE DIAMETER	R.P.M. RANGE	BELT DEFLECTION FORCE STD. BELTS USED	STD. BELTS NEW	COG BELTS USED	COG BELTS NEW
3V, 3VX	2.2-2.4	1000-2500	N/R	N/R	3.3	4.9
		2501-4000	N/R	N/R	2.9	4.3
	2.65-3.65	1000-2500	3.6	5.1	4.2	6.2
		2501-4000	3.0	4.4	3.6	5.6
	4.12-6.9	1000-2500	4.9	7.3	5.3	7.9
		2501-4000	4.4	6.6	4.9	7.3
5V, 5VX	4.4-6.7	500-1749	N/R	N/R	10.2	15.2
		1750-3000	N/R	N/R	8.8	13.2
		3001-4000	N/R	N/R	5.6	8.5
	7.1-10.9	500-1740	12.7	18.9	14.6	22.1
		1741-3000	11.2	16.7	13.7	20.1
	11.8-16.0	500-1740	15.5	23.4	17.1	25.5
		1741-3000	14.6	21.8	16.8	25.0
8V	12.5-17.0	200-850	33.0	49.3	N/A	N/A
		851-1500	26.8	38.8	N/A	N/A
	18.0-22.4	200-850	38.8	58.2	N/A	N/A
		851-1500	36.3	52.7	N/A	N/A

HARRIS SEMICONDUCTOR

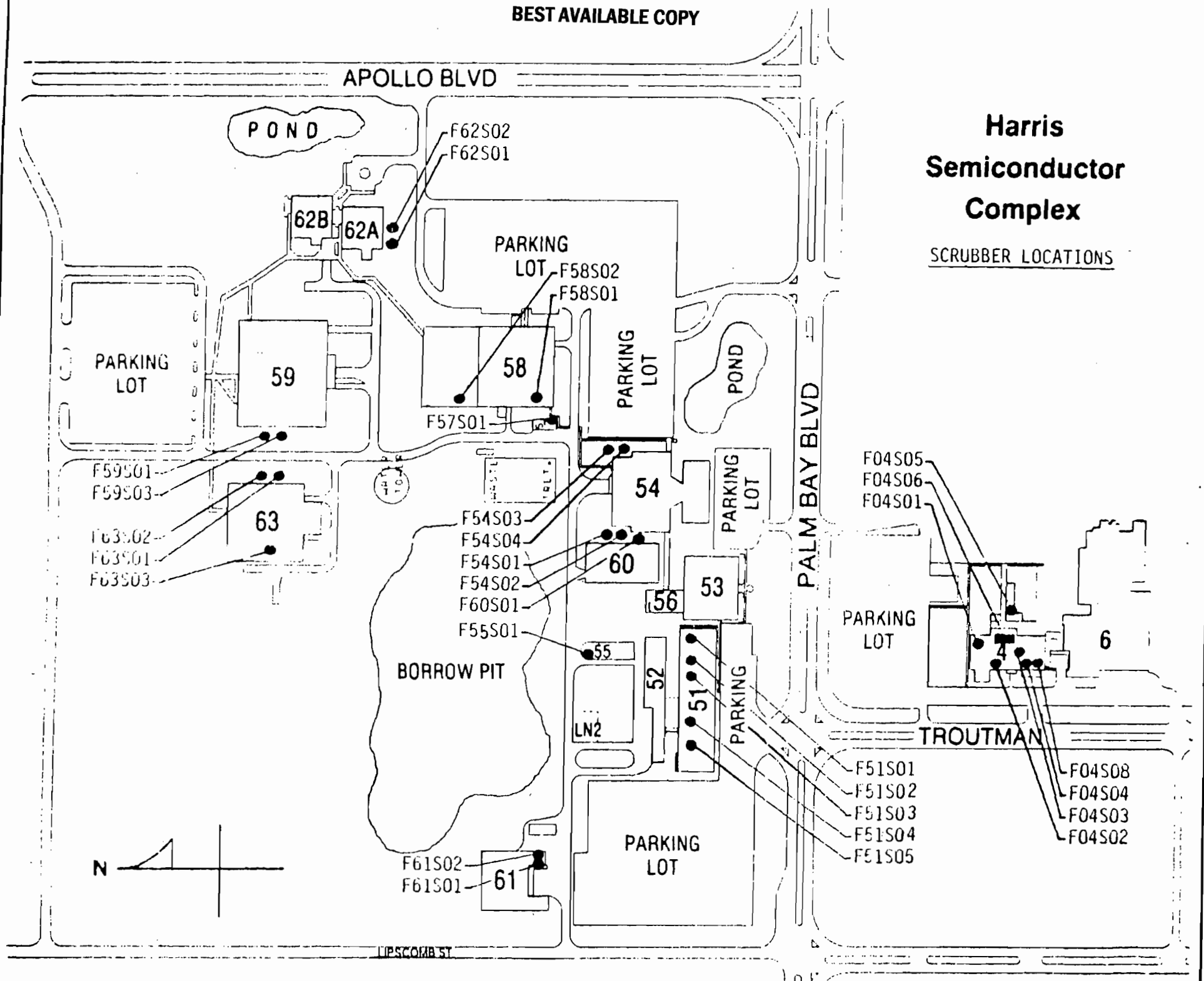
AIR PERMIT -- BUILDING 60

ATTACHMENT E

SITE LOCATION MAPS

Harris Semiconductor Complex

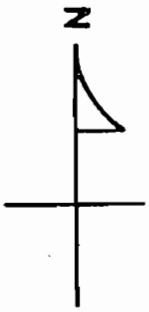
SCRUBBER LOCATIONS

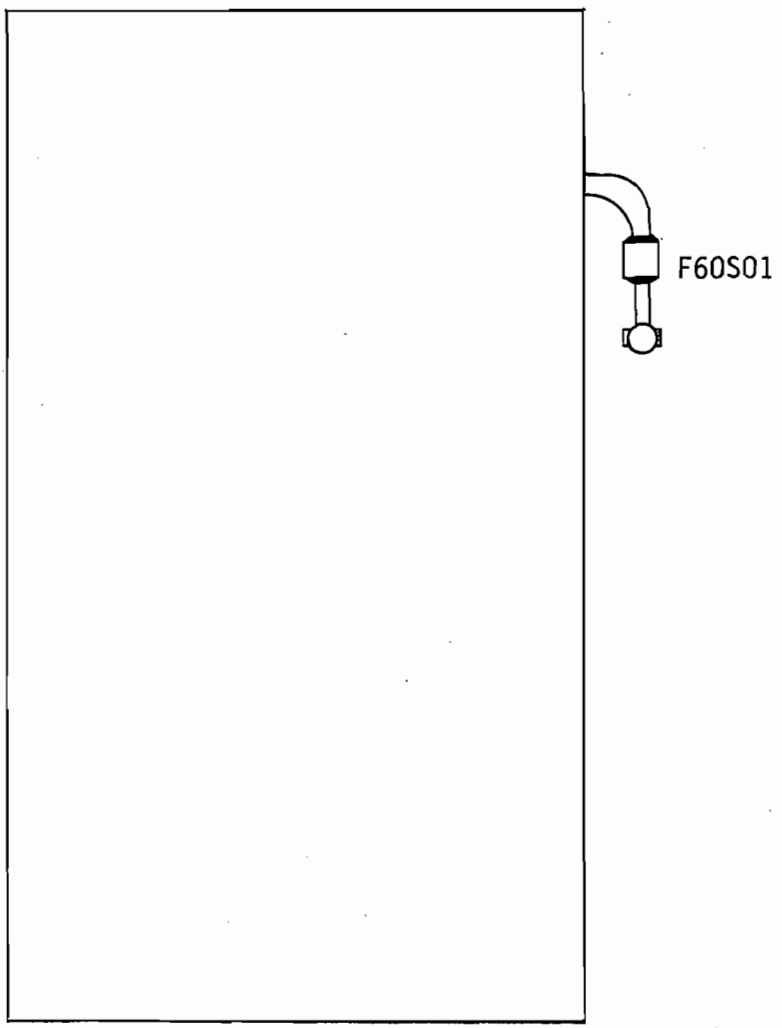


HARRIS SEMICONDUCTOR
SCRUBBER LOCATIONS
BUILDING 60

LEGEND

- Horizontal Scrubber
- Vertical Scrubber
- Exhaust Stack
- Exhaust Fan
- Stack mounted on fan
- Epitaxial Scrubber





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HARRIS

HARRIS CORPORATION
SEMICONDUCTOR SECTOR

THE FIRST NATIONAL BANK OF ATLANTA
AUGUSTA, GEORGIA

64-1327
611

063259

DATE	CHECK NO.	NET AMOUNT
07/21/89	00063259	********200.00

PAY

TWO HUNDRED AND 00/100 DOLLARS

TO THE ORDER OF

DEPT OF ENVIRONMENT REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE,
FLA

32399

HARRIS CORPORATION
SEMICONDUCTOR SECTOR

COUNTERSIGNED

AUTHORIZED SIGNATURE

[redacted]

On February 17, 1988, representatives from Harris and the Florida DER met in Orlando to discuss the status of air permits at Harris Semiconductor's facility in Palm Bay. At that meeting it was agreed that Harris would submit modified air permits. The purpose of the permit modifications was as follows:

1. Consolidate permits on a by building basis to reduce the existing number of permits.

2. To accurately quantify the current air emissions.

Enclosed is the modified permit application for Semiconductor's Building 60.

If you should have any questions about the enclosed information, please feel free to contact me at (407) 724-7229.

Sincerely,

L. R. Hutker, Director
Facilities Department

/nab

cc: A. T. Sawicki
L. R. Hutker
D. R. Erdley
R. R. Sands

1031