Technical Evaluation

and

Preliminary Determination

Semiconductor Production Process
Harris Semiconductor
Melbourne, Florida

Application Numbers:

AC 05-54990
-54991
-54992
-54993
-54994
-54995
-54996

Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting Section

NOTICE OF PROPOSED AGENCY ACTION

The Department of Environmental Regulation gives notice of its intent to issue permits to Harris Semiconductor for the installation of hood-type working stations with associated solvent and acid vapor scrubbers at their existing facility in Melbourne Brevard County, Florida. A determination of Best Available Control Technology (BACT) was not required.

A person who is substantially affected by the Department's proposed permitting decision may request a hearing in accordance with Section 120.57, Florida Statutes, and Chapters 17-1 and 28-5, Florida Administrative Code. The request for hearing must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

The applications, technical evaluation and department intent are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the following locations:

DER Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32301

DER St. Johns River District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Comments on this action shall be submitted in writing to Bill Thomas of Tallahassee office within thirty (30) days of this notice.

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

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

I. PROJECT DESCRIPTION

A. Applicant

Harris Semiconductor
P. O. Box 833
Melbourne, Florida 32901

B. Project Description and Location

The applicant intends to install hood type working stations for the manufacture of semiconductors. The working stations will be installed in existing buildings (Bldgs. 59, 62, and 63). Exhaust fumes of volatile organic compounds (VOC) and acid vapors will be vented to scrubber systems.

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

C. Process and Controls

The manufacture of the semiconductors involves the immersing of the material in various acids and/or solvents (VOC). Acid mists and VOC's are released into the air from both surface evaporation and material drying.

The released acid vapors and VOC's will be captured by a hood system and vented to a scrubber system. A material balance verification system will be employed at this facility to account for the VOC emissions released into the atmosphere. A program of sampling and analyses will be instituted to maintain proper scrubber effluents.

II. RULE APPLICABILITY

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

The proposed project is located in an area designated attainment for all pollutants. Therefore, review shall be in accordance with Rule 17-2.500, FAC, Prevention of Significant Deterioration.

The current annual VOC emissions are estimated to be 36.2 TPY (tons per year), which is by definition a minor facility according to Rule 17-2.100(100), FAC. Therefore, review shall be in accordance with Rule 17-2.500(2)(d)3., FAC, Modifications to Minor Facilities.

Table 1 reflects the potential VOC emissions from the proposed modification. Since the potential VOC emissions are 3.41 TPY, the project will be a minor modification to a minor facility and exempt from new source review requirements in accordance with Rule 17-2.500(2)(d)3., FAC. Therefore, the proposed modification will be permitted in accordance with Rule 17-2.600, FAC, Specific Source Emission Limiting Standards, or Rule 17-2.660, FAC, Standards of Performance for New Stationary Sources.

Table 1

Chemical	Potential VOC Emissions (lbs/yr)
Acetone	3332.6
Ethanol	76.2
Freon[1]	170.0
Methanol	375.1
Microstrip[2]	21.1
N-Butyl Acetate	76.7
Photoresist[2]	2303.0
Propanol	623.9
Xylene	13.6
Total[3]	6822.2 (3.41 TPY)

[1]Freon: 1,1,1-trichloroethane - exempt from Rule 17-2, FAC.
[2]Constituents are confidential.
[3]Total does not include the Freon.

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

In Rule 17-2.620(1)(a), FAC, 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. Rule 17-2.620(2), FAC, states that 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 Rule 17-2.100(108), FAC.

III. SUMMARY OF EMISSIONS

A. Emission Limitations

The regulated pollutant emissions from this modification to the existing facility are volatile organic compounds in accordance with Rule 17-2.620, FAC.

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

Table 2 reflects the allowable VOC emissions and potential acid vapor emissions from Buildings 59, 62, and 63.

Table 2

Building	Maximum VOC Allowable Emissions[1]		Potential Acid Vapor Emissions	
	lbs/yr	TPY	lbs/yr	TPY
59	6597.5	3.30	141.0	0.071
62	87.0	0.04	4.6	0.002
63	137.7	0.07	81.0	0.041

[1]VOC emissions do not include those that are exempt from Rule 17-2, FAC.

The permitted emissions are in compliance with all requirements of Rule 17-2, FAC.

B. Air Quality Impacts

From the technical review of the applications and amendments, the bureau has determined that the modification at the existing facility will not cause a violation of Florida's ambient air quality standards.

IV. CONCLUSIONS

The maximum allowable VOC emissions from this modification to the existing facility should not cause any violation of Florida's ambient air quality standards. Even though there are no emissions standards for the acids used, the applicant will be installing scrubber systems to reduce emissions and prevent odors from entering the outside atmosphere.

The use of a material balance verification system for the VOC's will account for the emissions lost to the atmosphere from the facility. A program of sampling and analyses employed by the applicant to maintain the scrubber systems should be adequate to keep emissions at their lowest and objectionable odors from escaping.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54990
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 59 Solvent
Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 59. A 20,000 CFM scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
8. P. R. Bumgarner's letter dated May 4, 1983.

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54990
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54990
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 6597.5 pounds per year.

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

3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54990
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.

5. Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.

6. A meter to measure the pressure drop shall be installed on the scrubber system.

7. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

8. Objectionable odors shall not be allowed on off-plant property.

9. Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amounts of all VOC's, by chemical, purchased and reclaimed.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

AC 05-54991

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54991
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 59 Acid Vapor
Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 59. A 40,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control acid vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
8. P. R. Bumgarner's letter dated May 4, 1983.

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54991
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54991
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54991
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The potential acid vapor emissions from the work stations and scrubber system is 141.0 pounds per year.

2. The acid vapor exhaust scrubber must be on during the working hours.

3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54991
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. A meter to measure the pressure drop shall be installed on the scrubber system.

5. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

6. Objectionable odors shall not be allowed on off-plant property.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

AC 05-54992

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54992
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 62 Solvent
Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 62. A 12,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
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PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54992
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54992
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54992
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 72.2 pounds per year.

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

3. The maximum operating hours shall be 8 hours per day, 264 days per year, for a total of 2,112 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54992
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.

5. Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.

6. A meter to measure the pressure drop shall be installed on the scrubber system.

7. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

8. Objectionable odors shall not be allowed on off-plant property.

9. Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amounts of all VOC's, by chemical, purchased and reclaimed.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

AC 05-54993

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54993
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 62 Solvent
Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 62. A 1,200 CFM fume scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
8. P. R. Bumgarner's letter dated May 4, 1983.

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54993
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54993
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54993
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54993
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 14.8 pounds per year.

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

3. The maximum operating hours shall be 8 hours per day, 264 days per year, for a total of 2,112 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54993
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.

5. Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.

6. A meter to measure the pressure drop shall be installed on the scrubber system.

7. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

8. Objectionable odors shall not be allowed on off-plant property.

9. Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amount of all VOC's, by chemical, purchased and reclaimed.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

AC 05-54994

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54994
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 62 Acid Vapor
Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 62. A 24,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control acid vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
8. P. R. Bumgarner's letter dated May 4, 1983.

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54994
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54994
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54994
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The potential acid vapor emissions from the work stations and scrubber system is 4.6 pounds per year.

2. The acid vapor exhaust scrubber must be on during the working hours.

3. The maximum operating hours shall be 8 hours per day, 264 days per year, for a total of 2,112 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54994
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. A meter to measure the pressure drop shall be installed on the scrubber system.

5. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

6. Objectionable odors shall not be allowed on off-plant property.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

AC 05-54995

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54995
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 63 Solvent
Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 63. A 10,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
8. P. R. Bumgarner's letter dated May 4, 1983.

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54995
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54995
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54995
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 237.8 pounds per year.

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

3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54995
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.

5. Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.

6. A meter to measure the pressure drop shall be installed on the scrubber system.

7. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

8. Objectionable odors shall not be allowed on off-plant property.

9. Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amounts of all VOC's, by chemical, purchased and reclaimed.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

AC 05-54996

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

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

Permit Number: AC 05-54996
Date of Issue:
Expiration Date: June 1, 1984
County: Brevard
Latitude/Longitude: 28° 01' 20"N/
80° 36' 10"W
Project: Building 63 Acid Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 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 construction of hood type work stations for the manufacture of semiconductors in Building 63. A 50,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control acid vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

Attachments are as follows:

1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
2. William Thomas' letter dated May 21, 1982.
3. P. R. Bumgarner's letter dated August 2, 1982.
4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
5. Bruce Mitchell's memo to file dated September 29, 1982.
6. C. H. Fancy's letter dated December 17, 1982.
7. P. R. Bumgarner's letter dated January 7, 1983.
8. P. R. Bumgarner's letter dated May 4, 1983.

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54996
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

GENERAL CONDITIONS:

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

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

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

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

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

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

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

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

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

PERMITTEE: Harris Semiconductor **I. D. Number:**
Permit Number: AC 05-54996
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

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

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

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

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

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

13. This permit also constitutes:

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

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

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

PERMITTEE: Harris Semiconductor I. D. Number:
Permit Number: AC 05-54996
Date of Issue:
Expiration Date: June 1, 1984

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

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

SPECIFIC CONDITIONS:

1. The potential acid vapor emissions from the work stations and scrubber system is 81.0 pounds per year.

2. The acid vapor exhaust scrubber must be on during the working hours.

3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:
Permit Number: AC 05-54996
Date of Issue:
Expiration Date: June 1, 1984

SPECIFIC CONDITIONS:

4. A meter to measure the pressure drop shall be installed on the scrubber system.

5. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.

6. Objectionable odors shall not be allowed on off-plant property.

Issued this ___ day of_____, 1983.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

ATTACHMENT 1

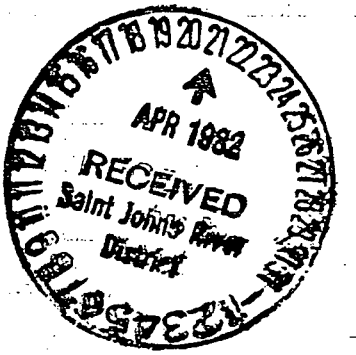
HARRIS

April 16, 1982

DER

APR 26 1982

BAQM



Mr. Charles M. Collins
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Mr. Collins:

Enclosed you will find four (4) each copies of seven applications to construct air pollution sources. These permits are for exhaust vapor scrubbers associated with Buildings 59, 62 & 63 currently under construction at the Harris Semiconductor Division in Palm Bay, Florida.

Should you have any questions concerning these applications, please contact Robert Sands, our Environmental Engineer, at (305) 729-5736.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner
Manager
Facilities Engineering

PRB/lmp

Attachments

AC 05-54990

BEST AVAILABLE COPY

AC 05-54990

PAID
APR 21 1982
SAINT JOHNS
RIVER DISTRICT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER
APR 26 1982
BAQM

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

APR 1982
RECEIVED
Saint Johns River
District

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

APPLICATION TYPE: [ ] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 59, Solvent Vapor Exhaust Scrubber (FS-59-1)

SOURCE LOCATION: Street Palm Bay Road City Palm Bay

UTM: East 17-538700 North 17-B1009-00

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

APPLICANT NAME AND TITLE: P. R. Bumgarner, Manager Facilities, Engineering

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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P. R. Bumgarner

P.R. Bumgarner, Mgr. Facilities Engineering
Name and Title (Please Type)

Date: 2-22-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-30 Box 883, Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2/22/82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 59 will utilize laboratory hood type work stations to provide clean room conditions for the manufacture of semiconductors. All chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted through a 20,000 CFM scrubber manufactured by Beverly Pacific.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/Wet Scrubber $30,200

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

Building 59 is new construction located approximately 1000 ft. from Building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ; if seasonal, describe: ____

G. 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 Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a

2. Product Weight (lbs/hr): Semiconductor wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
See AttachmentA				n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Beverly Pacific Corp.	Solvent vapor	85%	n/a	Mfg. design
Model # PS24VT/CB36				Data

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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 n/a Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.
Scrubber water discharged to industrial wastewater treatment facility.

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

Stack Height: 35'0" ft. Stack Diameter: 30" ft.

Gas Flow Rate: 16,000/20,000 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

ATTACHMENT A

HARRIS SEMICONDUCTOR

EXHAUST SCRUBBER - BUILDING 59

SYSTEM 1 SOLVENTS

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetone	34.01	0.023	0.073	0.154	0.049
Methanol	1.56	0.149	0.473	0.995	3.15
Trichloroethylene	6.9	0.049	0.156	0.469	1.487
Xylene	1.71	0.101	0.320	0.672	2.128
Propanol	35.03	0.028	0.090	0.186	0.590
Butyl Acetate	12.80	0.025	0.081	0.170	0.538
Freon	.27	0.017	0.054	0.113	0.359
Photoresist	3.27	0.18	0.570	1.2	3.802
Microstrip confidential	42.47	0.132	0.420	0.876	2.799

RRS-2/10/82

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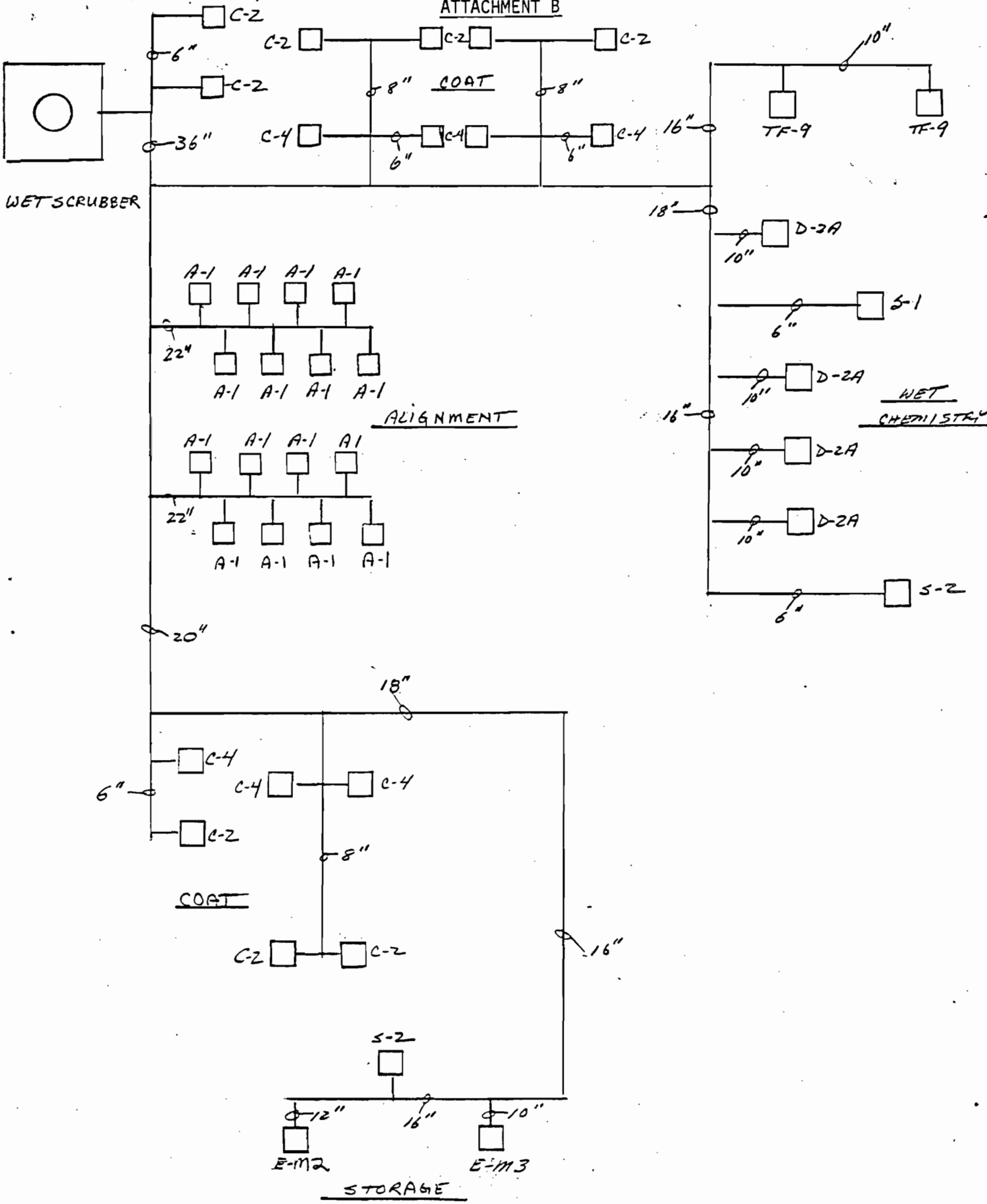
BUILDING 59 SOLVENT EXHAUST SYSTEM

ATTACHMENT B



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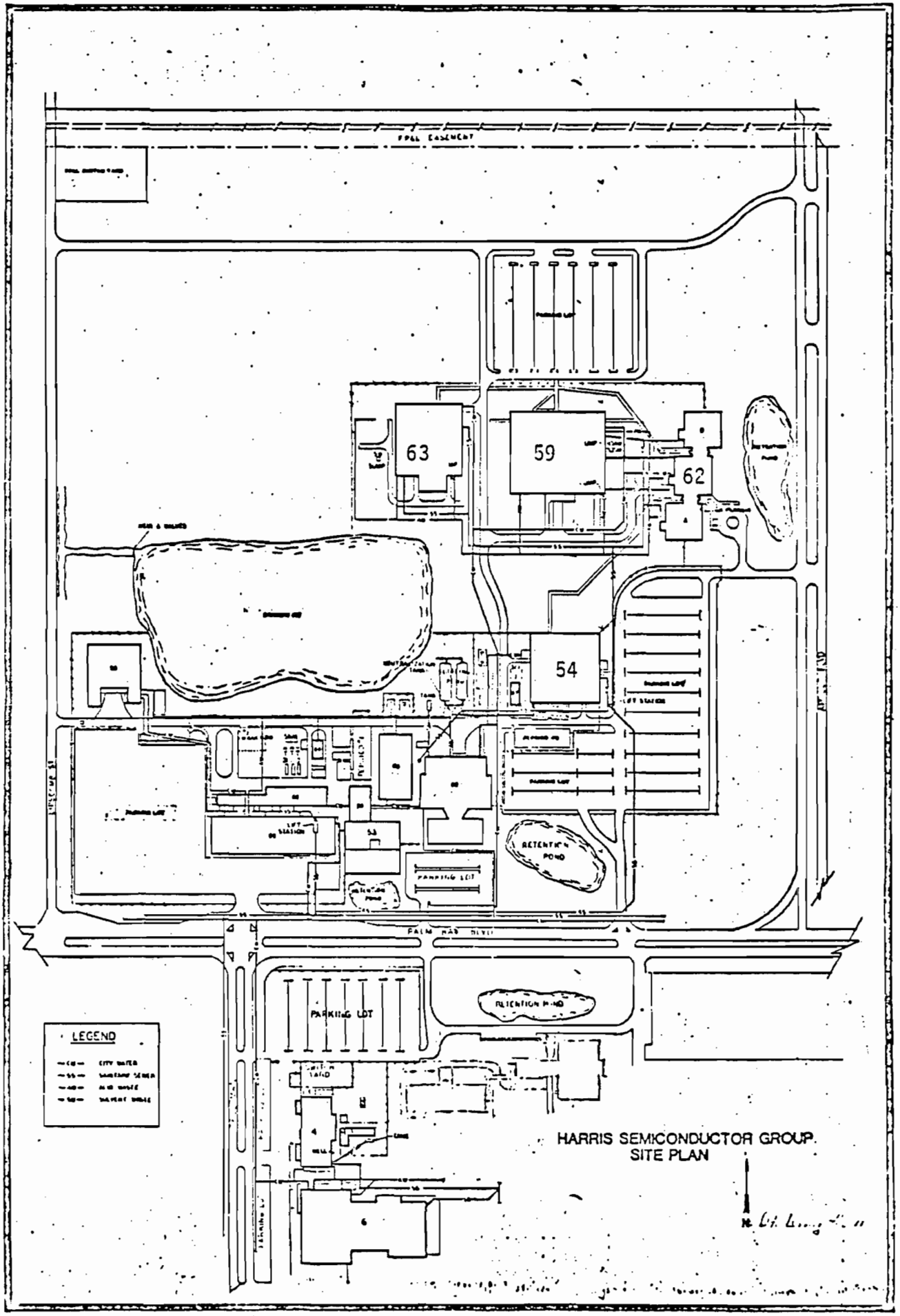

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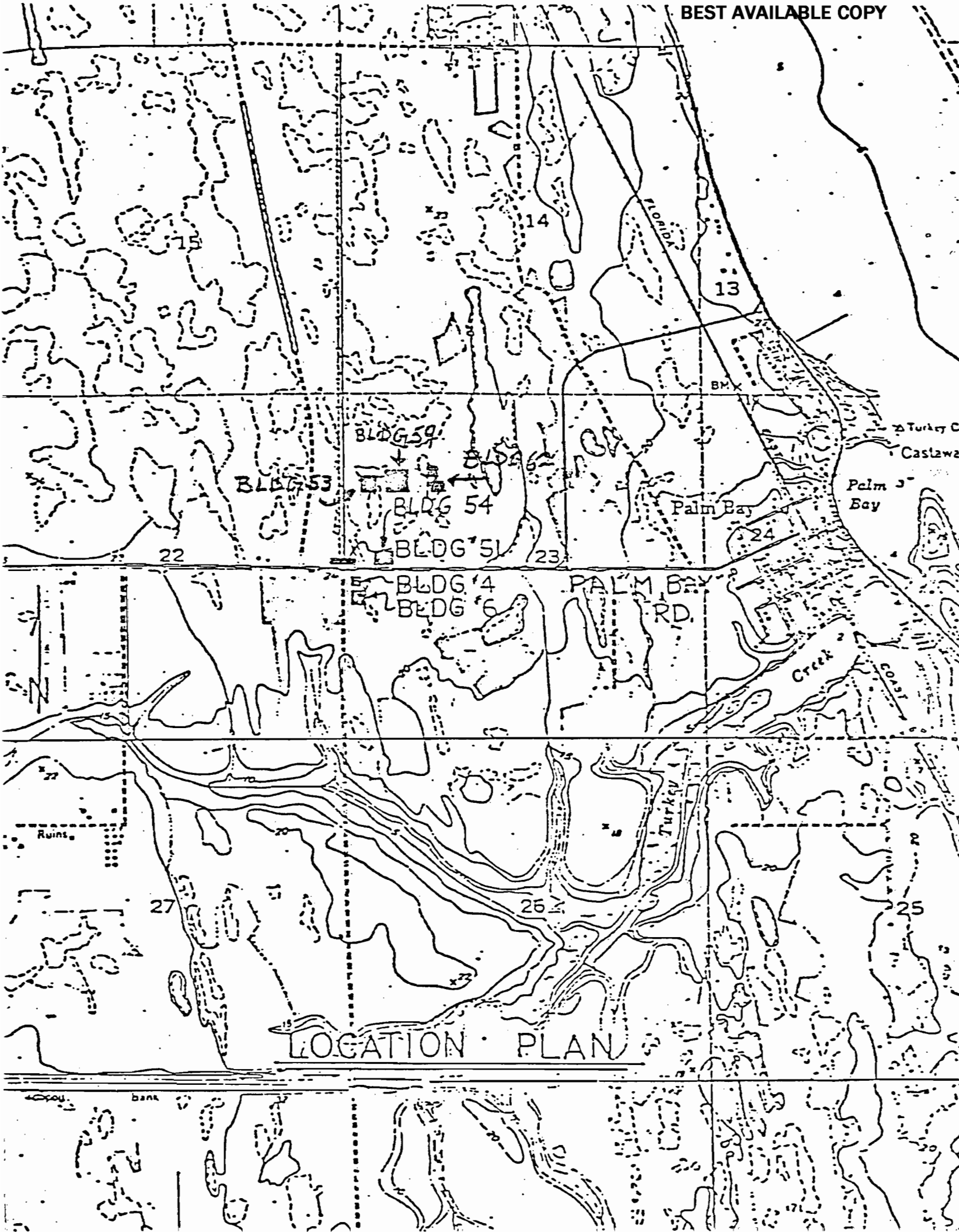

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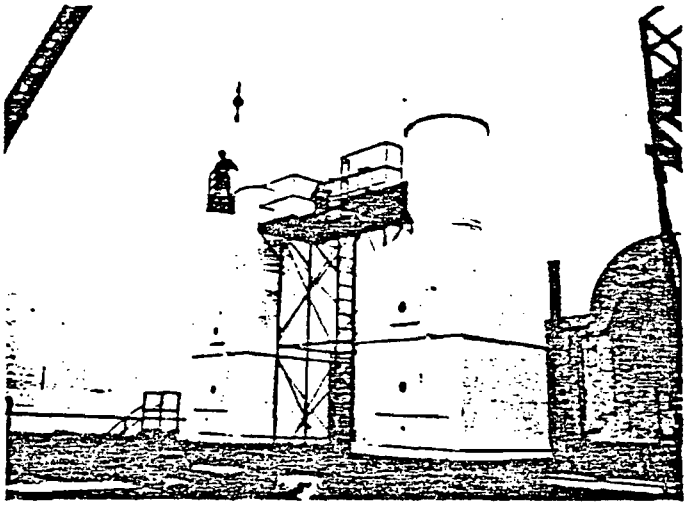
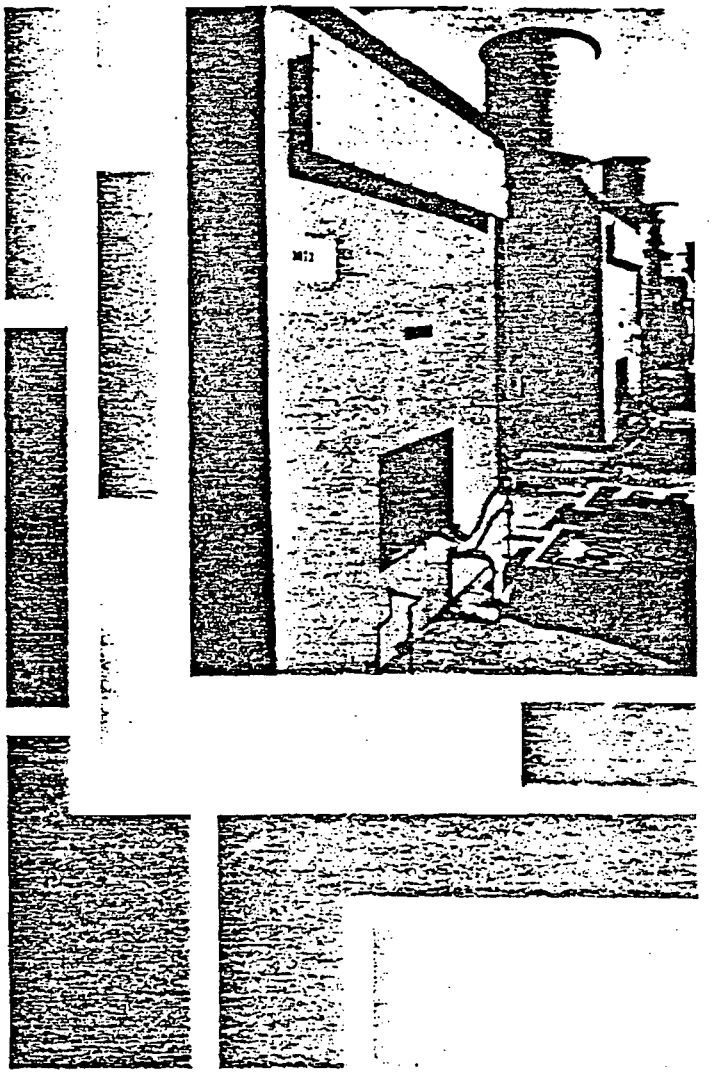




AIR POLLUTION CONTROL EQUIPMENT

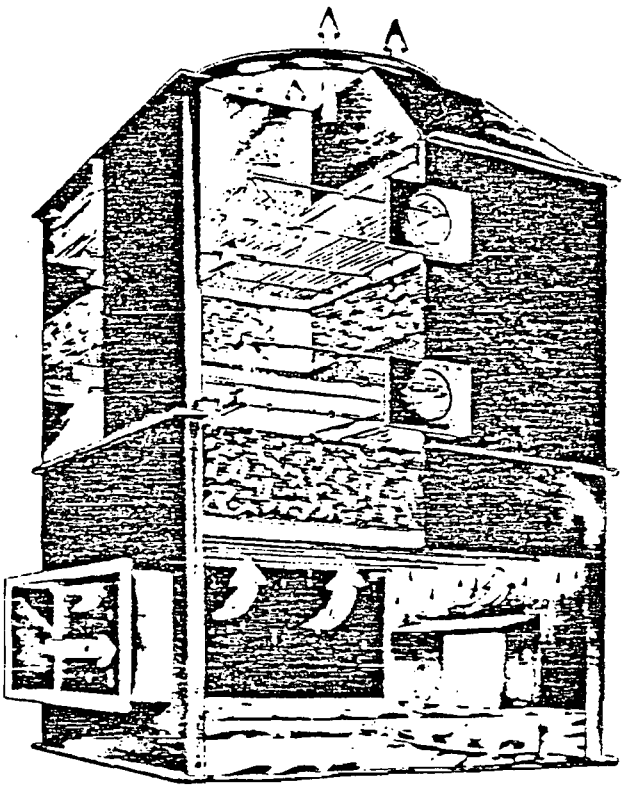
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

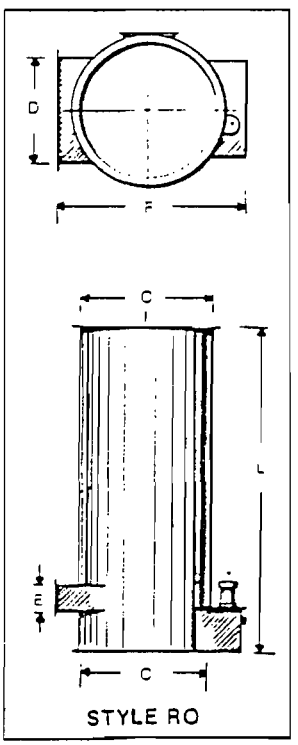
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅜
I	10⅜	12⅜	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM	7	15	25	35	45	75	105	135	175	225
MAKE-UP GPM	0.7	1.5	2.0	3.0	4.0	7.0	10.0	13.0	17.0	22.0
HT OP. WT.	388	745	1110	1570	2690	4085	5670	7595	11790	16040
HT SHIP WT.	220	385	550	770	1210	1925	2750	3795	5390	7040
VT OP. WT.	318	660	1060	1500	2630	3910	5470	7400	11650	15800
VT SHIP WT.	150	300	500	700	1150	1750	2550	3600	5250	6800



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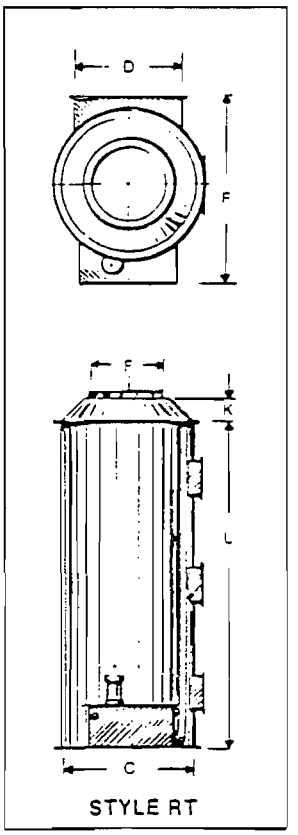

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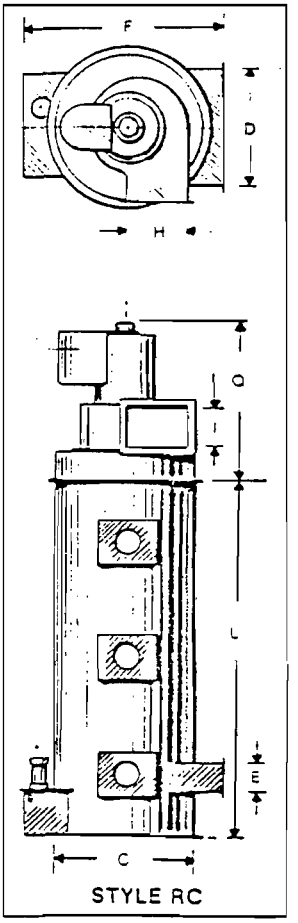

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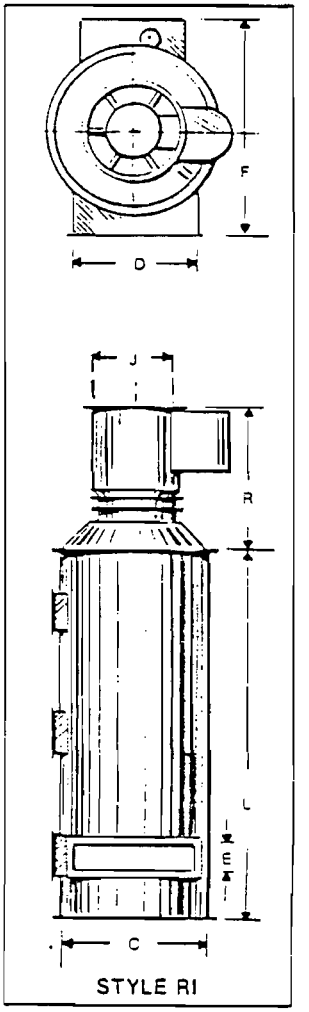

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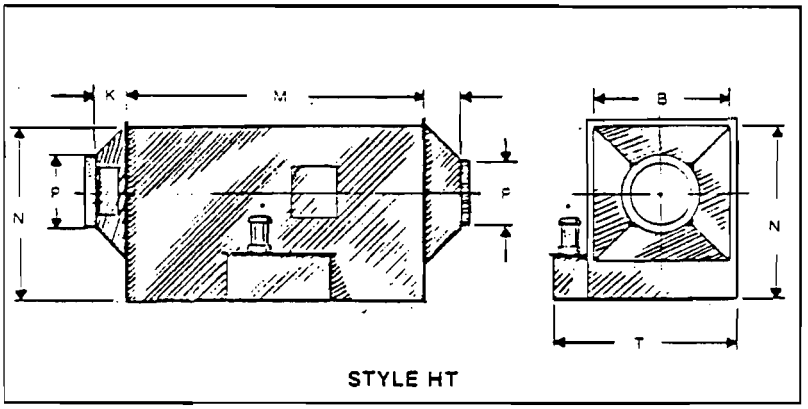

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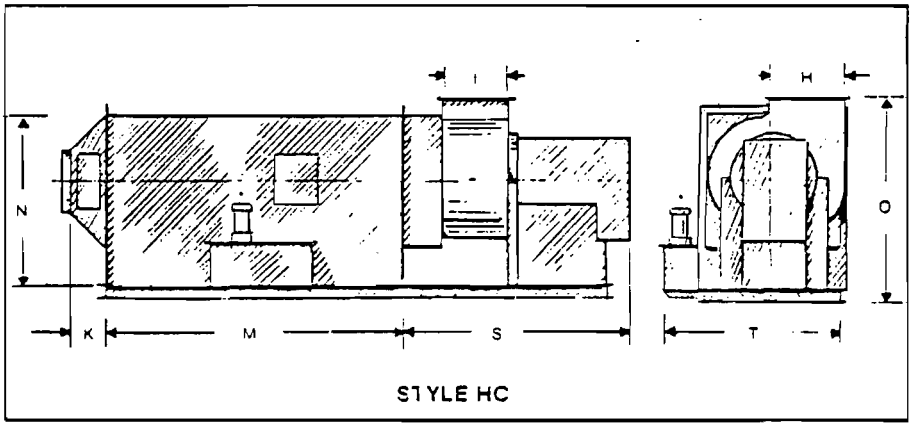
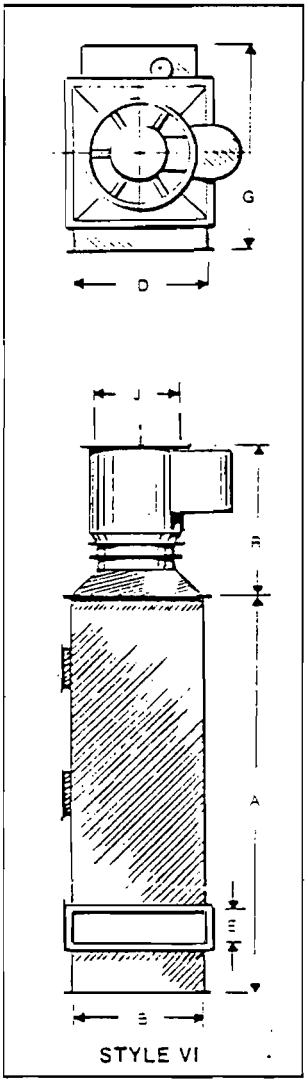


STYLE HC

*May require one or more pumps.



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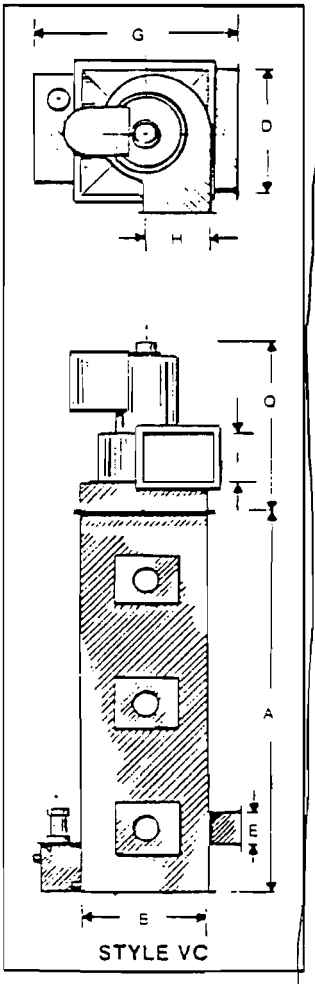
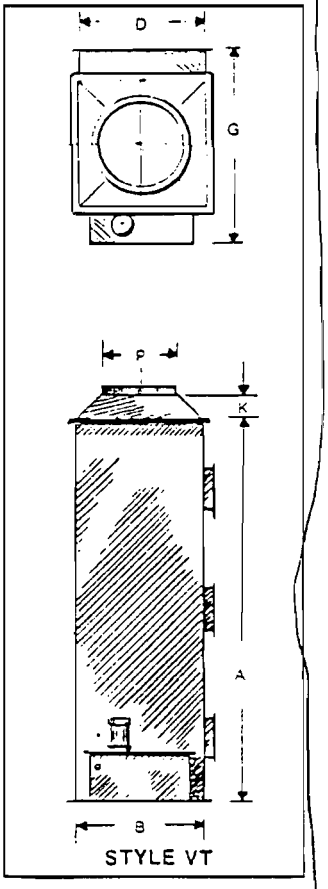


STYLE VC



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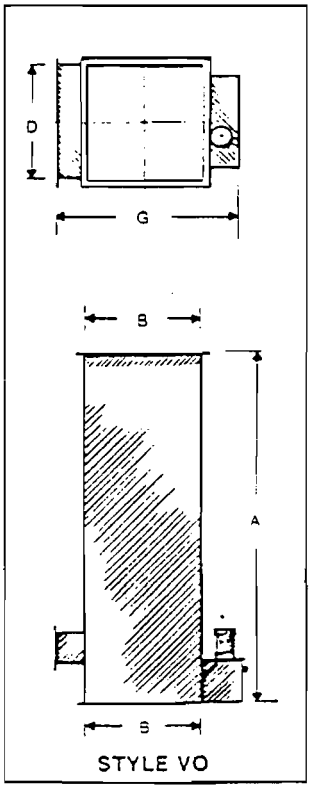

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COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54991

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RECEIVED
APR 21 1982
SAINT JOHNS
RIVER DISTRICT

DER

APR 26 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
BAQM

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

RECEIVED
APR 1982
Saint Johns River District

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

APPLICATION TYPE: [X] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 59 Acid Vapor Exhaust Scrubber (FS-59-2)

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: P.R. Bumgarner, Mgr. Facilities Engineering

APPLICANT ADDRESS: PT-030 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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P.R. Bumgarner

P.R. Bumgarner, Mgr. Facilities Engineering
Name and Title (Please Type)

Date: 2-22-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-30 Box 883, Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2/22/82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 59 will utilize laboratory hood type work stations to provide clean room conditions for the manufacture of semiconductors, all chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted via a 40,000CFM fume scrubber manufactored by BEVERLY PACIFIC.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/Wet Scrubber $31,300.00

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

Building 59 is new construction approximately 1000 ft. from building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ; if seasonal, describe: ____

G. 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 Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a

2. Product Weight (lbs/hr): Semiconductor wafer is 12 gms

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
See AttachmentA			n/a	n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Beverly Pacific Corp.	Acid mist	95%	n/a	Mfg. design
Model #PS40 HT/CB49				Data

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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.

Scrubber water discharged to industrial wastewater treatment facility.

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

Stack Height: 35' 0" ft. Stack Diameter: 3' 8" ft.

Gas Flow Rate: 30,000/40,000 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

ATTACHMENT A

HARRIS SEMICONDUCTOR

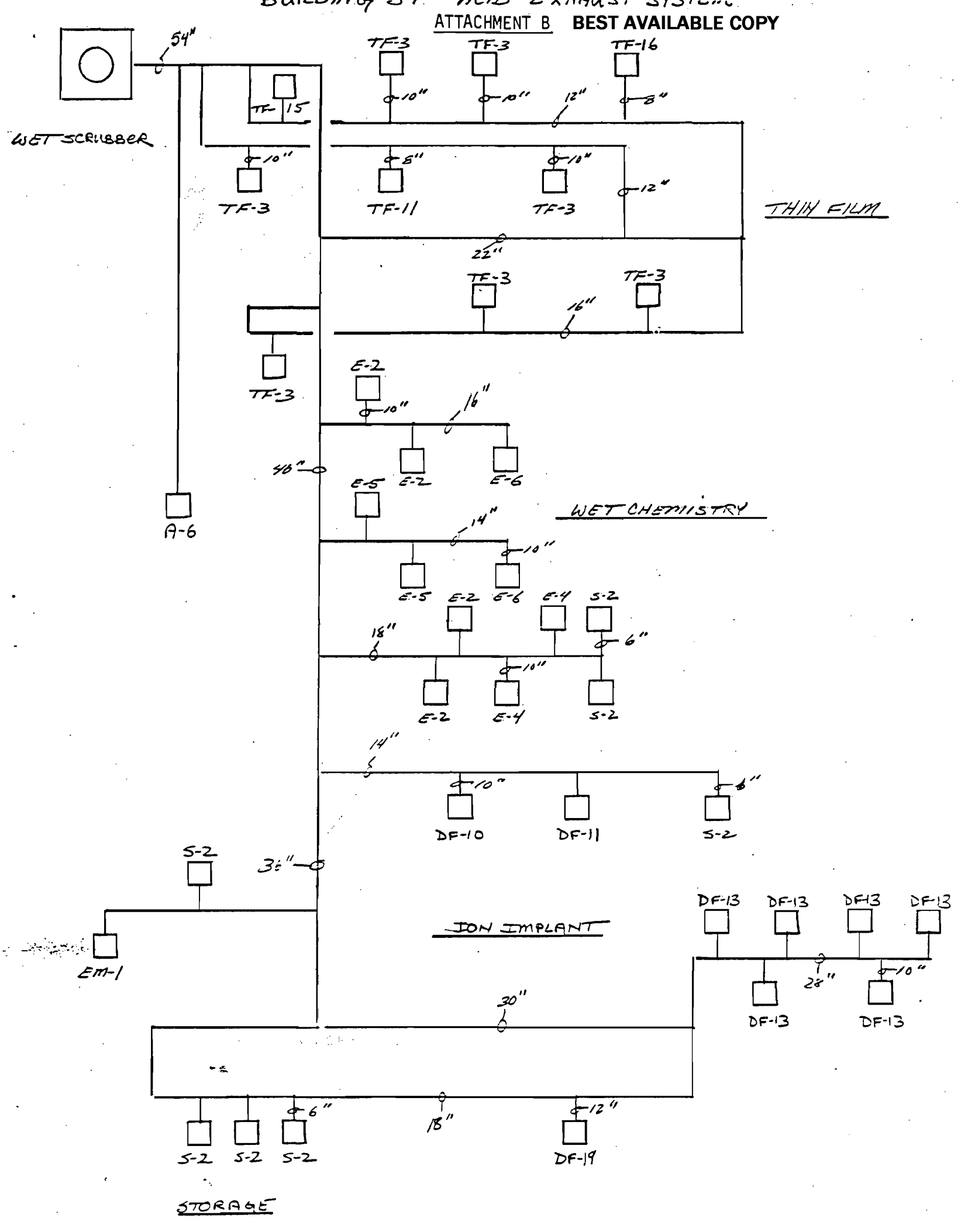
EXHAUST SCRUBBER - BUILDING 59

SYSTEM 2 ACID

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetic Acid	4.18	0.003	0.009	0.060	0.189
Ammonium Fluoride	14.9	0.014	0.045	0.283	0.897
Hydrofluoric	17.29	0.007	0.021	0.131	0.414
Nitric	26.51	0.009	0.027	0.173	0.548
Sodium Hydroxide	25.31	0.009	0.027	0.173	0.548
Sulfuric	169.89	0.021	0.067	0.425	1.346
Hydrochloric	3.86	0.001	0.0032	0.02	0.063
Phosphoric	21.5	0.007	0.021	0.13	0.412

Building 37 Acid Exhaust System

ATTACHMENT B **BEST AVAILABLE COPY**



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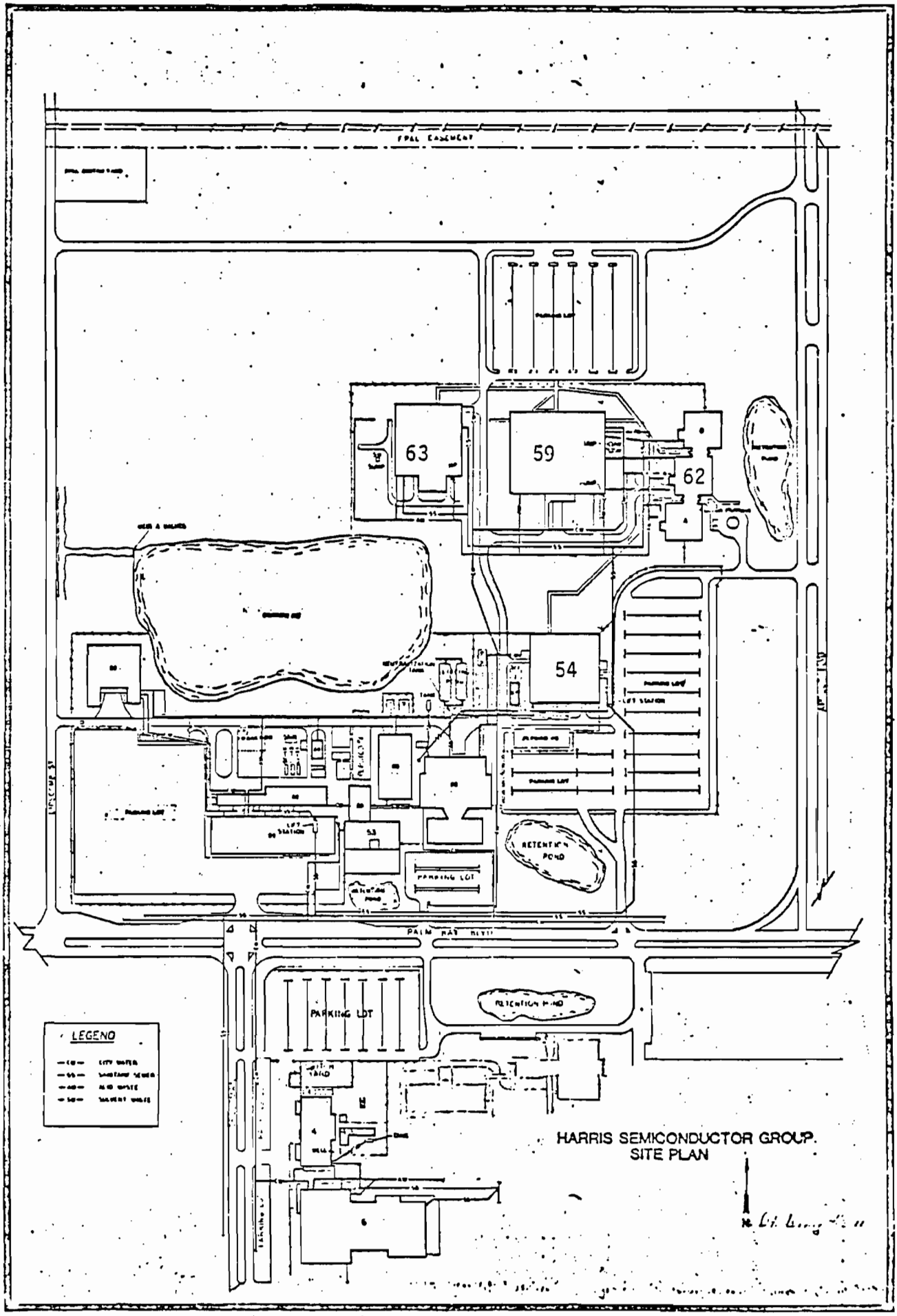

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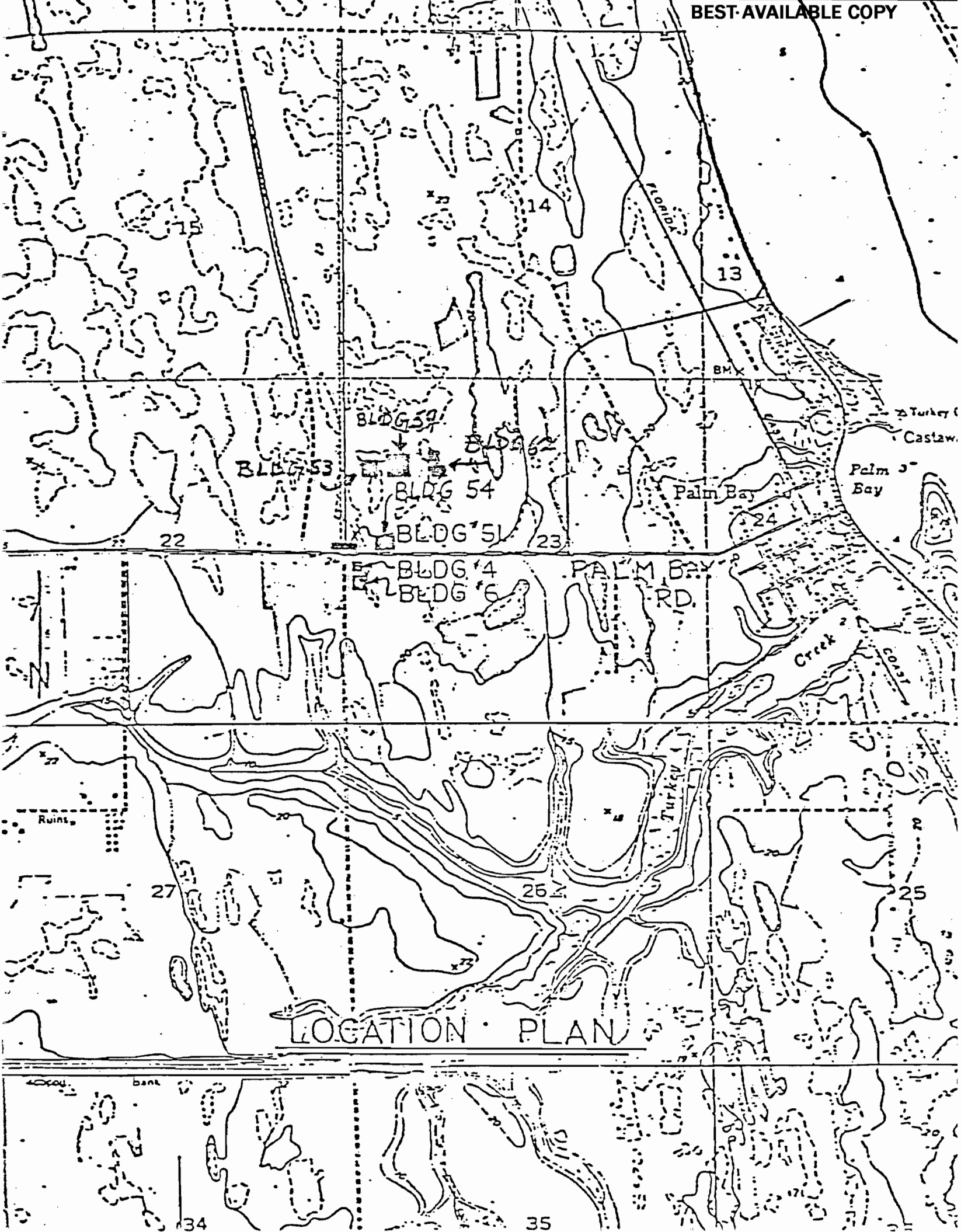

LOCATION PLAN

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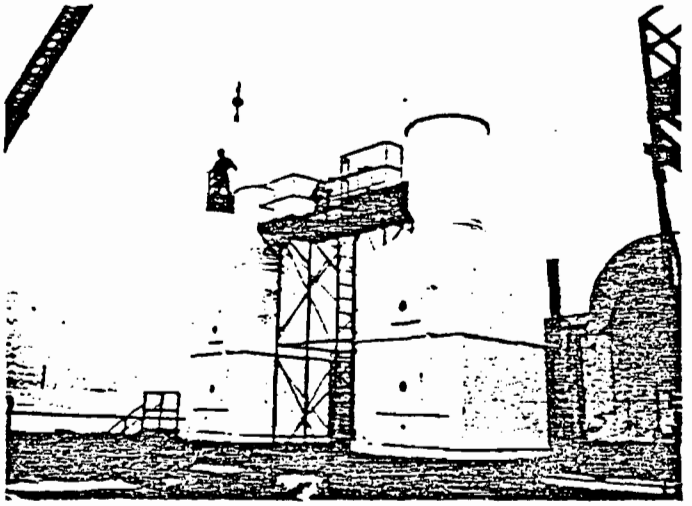
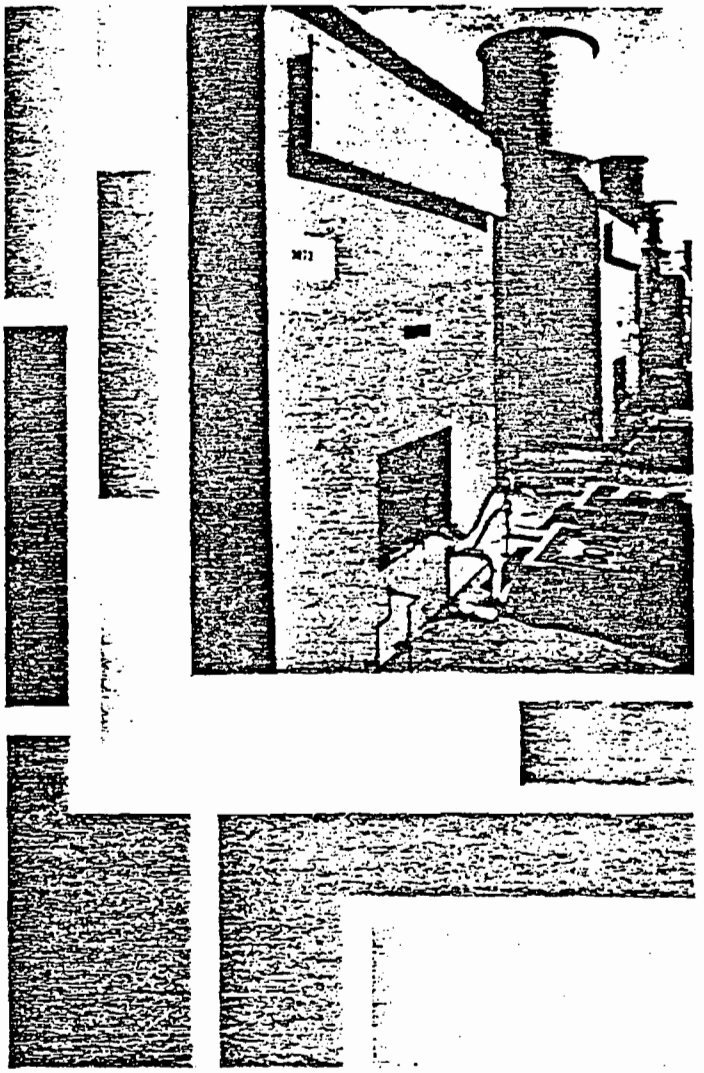




AIR POLLUTION CONTROL EQUIPMENT

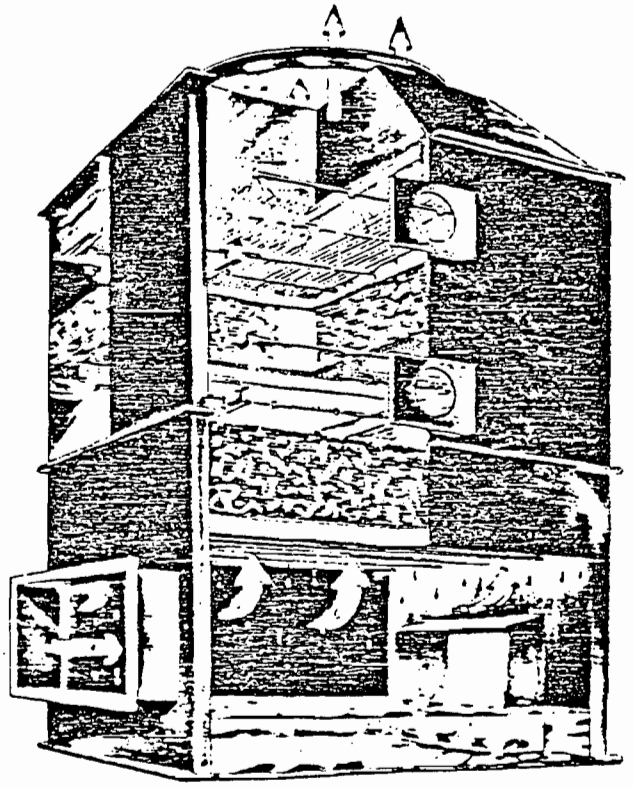
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

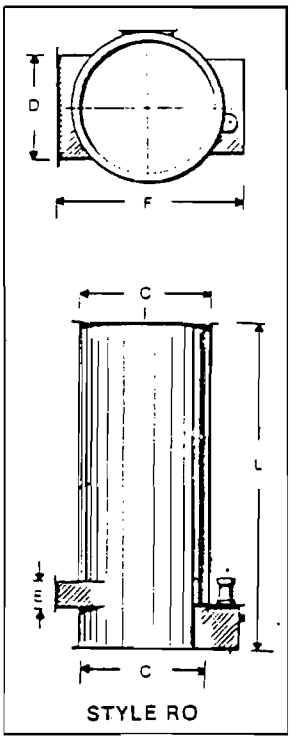
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅜
I	10⅜	12⅜	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM	7	15	25	35	45	75	105	135	175	225
MAKE-UP GPM	0.7	1.5	2.0	3.0	4.0	7.0	10.0	13.0	17.0	22.0
HT OP. WT.	388	745	1110	1570	2690	4085	5670	7595	11790	16040
HT SHIP WT.	220	385	550	770	1210	1925	2750	3795	5390	7040
VT OP. WT.	318	660	1060	1500	2630	3910	5470	7400	11650	15800
VT SHIP WT.	150	300	500	700	1150	1750	2550	3600	5250	6800



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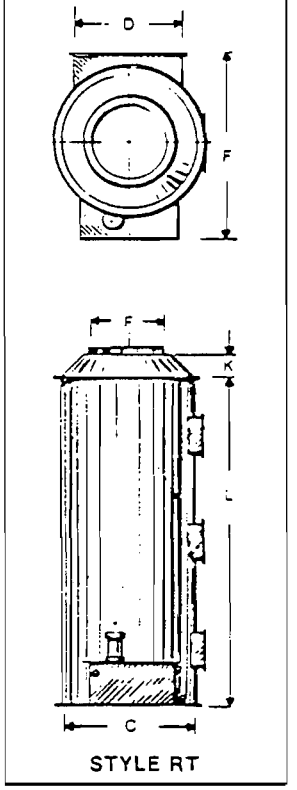

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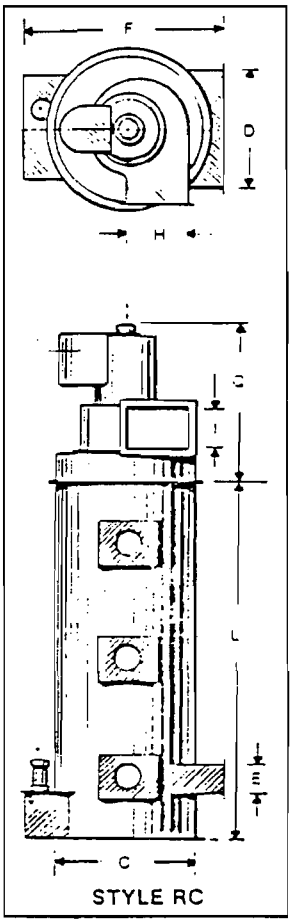

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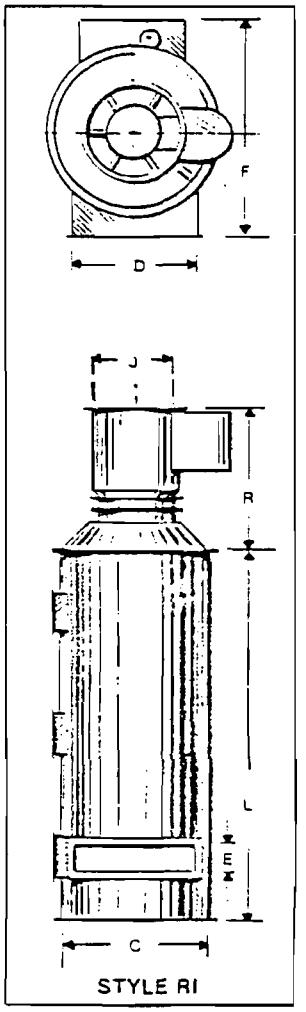

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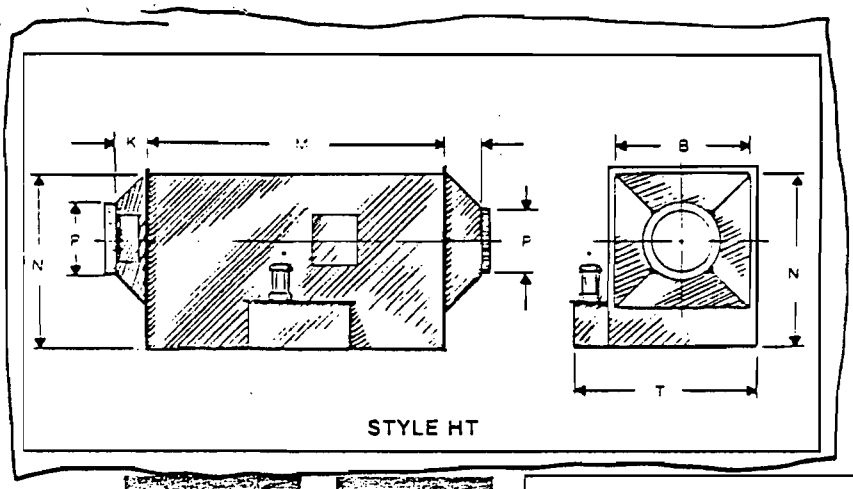

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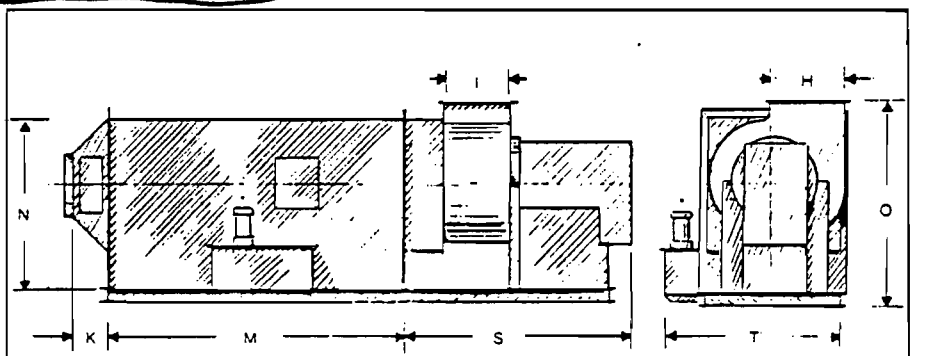

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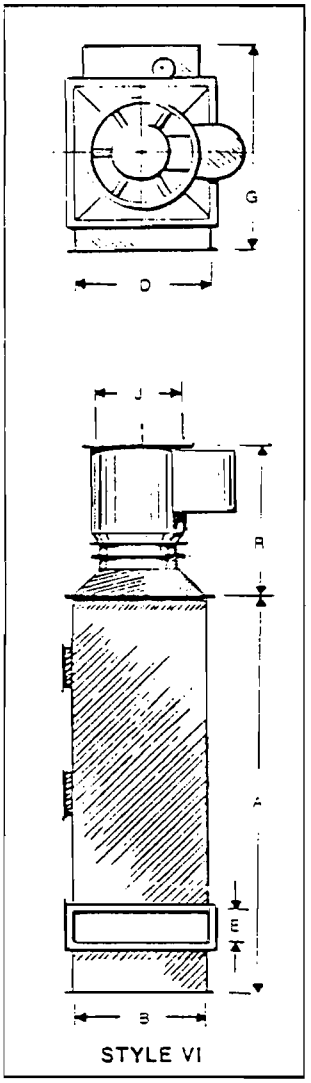
*May require one or more pumps.



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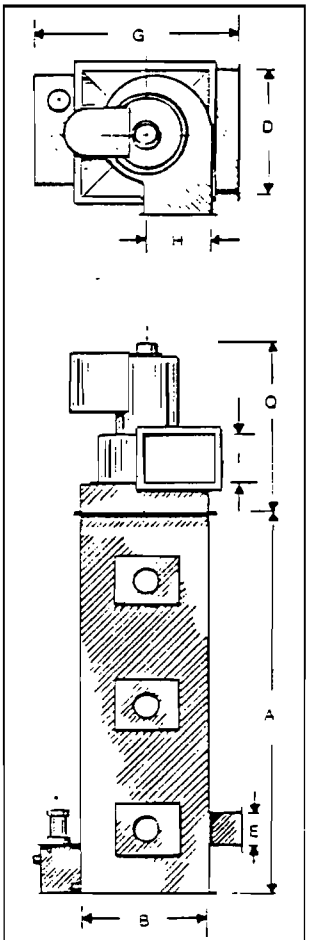

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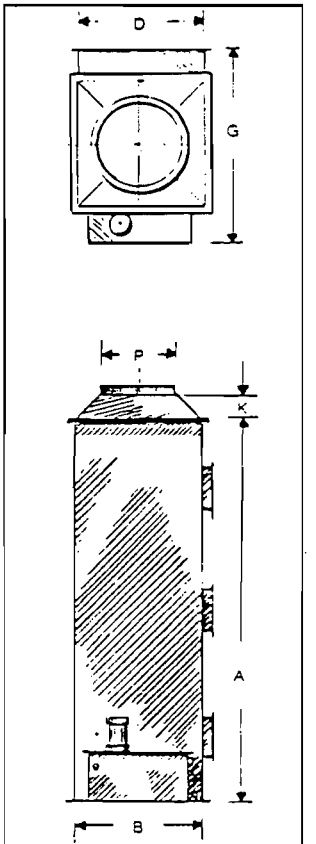

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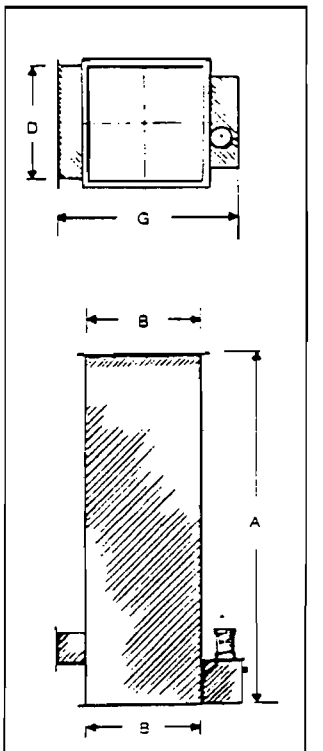

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COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54992

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PAID
APR 21 1982
SAINT JOHNS RIVER DISTRICT

DER

APR 26 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

BAQM

RECEIVED
APR 1982
Saint Johns River District

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

APPLICATION TYPE: [X] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 62 Solvent Vapor Exhaust Scrubber (FS-62A -1)

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: P. R. Bumgarner, Manager Facilities Engineering

APPLICANT ADDRESS: PT-030 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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P. R. Bumgarner

P. R. Bumgarner, Mgr., Facilities Engineering
Name and Title (Please Type)

Date: 2-22-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-30 Box 883, Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2/22/82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 62 will utilize laboratory hood type work stations to provide clean room conditions for the manufacture of semiconductors. All chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted via A. 12,000 CFM fume scrubber manufactured by Beverly Pacific.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/West Scrubber $21,000.00

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

Building 62 is new construction located approximated 1000 feet from Building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes x No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

G. 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 Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a

2. Product Weight (lbs/hr): Semiconductor wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
See Attachment A				n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Beverly Pacific Corp.	Solvent vapors	85%	n/a	Mfg. Design
Model #PS12 VT/CB27				Data

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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 n/a Maximum _____

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

Scrubber water discharged to industrial wastewater treatment facility.

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

Stack Height: 35'0" ft. Stack Diameter: 28" ft.

Gas Flow Rate: 8500/12,000 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

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ATTACHMENT A

HARRIS SEMICONDUCTOR

EXHAUST SCRUBBER - BUILDING 62A

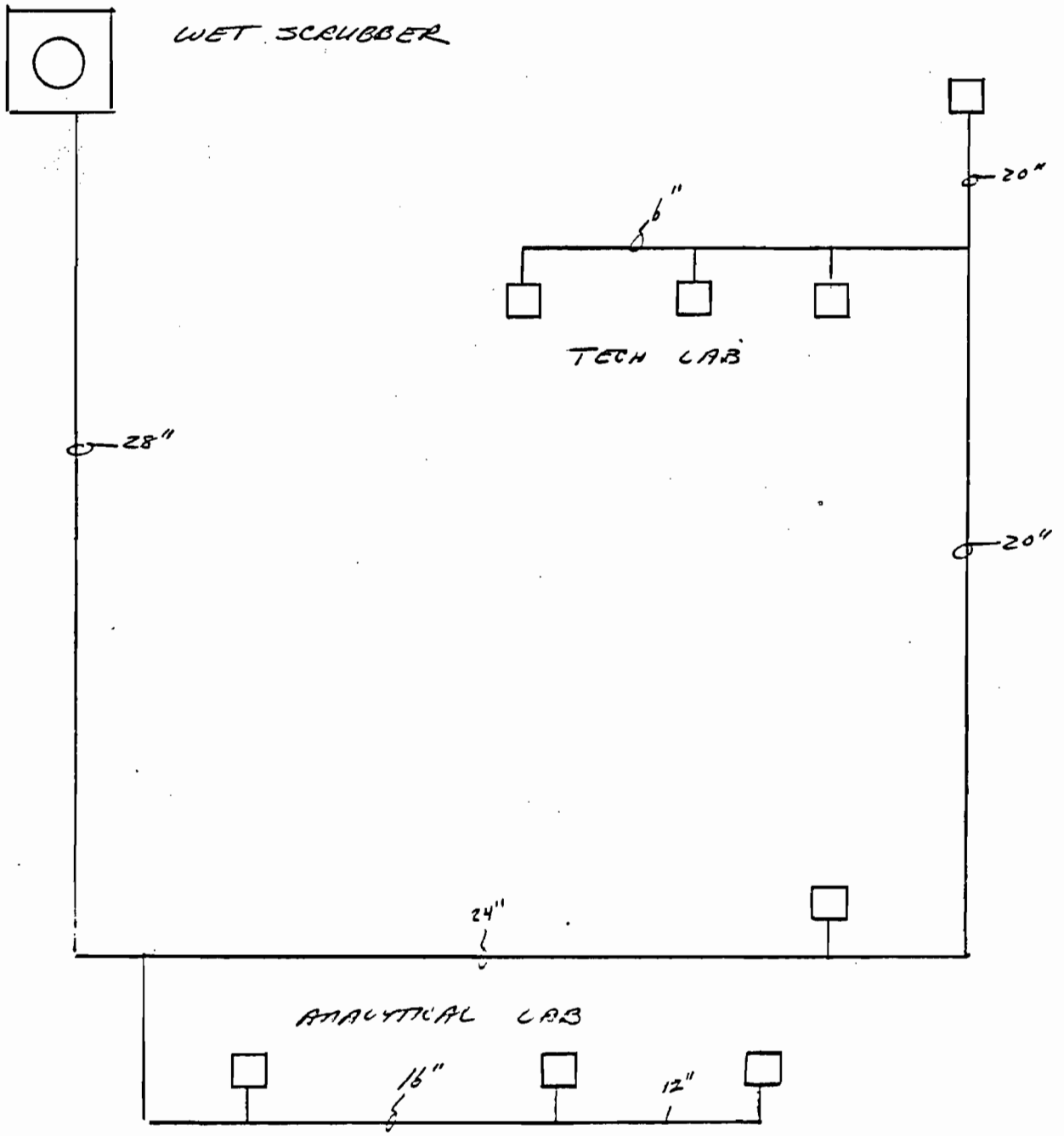
SYSTEM 1 SOLVENT

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetone	1.07	0.013	0.042	0.087	0.277
Methanol	1.11	0.085	0.269	0.567	1.796
Trichloroethylene	25.7	0.040	0.127	0.267	0.847
Xylene	1.22	0.057	0.182	0.382	1.212
Propanol	7.81	0.016	0.050	0.106	0.336
Butyl Acetate	3.29	0.015	0.049	0.103	0.326
Freon	1.67	0.0096	0.031	0.065	0.204
Photoresist	1.78	0.18	0.570	1.2	3.802
Microstrip	.74	0.075	0.239	0.503	1.594

RPS 3/10/82

BUILDING 62-A SOLVENT EXHAUST SYSTEM

ATTACHMENT B



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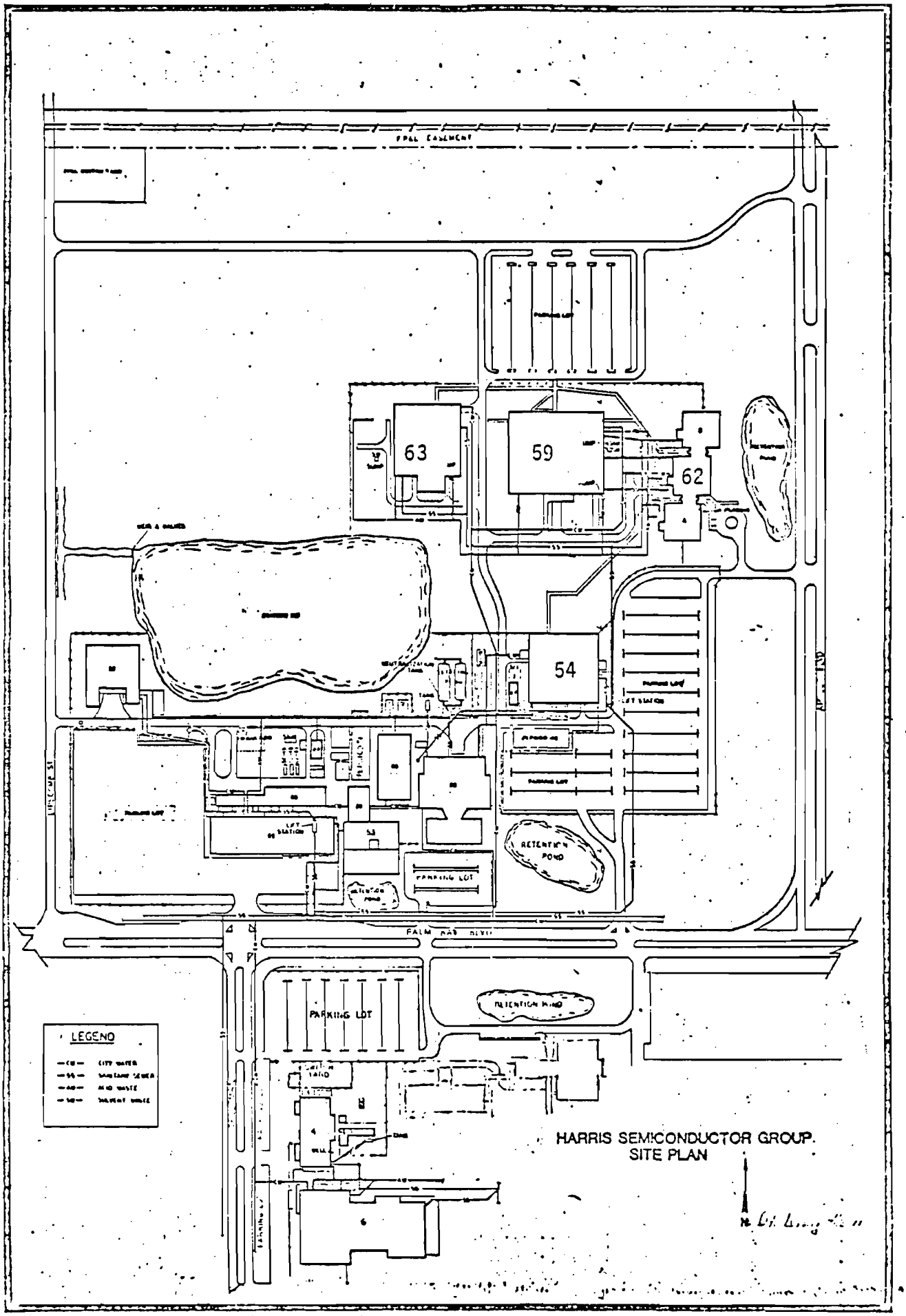

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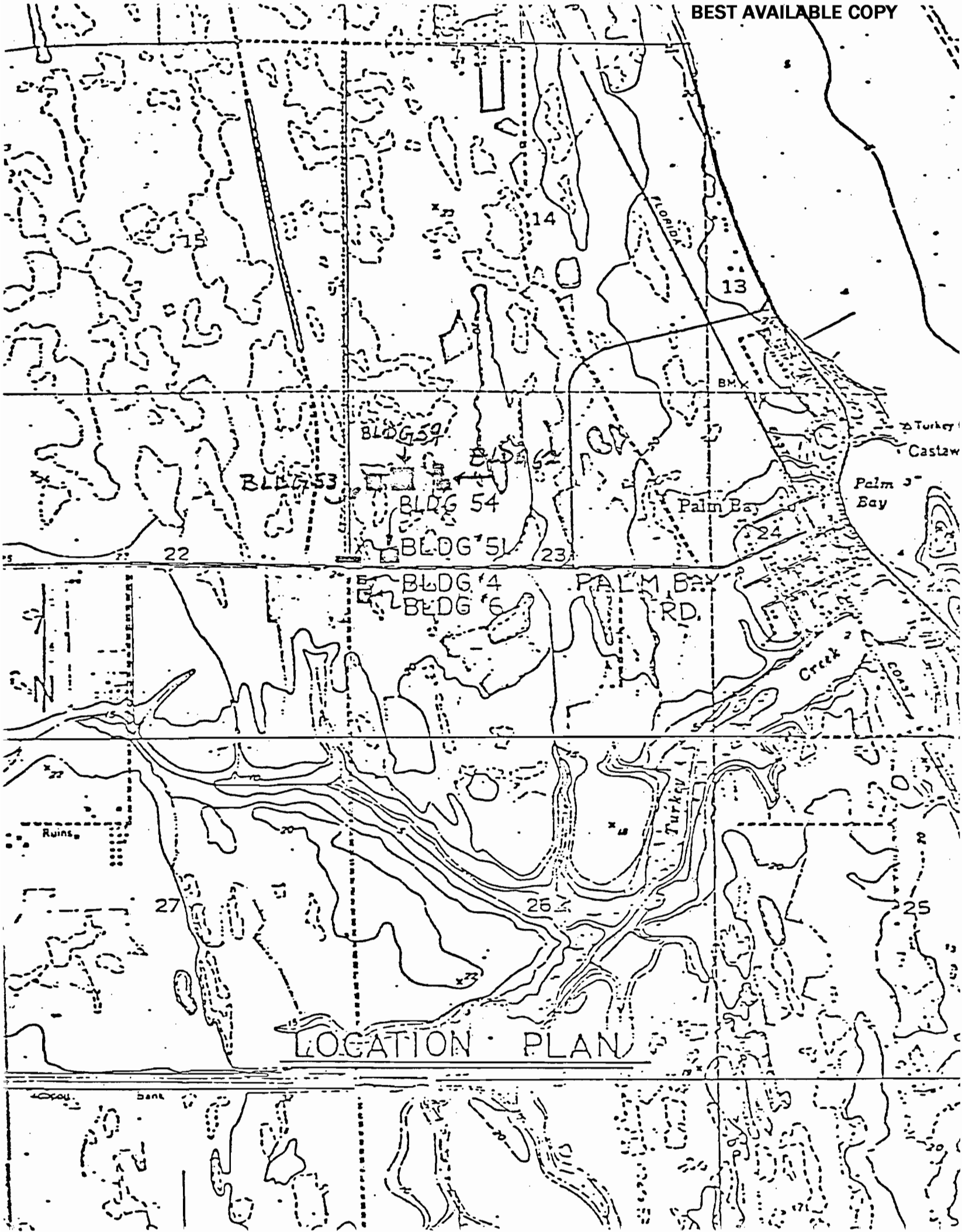

LOCATION PLAN

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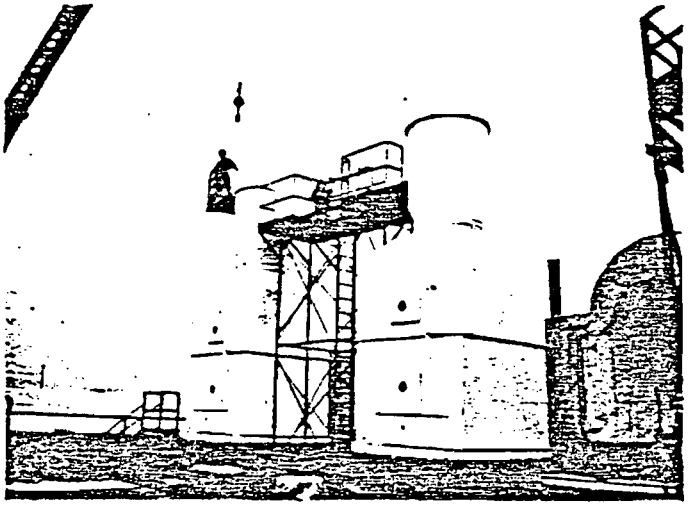
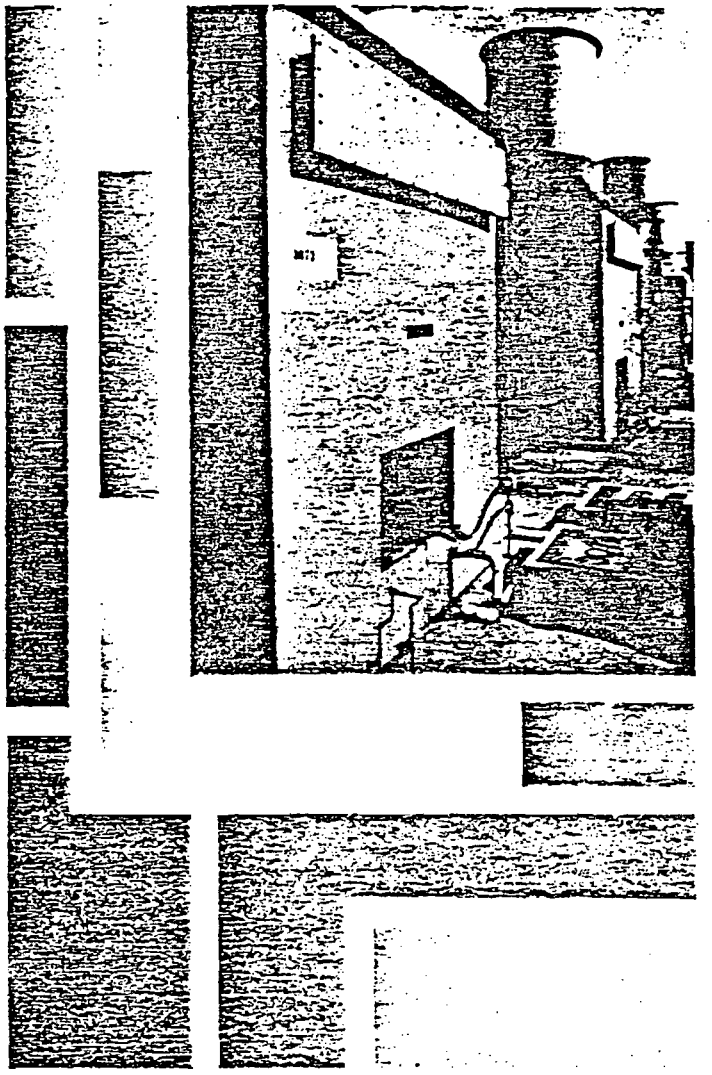




AIR POLLUTION CONTROL EQUIPMENT

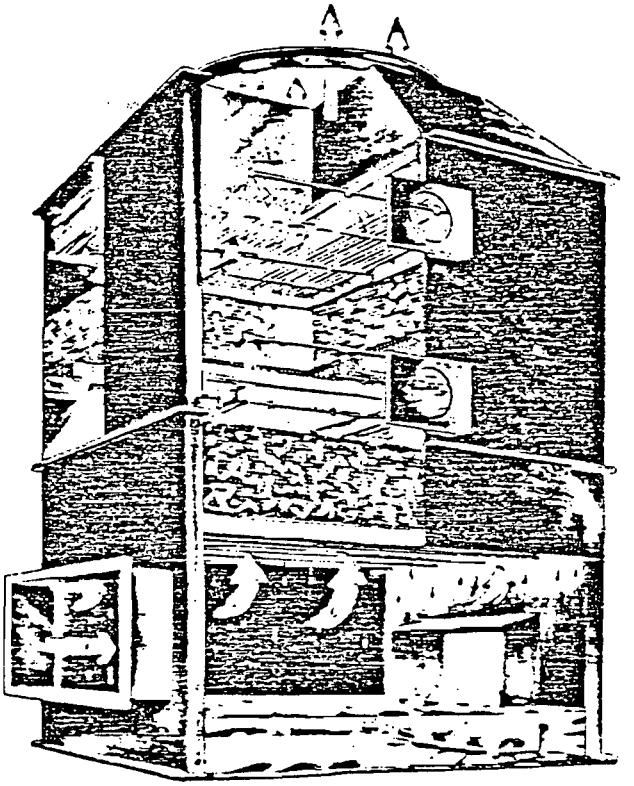
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

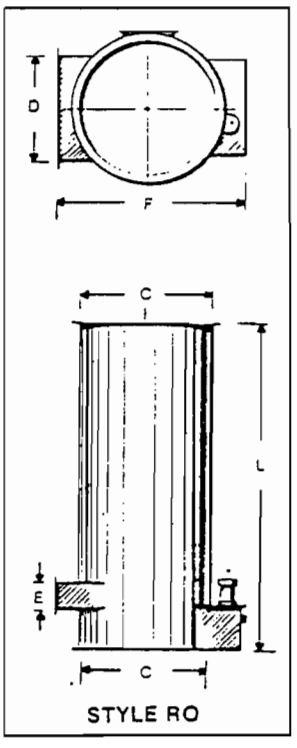
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅛
I	10⅜	12⅞	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM	7	15	25	35	45	75	105	135	175	225
MAKE-UP GPM	0.7	1.5	2.0	3.0	4.0	7.0	10.0	13.0	17.0	22.0
HT OP. WT.	388	745	1110	1570	2690	4085	5670	7595	11790	16040
HT SHIP WT.	220	385	550	770	1210	1925	2750	3795	5390	7040
VT OP. WT.	318	660	1060	1500	2630	3910	5470	7400	11650	15800
VT SHIP WT.	150	300	500	700	1150	1750	2550	3600	5250	6800



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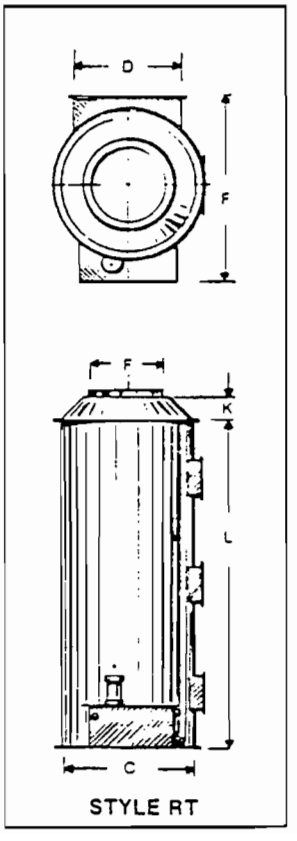

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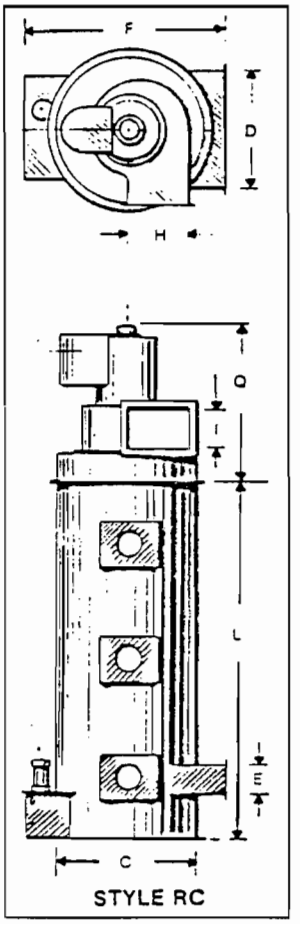

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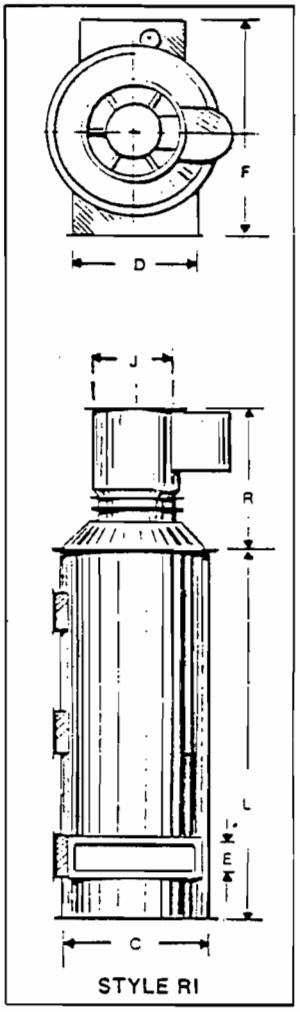

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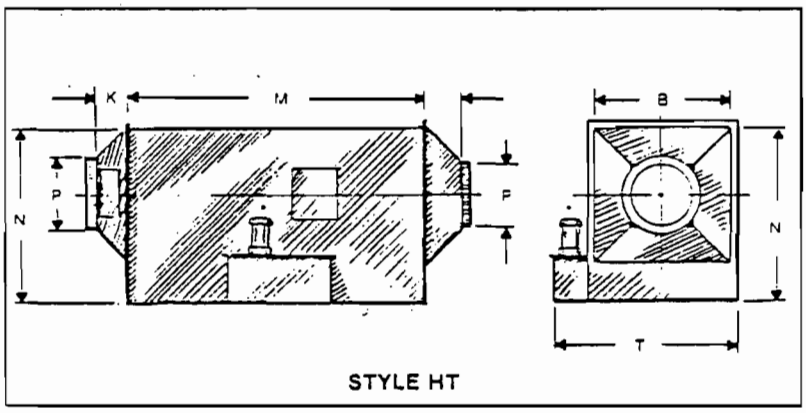

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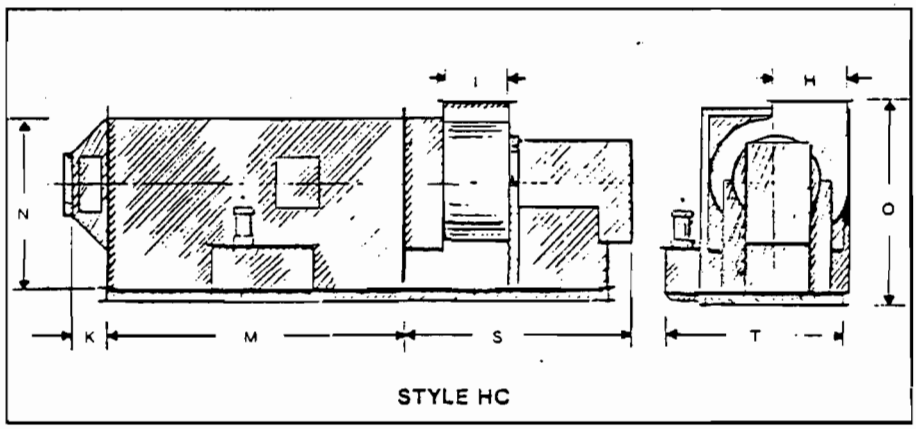

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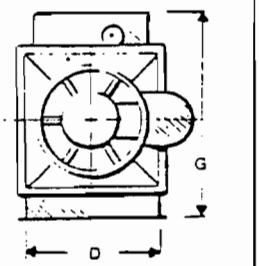
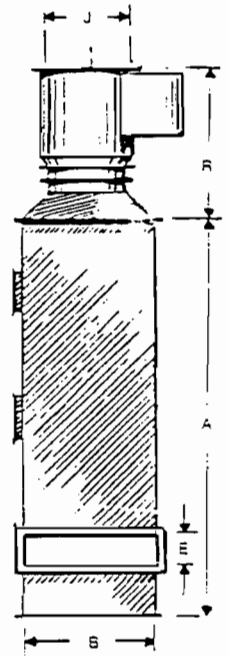
*May require one or more pumps.





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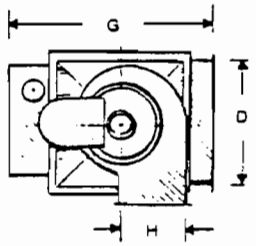

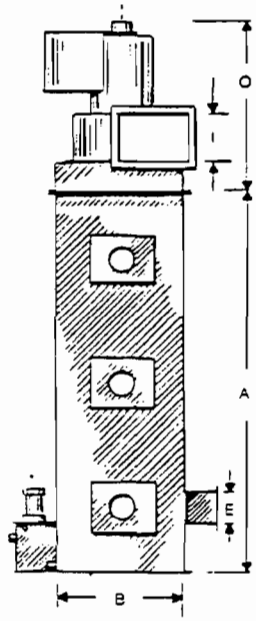

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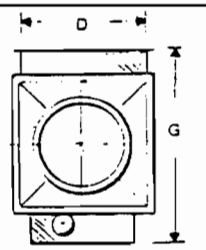

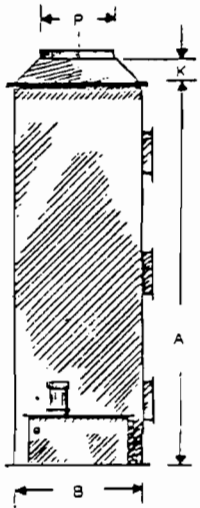

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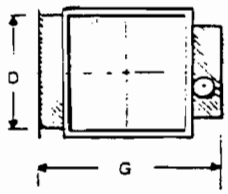

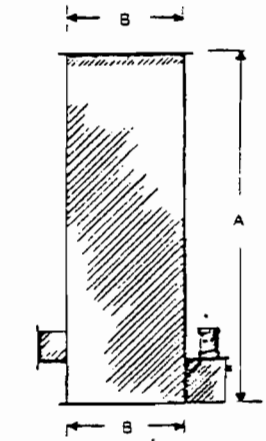

STYLE VO

COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54993

BEST AVAILABLE COPY

AC05-54993

PAID

APR 21 1982

SAINT JOHNS RIVER DISTRICT

DER

APR 26 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

BAQM

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

RECEIVED APR 19 1982 ST. JOHNS RIVER DISTRICT

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

APPLICATION TYPE: [X] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 62 Solvent Vapor Exhaust Scrubber (FS-62B-1)

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: P. R. Bumgarner, Manager Facilities Engineering

APPLICANT ADDRESS: PT-030 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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P. R. Bumgarner

P. R. Bumgarner, Manager Facilities Eng.
Name and Title (Please Type)

Date: 2-22-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-030 Box 883, Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2-22-82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 62 will utilize laboratory hood type work stations to provide clean room conditions for the manufacture of semiconductures. All chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted via A. 1200 CFM fume scrubber manufactured by Beverly Pacific.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/Wet Scrubber $12,000.00

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

Building 62 is new construction located approximately 1000 ft. from Building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

G. 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 availeble control technology (BACT) apply to this source? If yes, see Section VI. no
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a

2. Product Weight (lbs/hr): Silicone wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
See AttachmentA				n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Beverly Pacific Corp.	Solvent vapor	85%	n/a	Mfg. Design
Model #PS-2VT/CB-12				

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5]If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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 n/a Maximum _____

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

Scrubber water discharged to industrial wastewater treatment facility.

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

Stack Height: 15'0" ft. Stack Diameter: 14" ft.

Gas Flow Rate: 1200 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

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ATTACHMENT A

HARRIS SEMICONDUCTOR

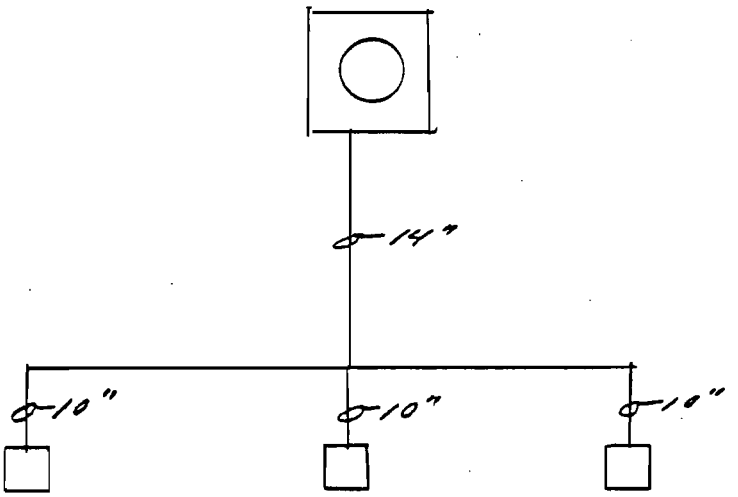
EXHAUST SCRUBBER - BUILDING 62B

SYSTEM 3 SOLVENT

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetone	.164	0.002	0.005	0.01	0.033
Methanol	.130	0.010	0.032	0.066	0.210
Trichloroethylene	3.2	0.005	0.015	0.031	0.099
Xylene	.15	0.007	0.021	0.045	0.142
Propanol	.97	0.002	0.006	0.012	0.039
Butyl Acetate	.44	0.002	0.005	0.011	0.036
Freon	.17	0.001	0.004	0.007	0.024
Ethanol	.91	0.0008	0.003	0.006	0.018

BUILDING 62-B SOLVENT EXHAUST SYSTEM

ATTACHMENT B



TECH LAB

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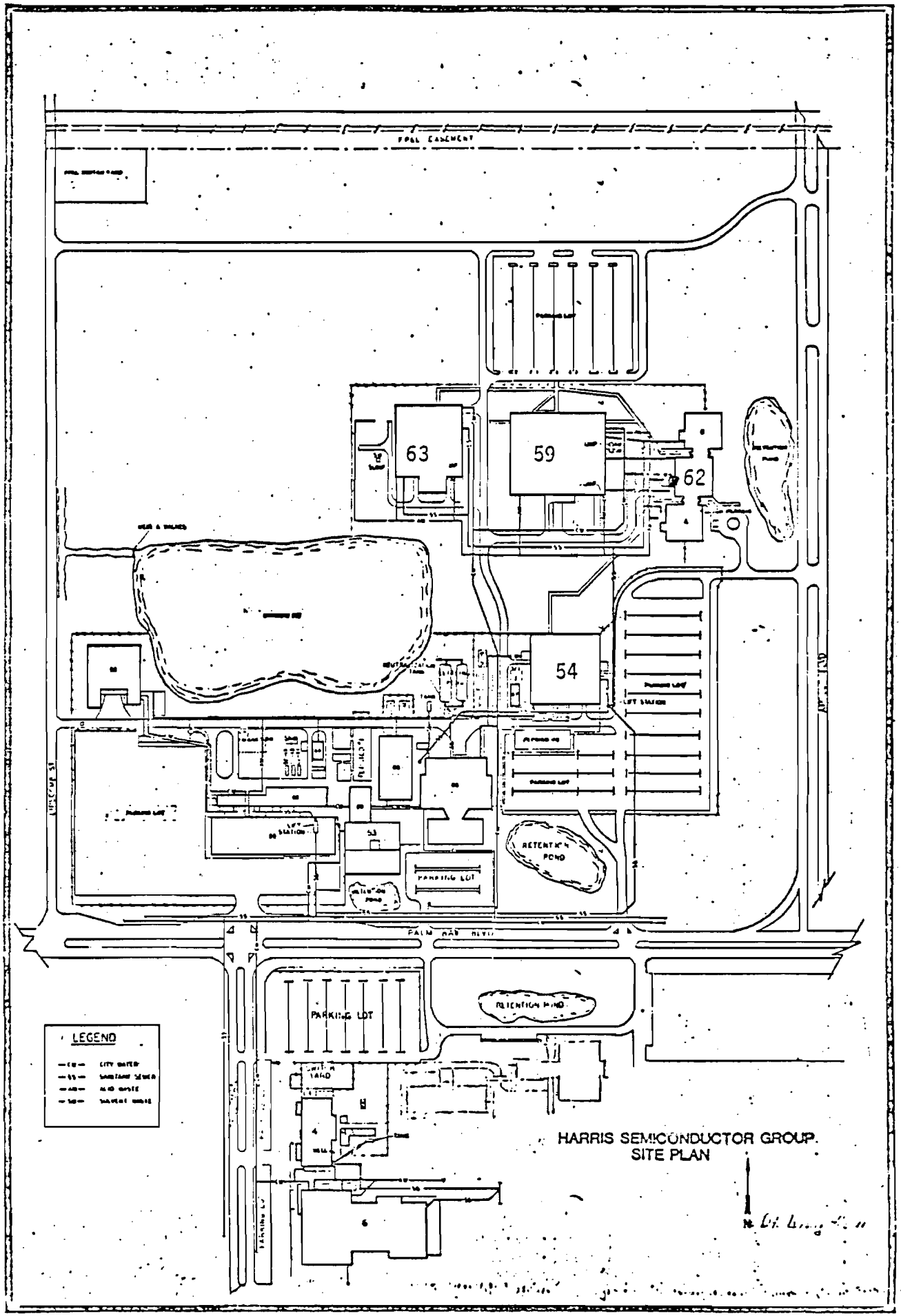

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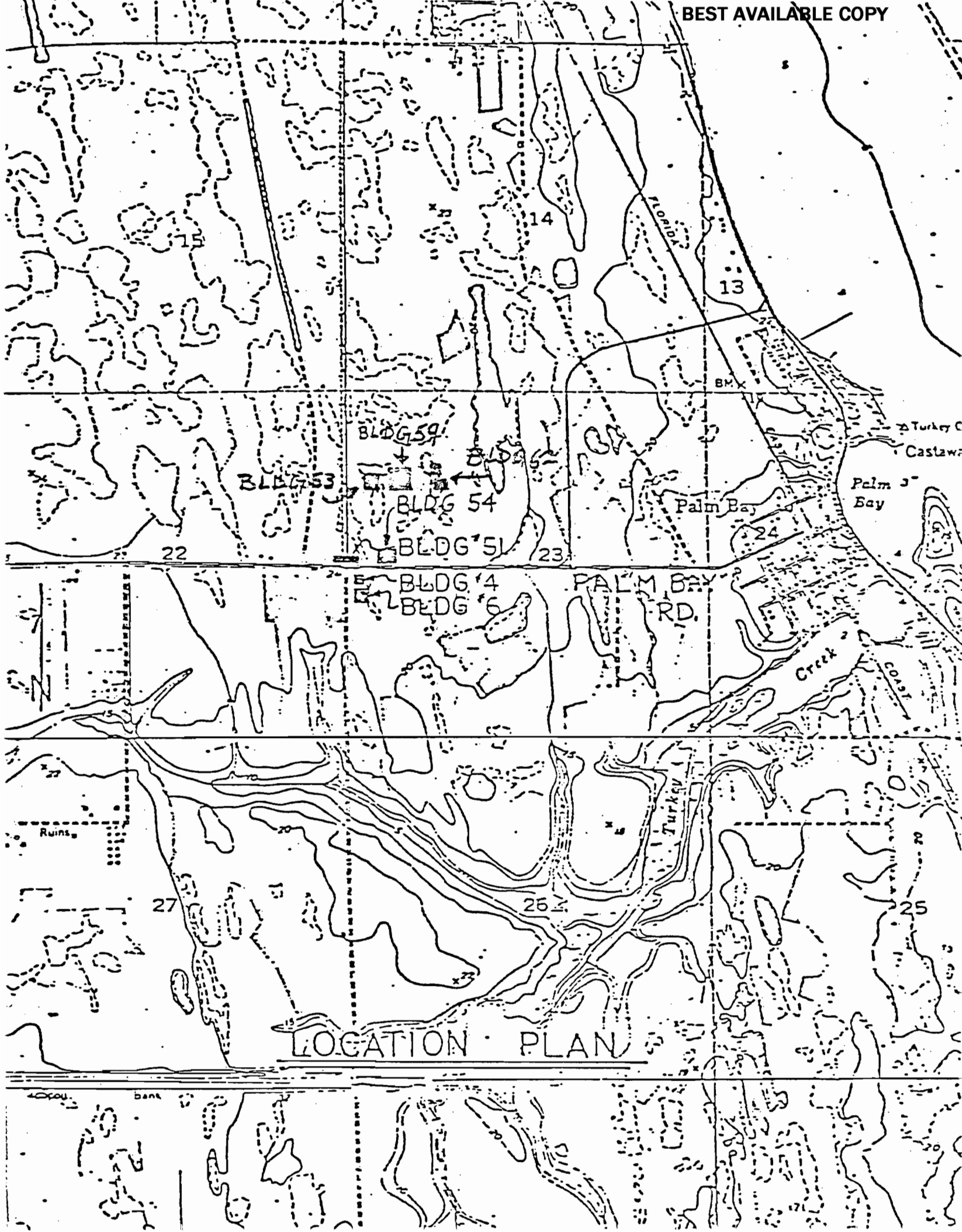

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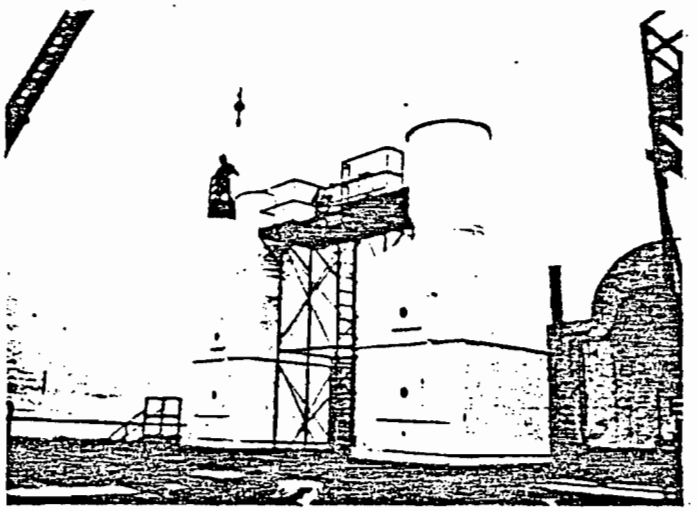
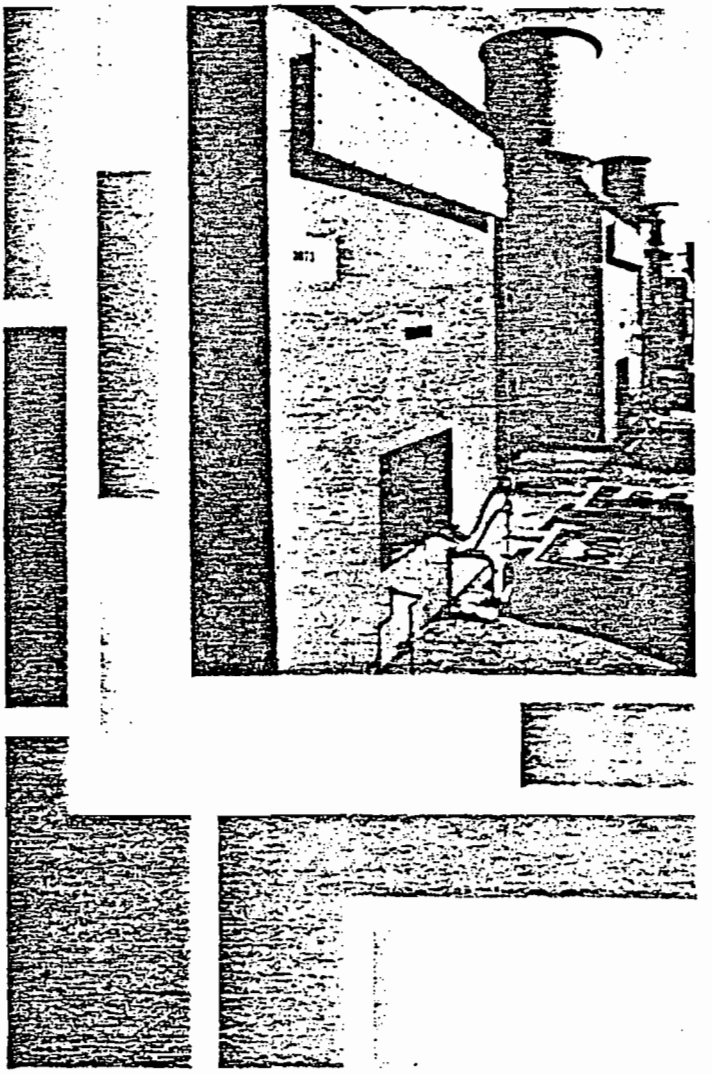




AIR POLLUTION CONTROL EQUIPMENT

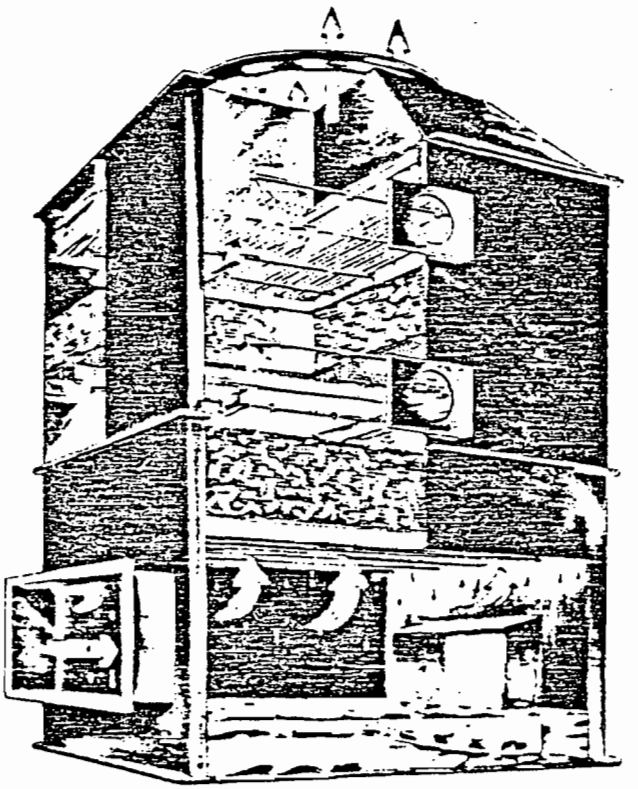
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

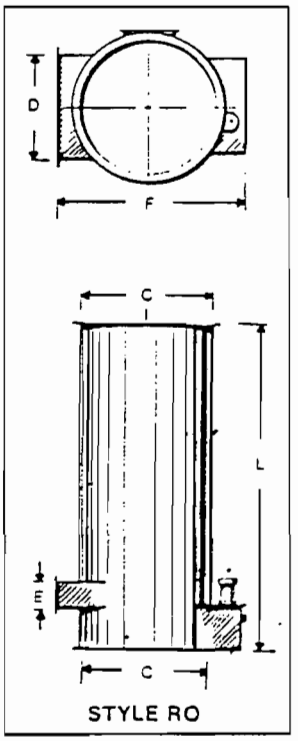
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅞
I	10⅜	12⅞	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0
HT OP. WT. HT SHIP WT.	388 220	745 335	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 7040
VT OP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800



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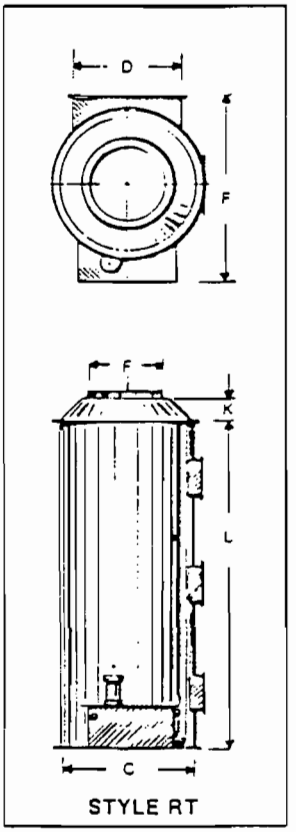

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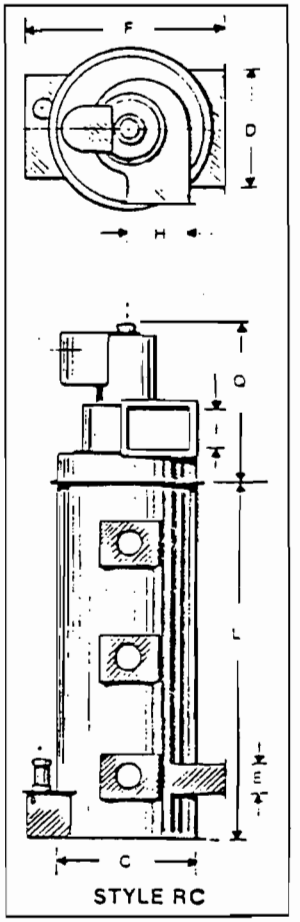

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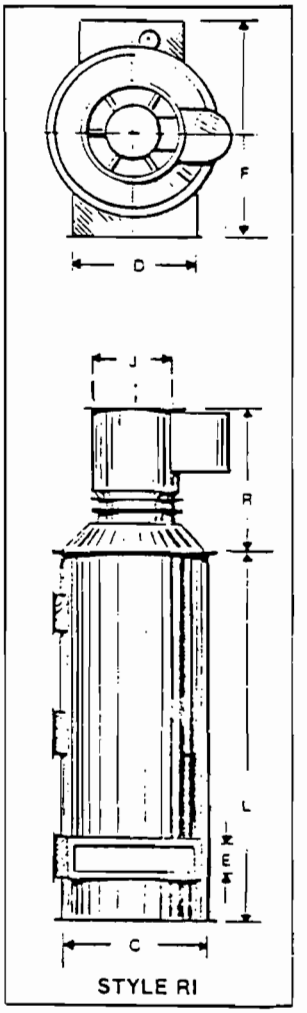

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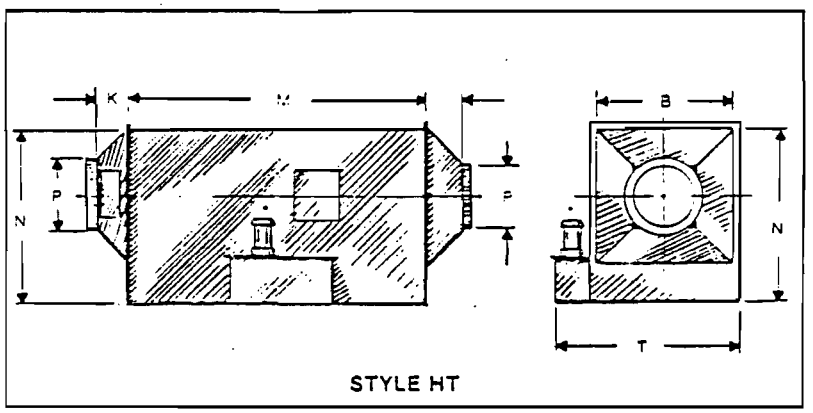

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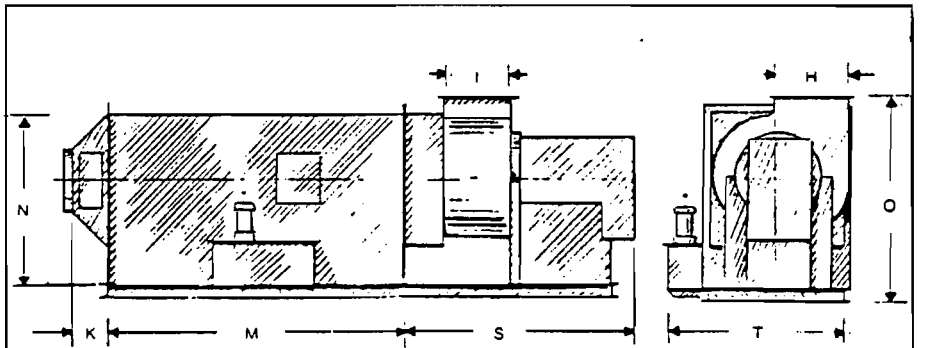

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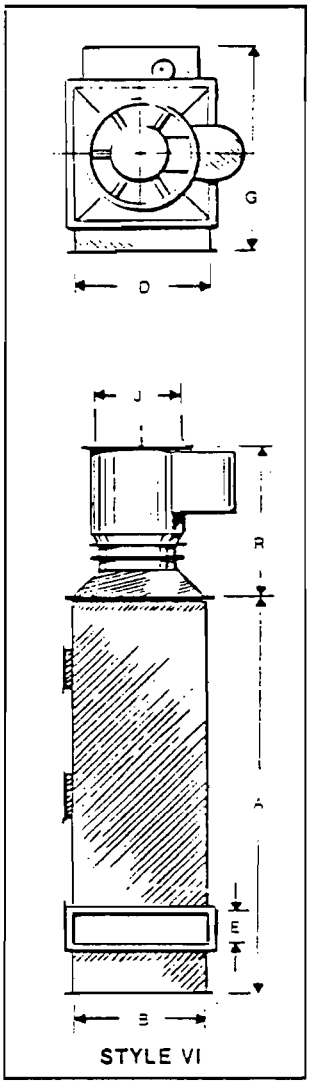
*May require one or more pumps.



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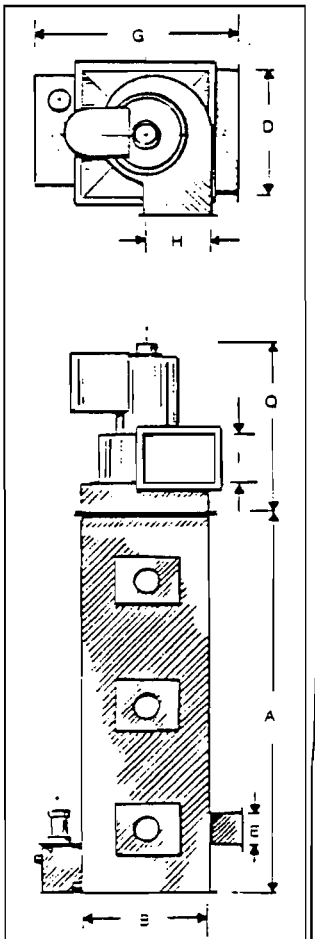

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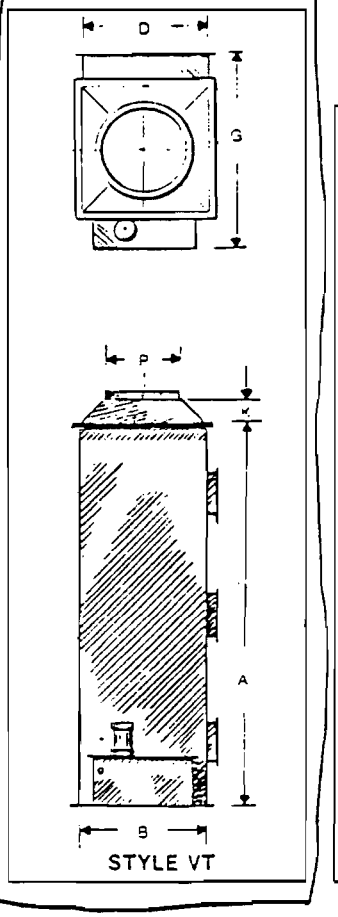

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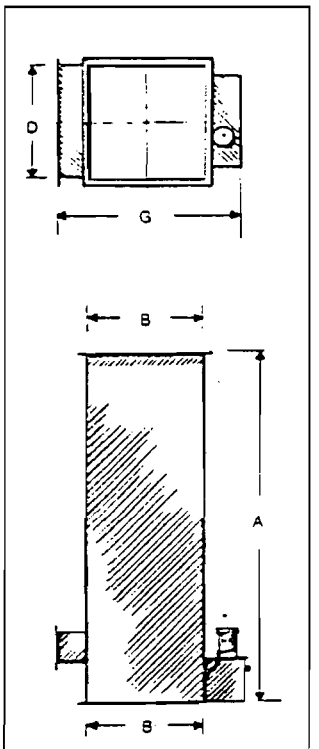

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COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54994

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AC 05-54494

PAID
APR 21 1982
SAINT JOHNS RIVER DISTRICT

DER
APR 26 1982
BAQM

RECEIVED
APR 1982
Saint Johns River District

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

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

APPLICATION TYPE: [X] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 62 Acid Vapor Exhaust Scrubber (FS-62A-2)

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: P.R. Bumgarner, Manager Facilities Engineering

APPLICANT ADDRESS: PT-030 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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P.R. Bumgarner

P.R. Bumgarner, Mgr. Facilities Engineering
Name and Title (Please Type)

Date: 2-23-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-30 Box 883, Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2-23-82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 62 will utilize laboratory hood type work stations to provide clean room conditions for the manufacture of semiconductors. All chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted via A 24,000 cfm fume scrubber manufactured by Beverly Pacific.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/Wet Scrubber $19,400.00

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

Building 62 is new construction located approximately 1000 ft. from building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes _X_ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ; if seasonal, describe: ____

G. 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 availeble control technology (BACT) apply to this source? If yes, see Section VI. no
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a
2. Product Weight (lbs/hr): semiconductor wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
SeeAttachment A				n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
Beverly Pacific Corp.	Acid mist	95%	n/a	Mfg. Design
Model #PS 24HT/CB40				Data

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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 n/a Maximum _____

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

Scrubber water discharged to industrial wastewater treatment facility

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

Stack Height: 34" ft. Stack Diameter: 3'7" ft.

Gas Flow Rate: 21000/24000 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [x] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

ATTACHMENT A

HARRIS SEMICONDUCTOR

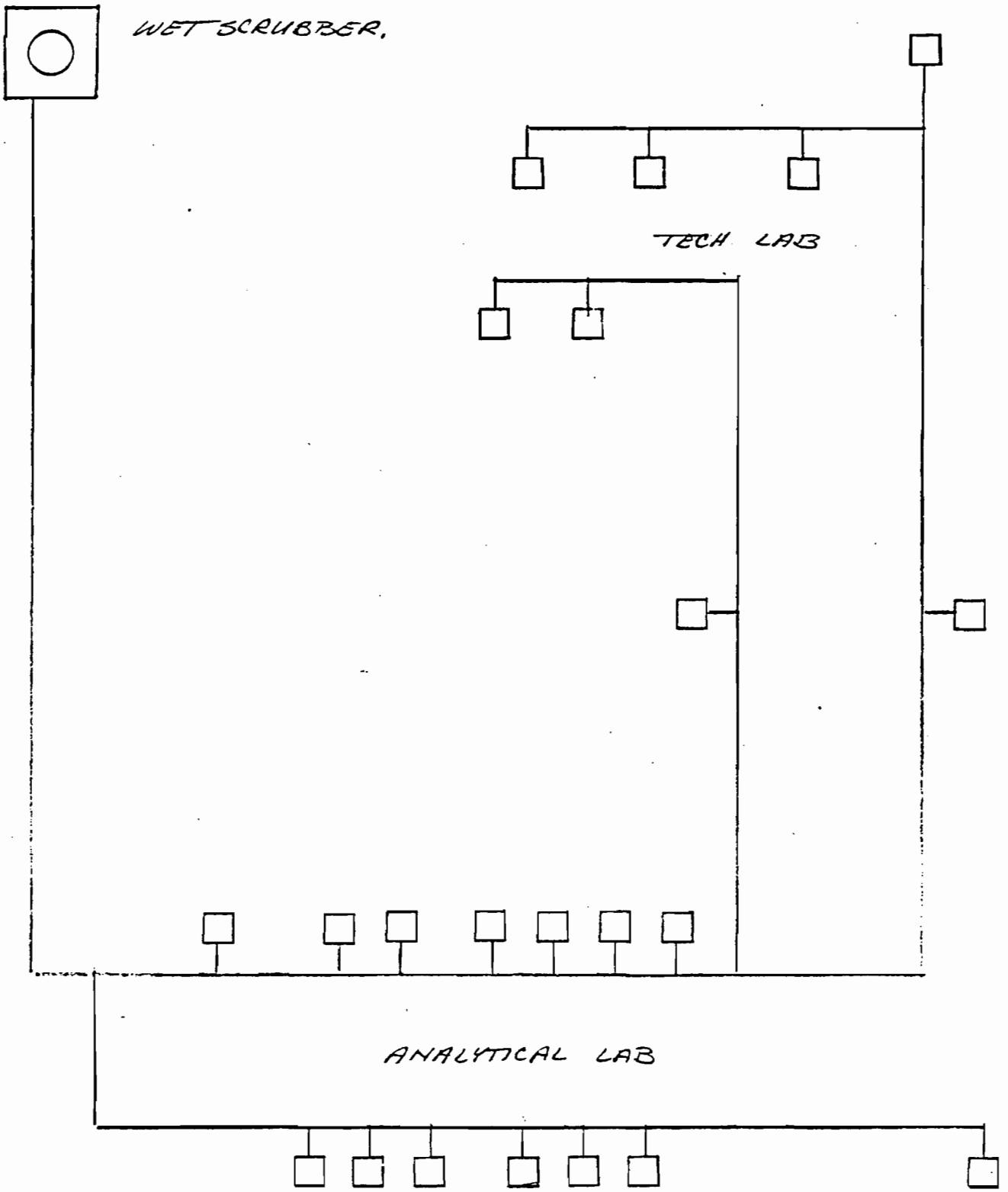
EXHAUST SCRUBBER - BUILDING 62A

SYSTEM 2 ACID

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetic Acid	1.364	0.002	0.006	0.040	0.127
Ammonium Fluoride	5.03	0.009	0.030	0.19	0.602
Hydrofluoric	5.70	0.004	0.014	0.088	0.278
Nitric	9.34	0.006	0.018	0.116	0.368
Sodium Hydroxide	8.92	0.006	0.018	0.116	0.368
Sulfuric	53.22	0.014	0.045	0.285	0.904
Hydrochloric	1.11	0.0007	0.002	0.0135	0.043
Phosphoric	7.068	0.004	0.014	0.087	0.277

BUILDING 62-A ACID EXHAUST SCRUBBER

ATTACHMENT B



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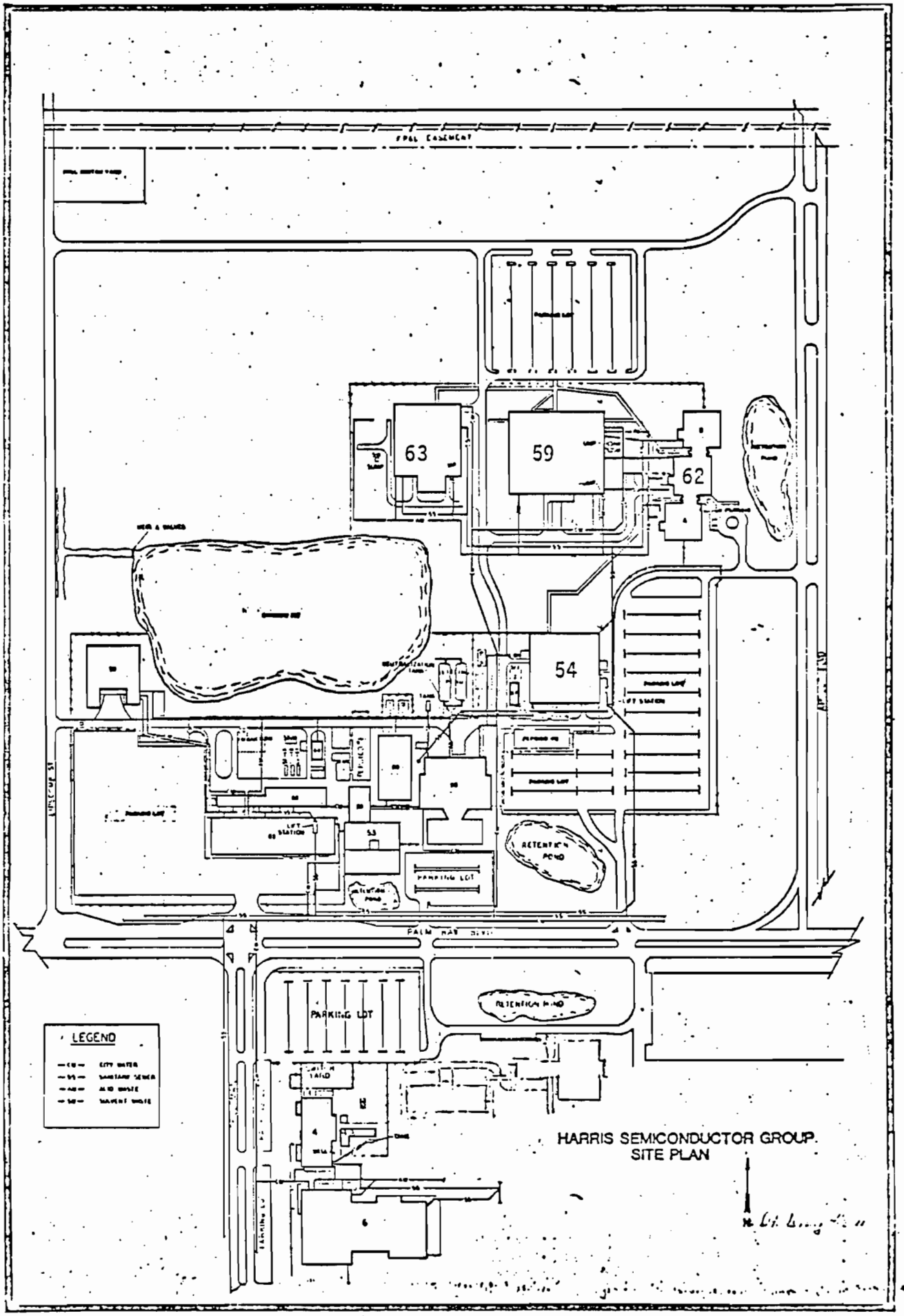

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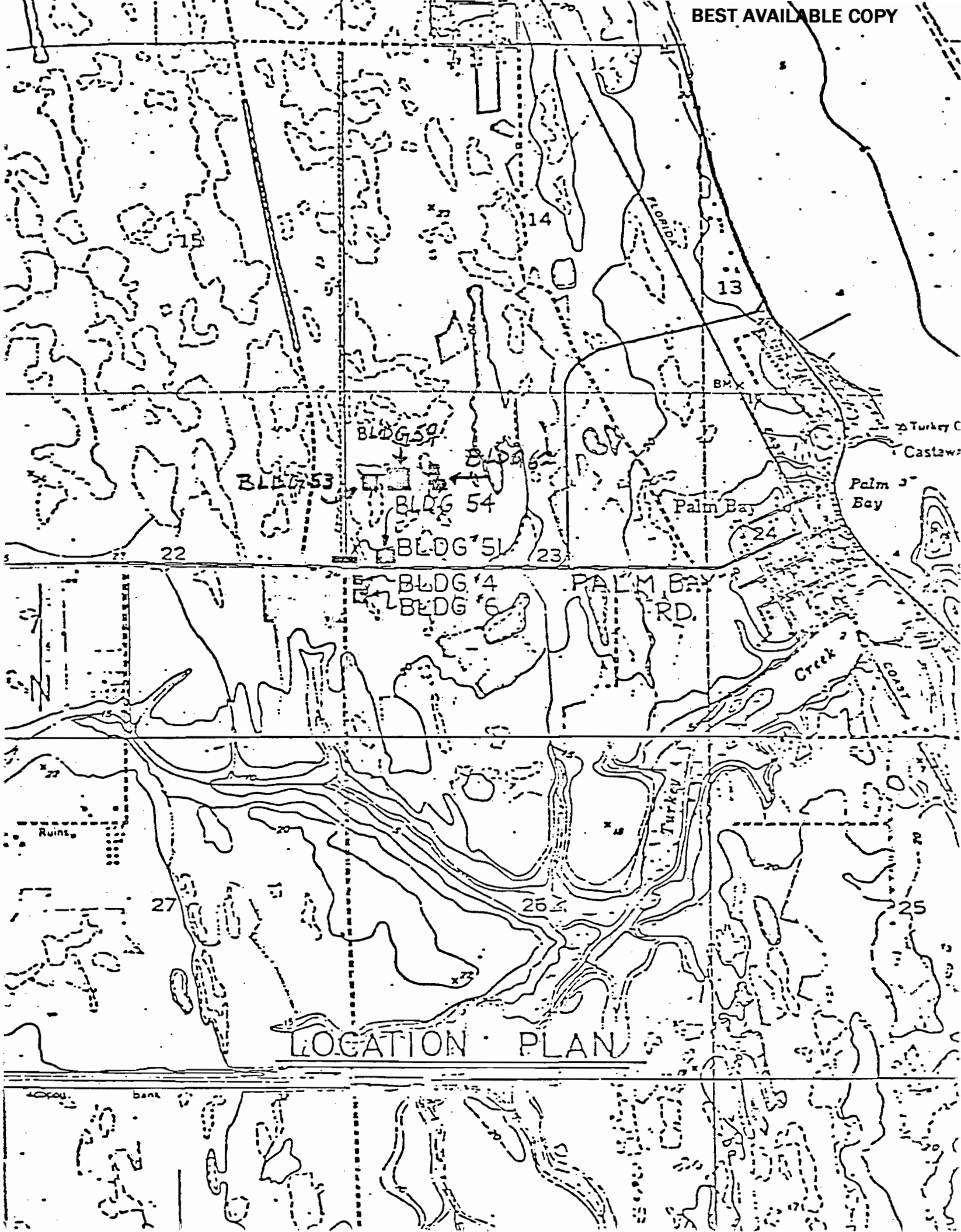

LOCATION PLAN

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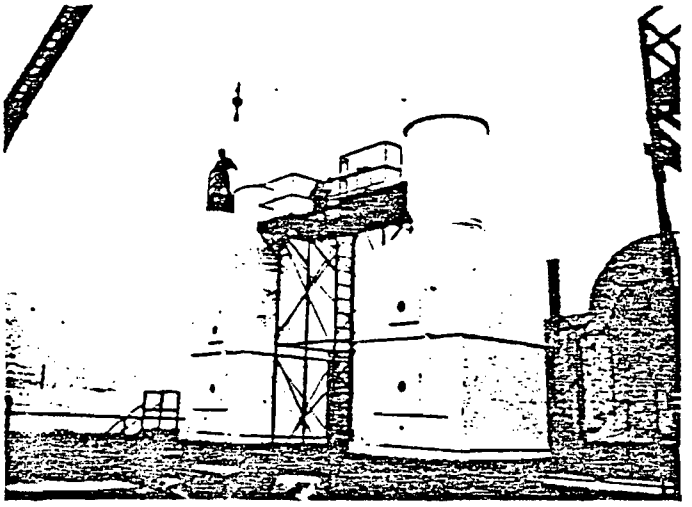
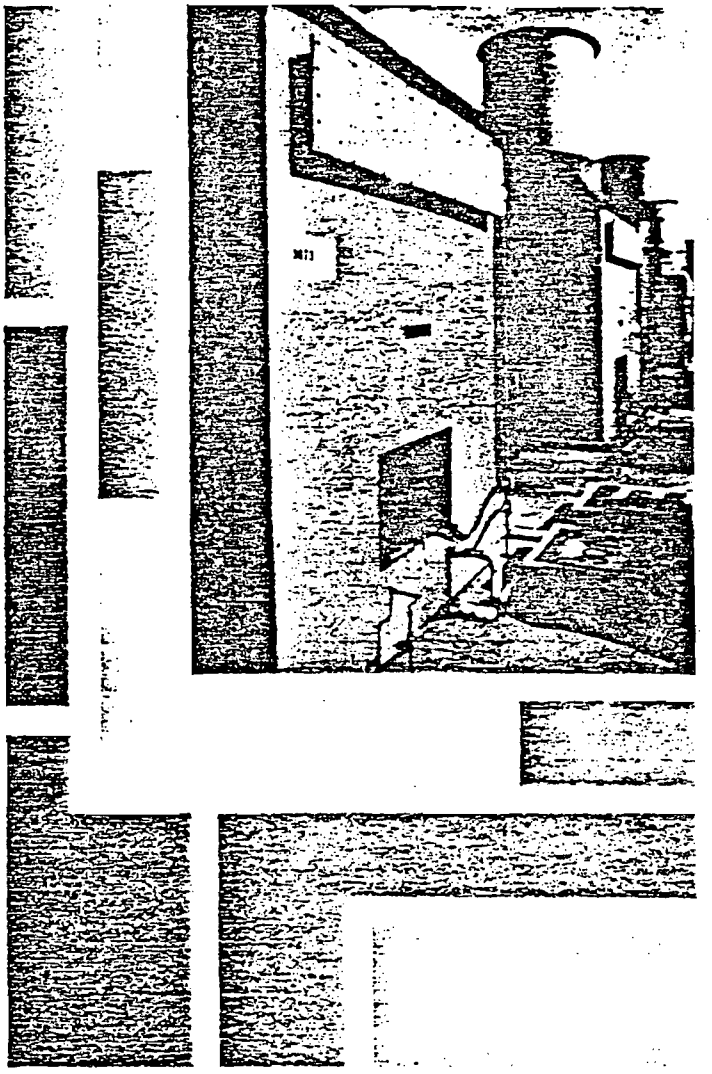




AIR POLLUTION CONTROL EQUIPMENT

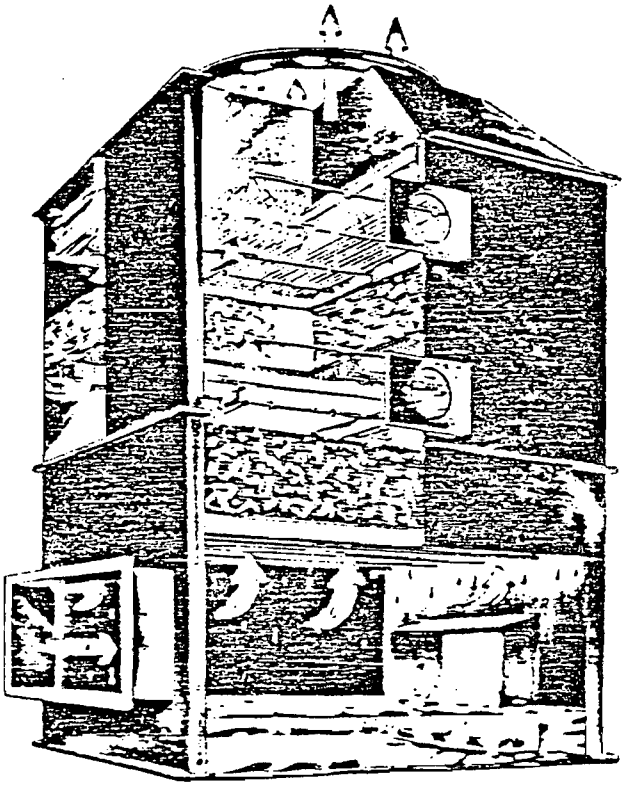
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

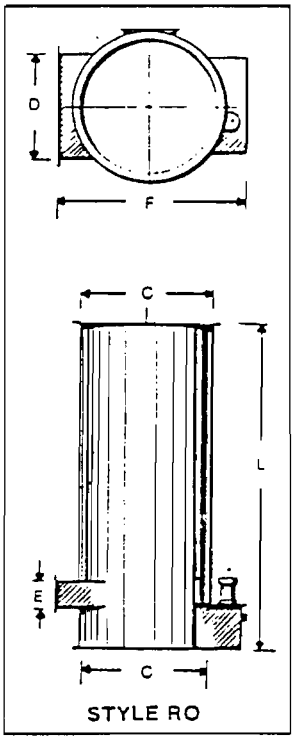
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅞
I	10⅜	12⅞	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM	7	15	25	35	45	75	105	135	175	225
MAKE-UP GPM	0.7	1.5	2.0	3.0	4.0	7.0	10.0	13.0	17.0	22.0
HT OP. WT.	388	745	1110	1570	2690	4085	5670	7595	11790	16040
HT SHIP WT.	220	385	550	770	1210	1925	2750	3795	5390	7040
VT OP. WT.	318	660	1060	1500	2630	3910	5470	7400	11650	15800
VT SHIP WT.	150	300	500	700	1150	1750	2550	3600	5250	6800



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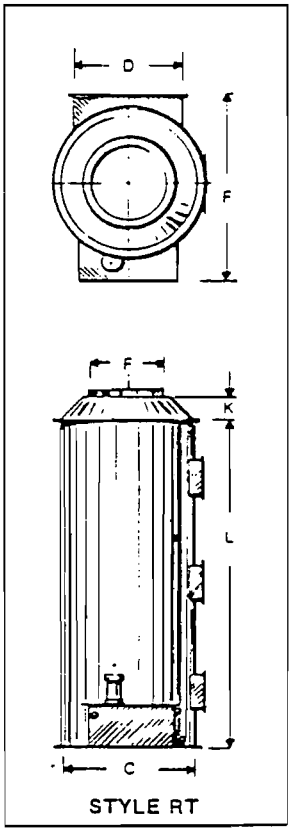

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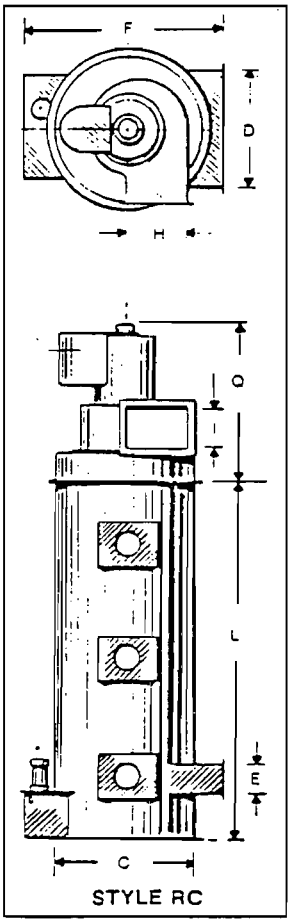

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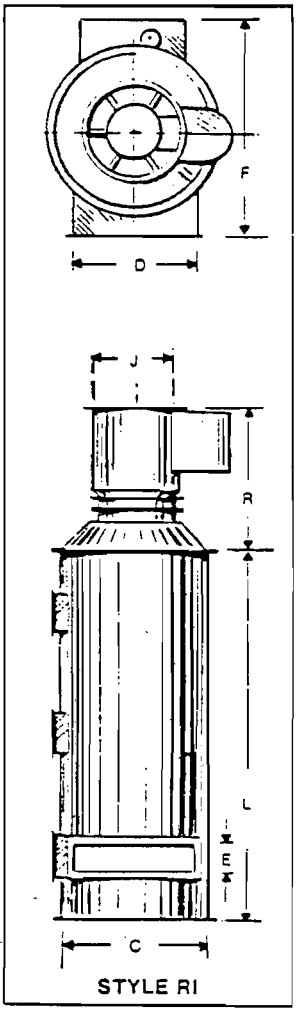

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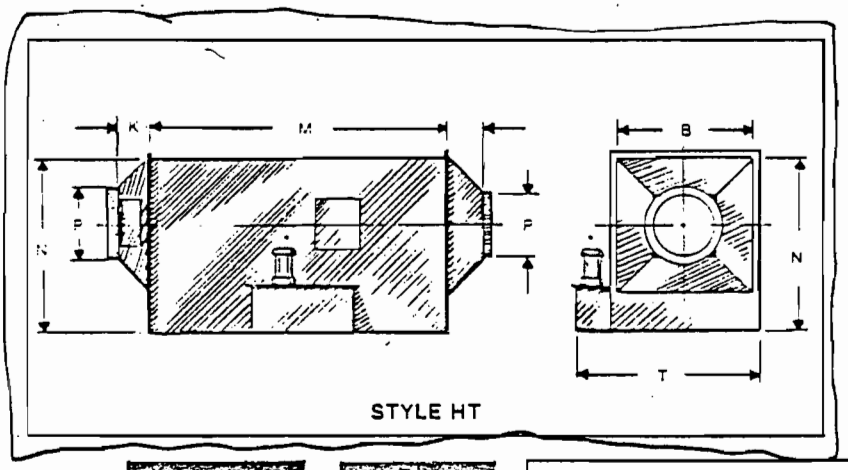

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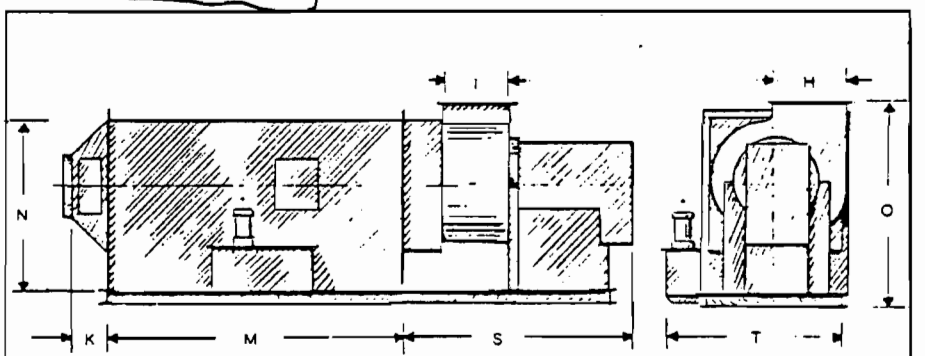

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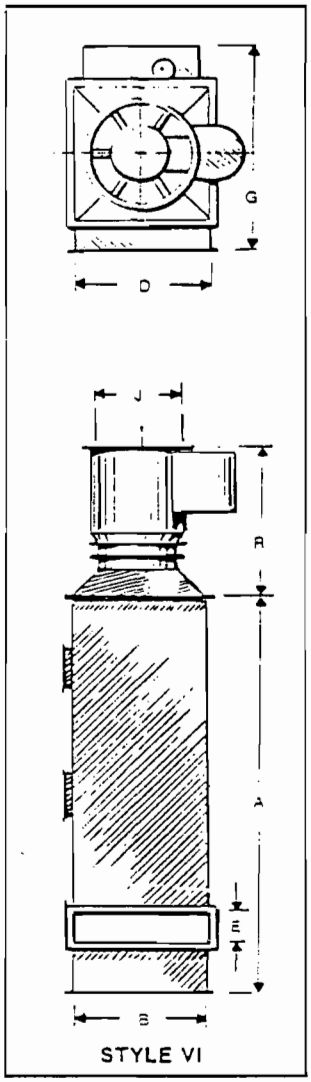
*May require one or more pumps.



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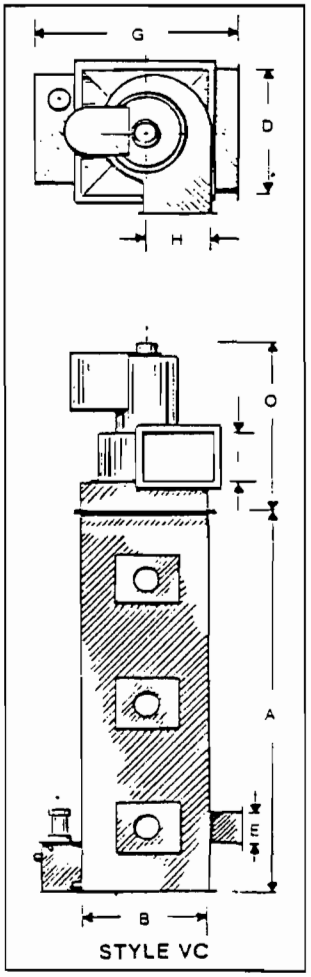

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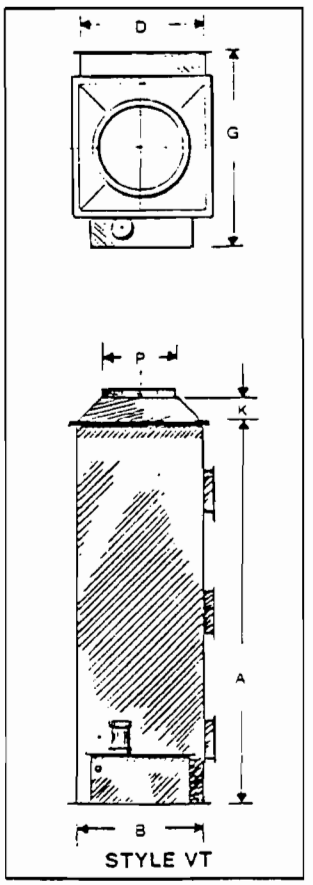

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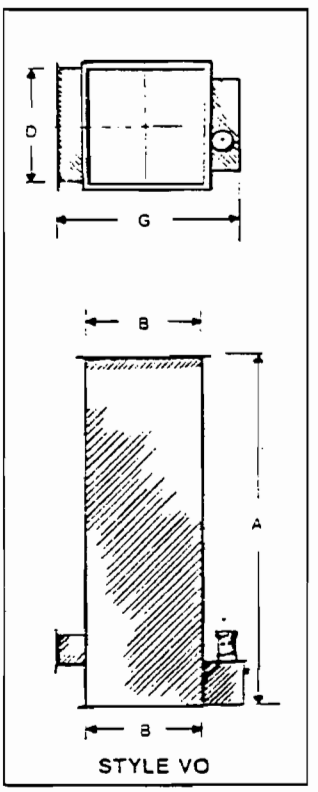

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COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54995

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PAID

APR 21 1982

SAINT JOHNS RIVER DISTRICT

DER

APR 26 1982

AQ 05 - 54995

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

BAQM

APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

APR 1982 RECEIVED Saint Johns River District

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

APPLICATION TYPE: [X] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 63 Solvent Vapor Exhaust Scrubber (FS-63-1)

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: P.R. Bumgarner, Manager Facilities Engineering

APPLICANT ADDRESS: PT-030 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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P.R. Bumgarner

P.R. Bumgarner, Mgr. Facilities Engineering
Name and Title (Please Type)

Date: 2-23-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-30 Box 883 Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2-23-82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 63 will utilize laboratory hood type work stations to provide clean room conditions for the manufacture of semiconductors. All chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted via a 10,000 cfm fume scrubber manufactured by Beverly Pacific.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/Wet Scrubber $30,500.00

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

Building 63 is new construction located approximately 1000 ft from building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

G. 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 Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a

2. Product Weight (lbs/hr): semiconductor wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
See Attachment A			n/a	n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])
Beverly Pacific Corp.	Solvent Vapor	85%	n/a	Mfg. Design
Model# PS12VT/CB24				Data

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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 n/a Maximum _____

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

Scrubber water discharged to industrial wastewater treatment facility

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

Stack Height: 35'0" ft. Stack Diameter: 24" ft.

Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

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 Diameter _____ 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.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

ATTACHMENT A

HARRIS SEMICONDUCTOR

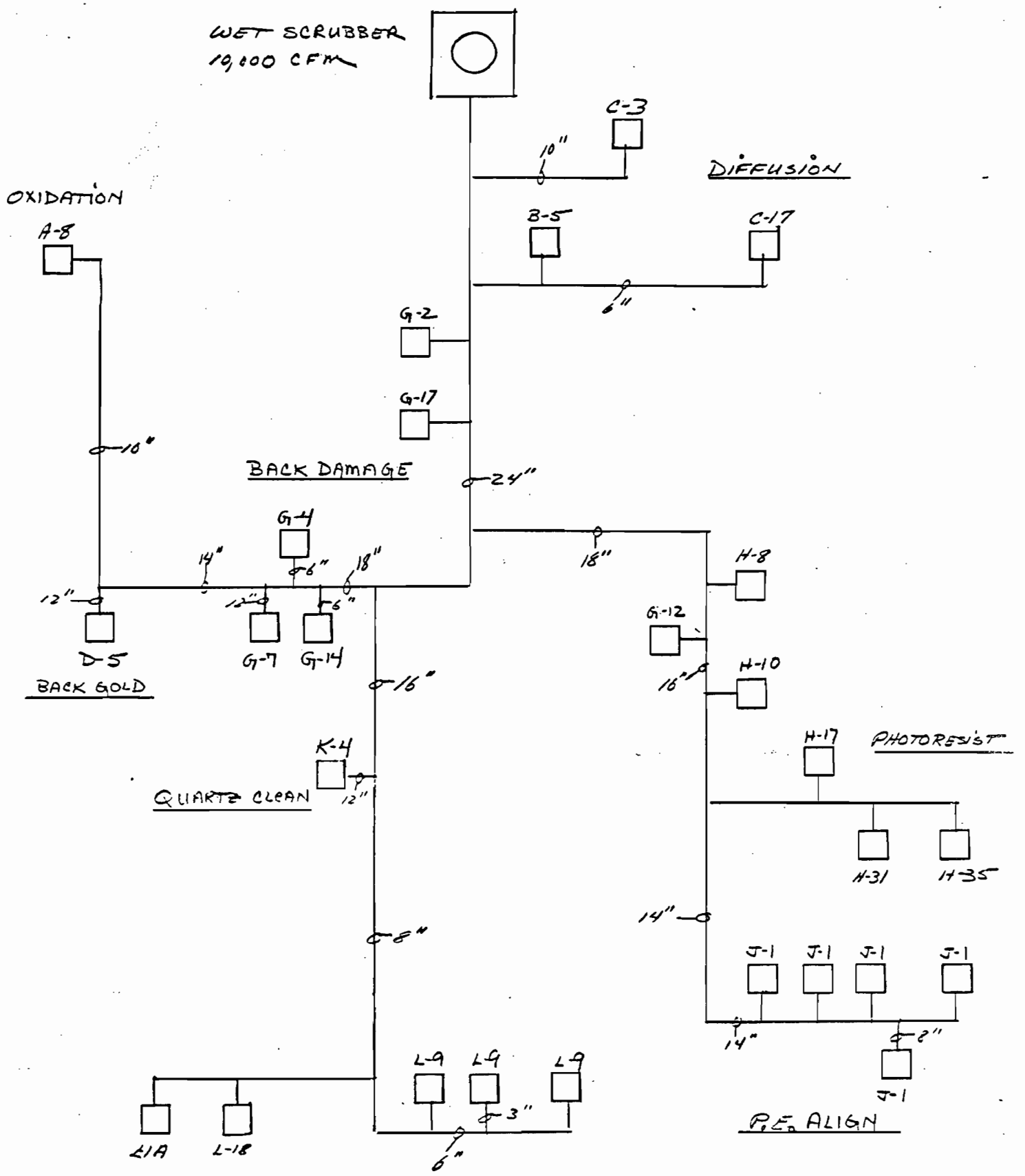
EXHAUST SCRUBBER - BUILDING 63

SYSTEM 1 SOLVENT

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetone	.984	0.012	0.036	0.077	0.244
Methanol	.977	0.075	1.577	0.498	0.236
Trichloroethylen	22.48	0.035	0.111	0.235	0.744
Xylene	1.07	0.050	0.160	0.336	1.064
Propanol	6.83	0.014	0.044	0.093	0.295
Butyl Acetate	2.85	0.013	0.040	0.085	0.269
Freon	1.39	0.008	0.027	0.057	0.179
Photoresist	1.09	0.11	0.570	1.2	3.801
Ethanol	6.86	0.006	0.020	0.042	0.020

BUILDING 63 SOLVENT EXHAUST SYSTEM

ATTACHMENT B



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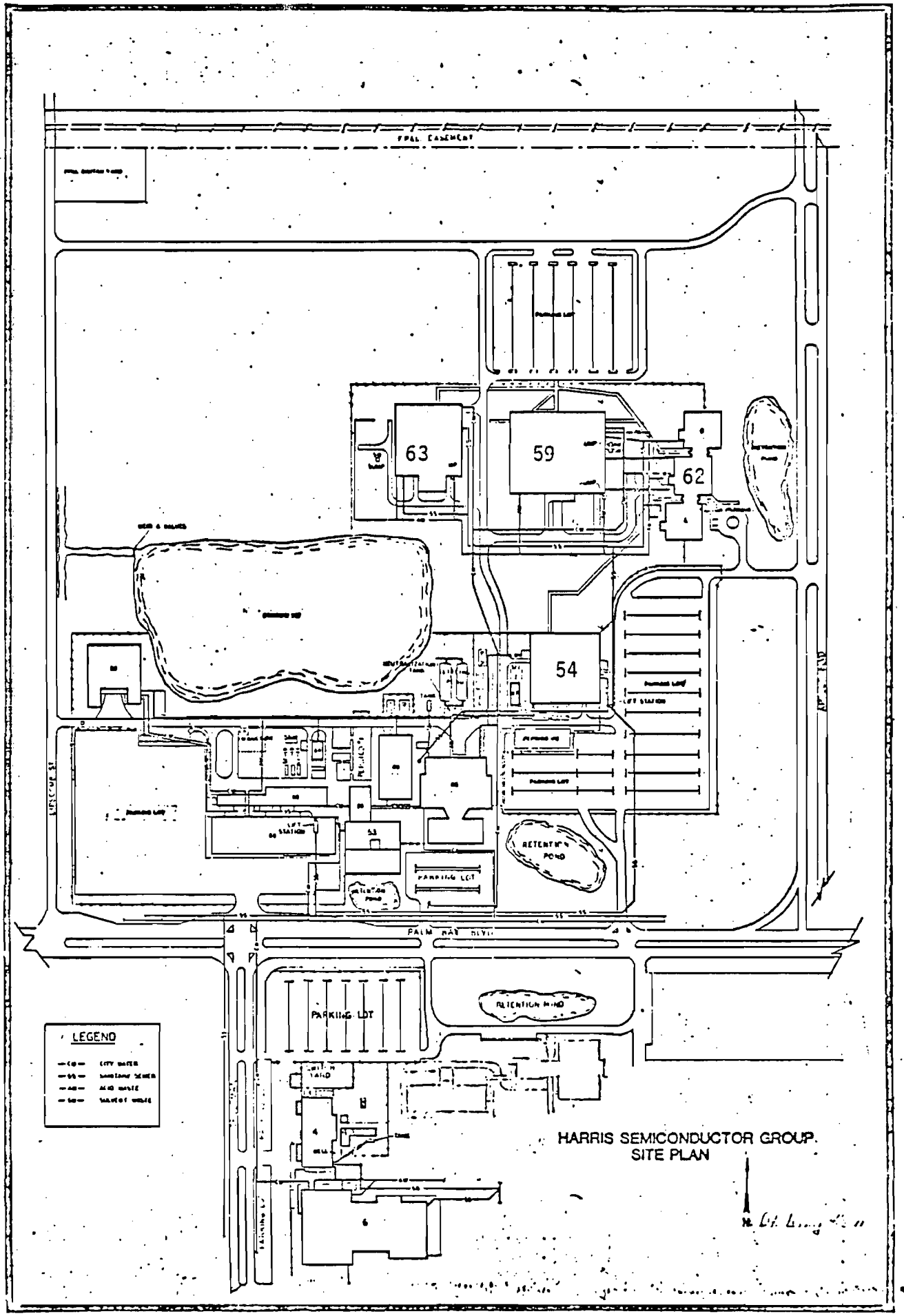

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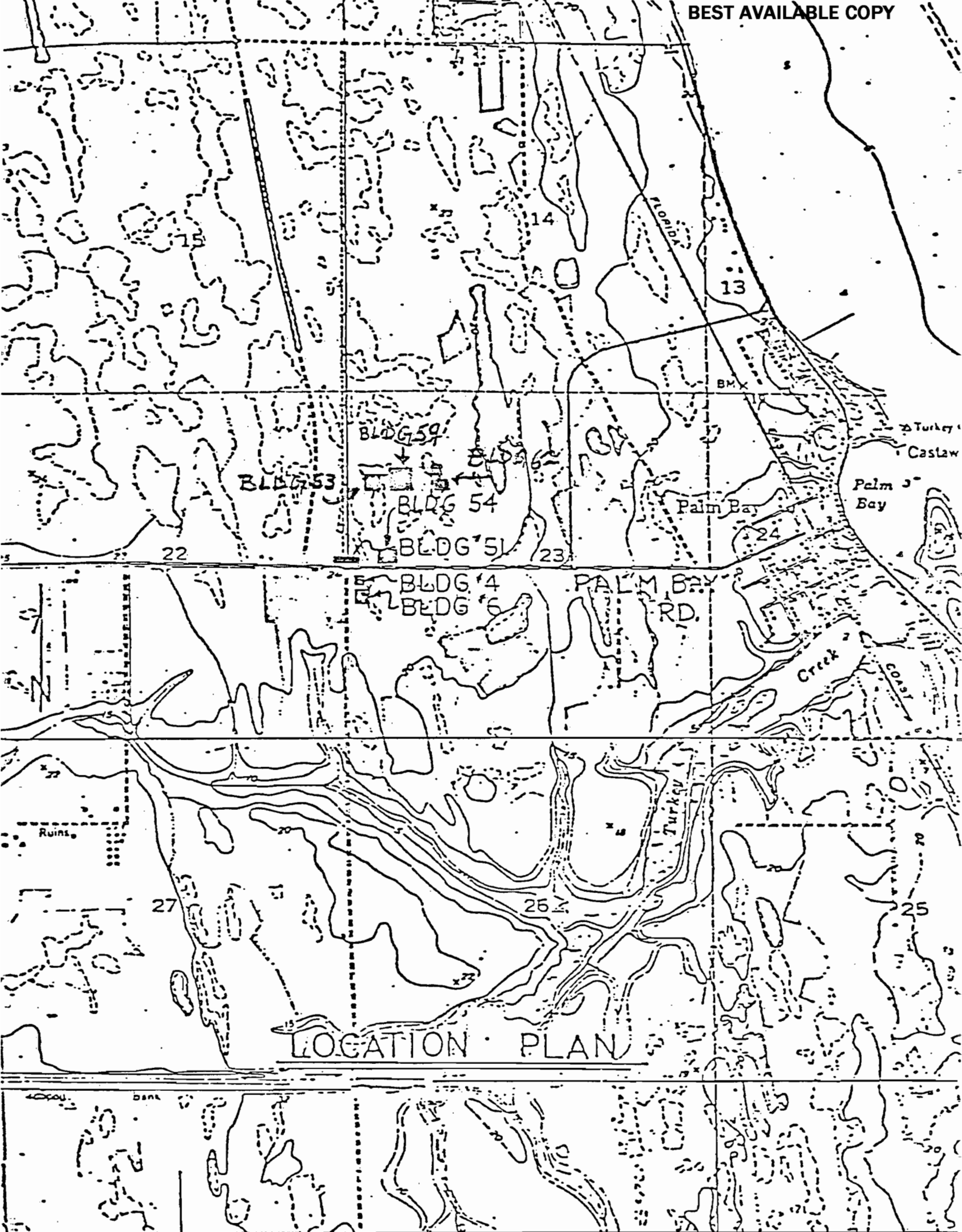

LOCATION PLAN

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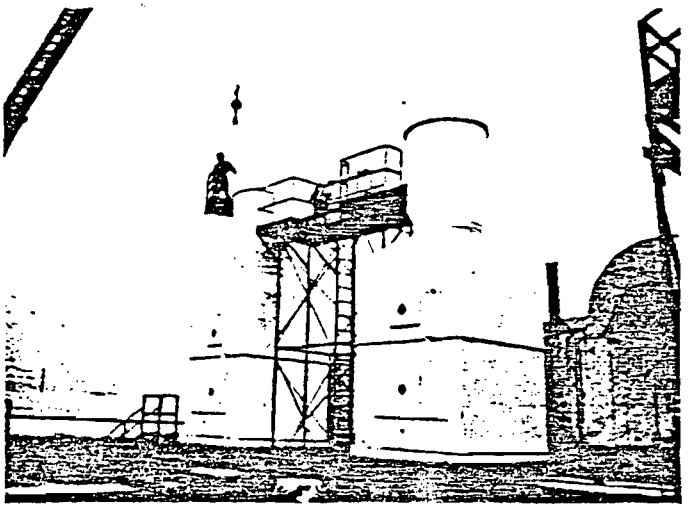
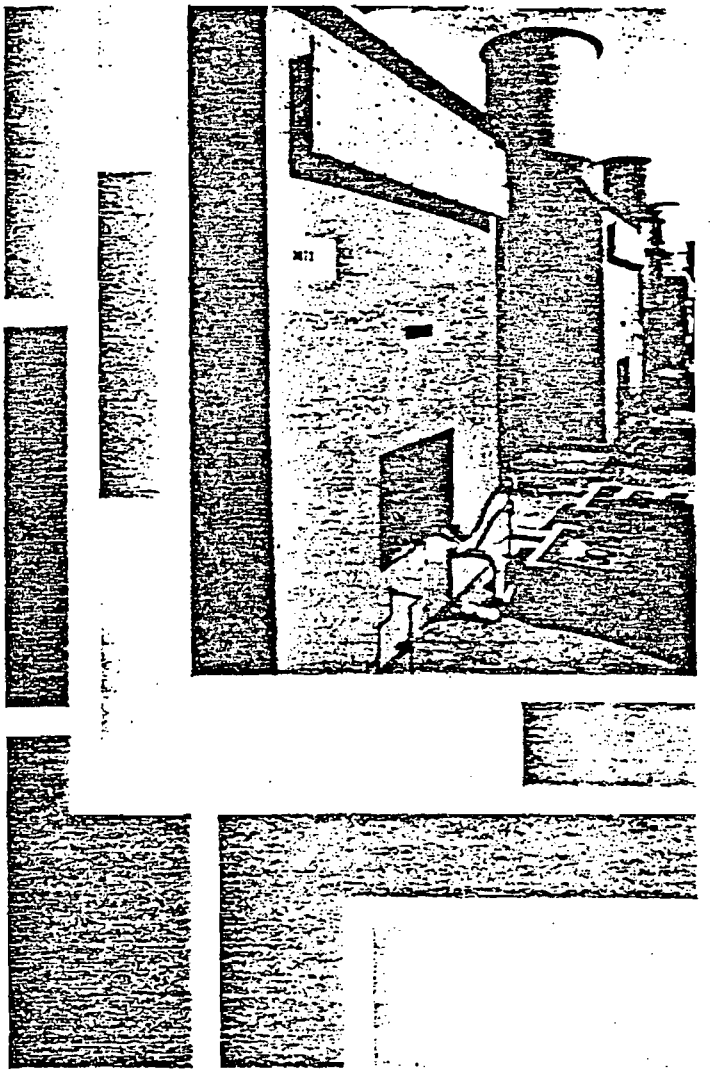




AIR POLLUTION CONTROL EQUIPMENT

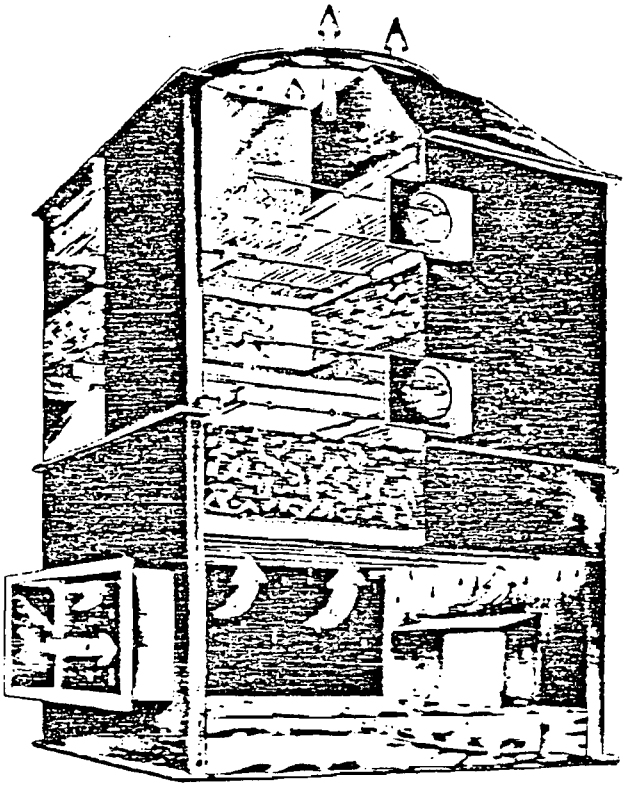
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

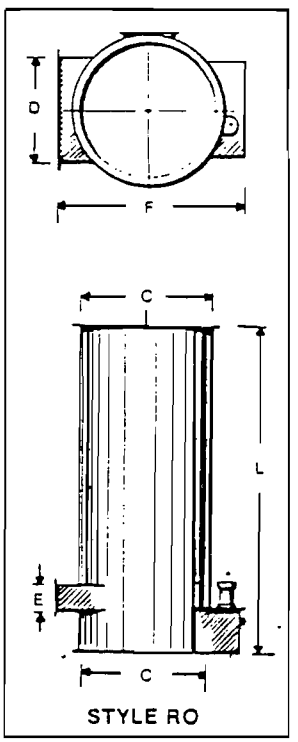
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅛
I	10⅜	12⅞	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM	7	15	25	35	45	75	105	135	175	225
MAKE-UP GPM	0.7	1.5	2.0	3.0	4.0	7.0	10.0	13.0	17.0	22.0
HT OP. WT.	388	745	1110	1570	2690	4085	5670	7595	11790	16040
HT SHIP WT.	220	385	550	770	1210	1925	2750	3795	5390	7040
VT OP. WT.	318	660	1060	1500	2630	3910	5470	7400	11650	15800
VT SHIP WT.	150	300	500	700	1150	1750	2550	3600	5250	6800



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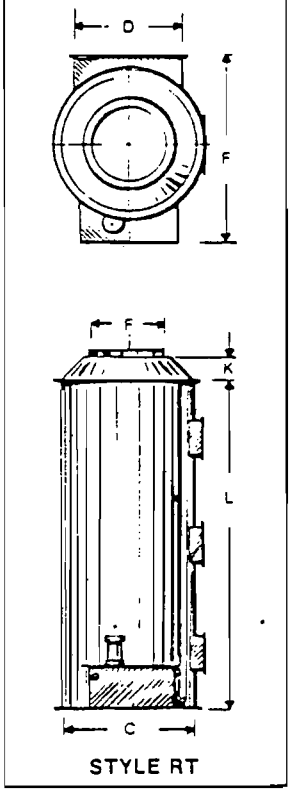

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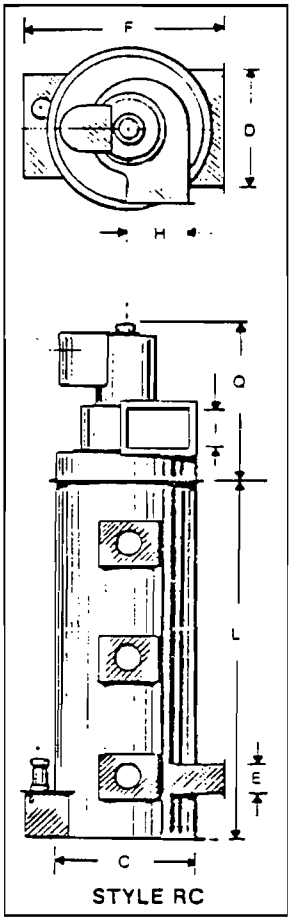

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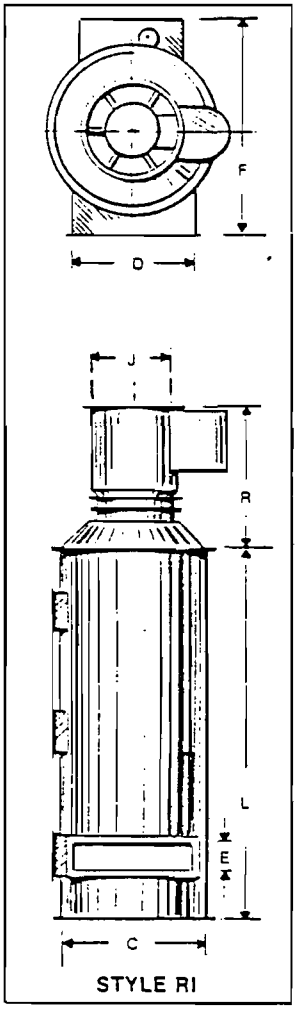

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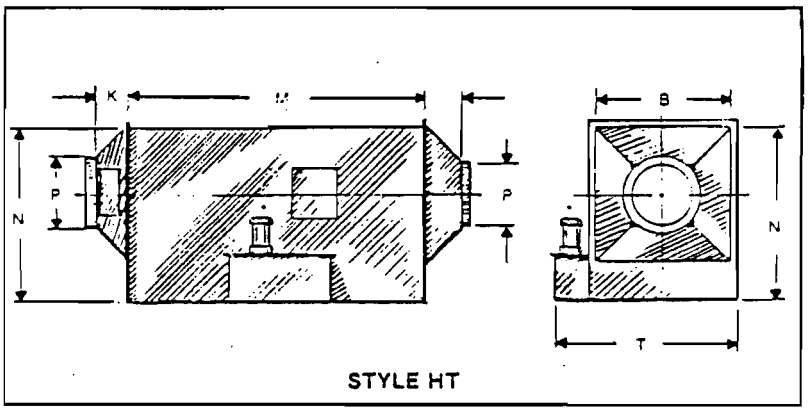

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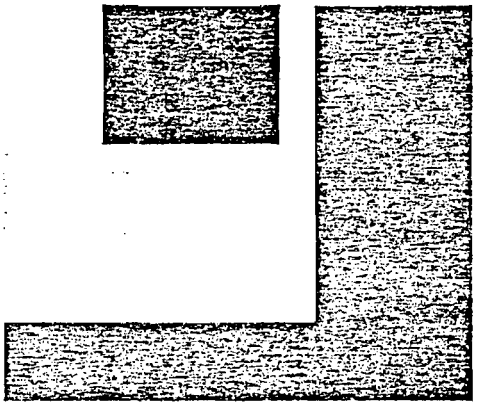
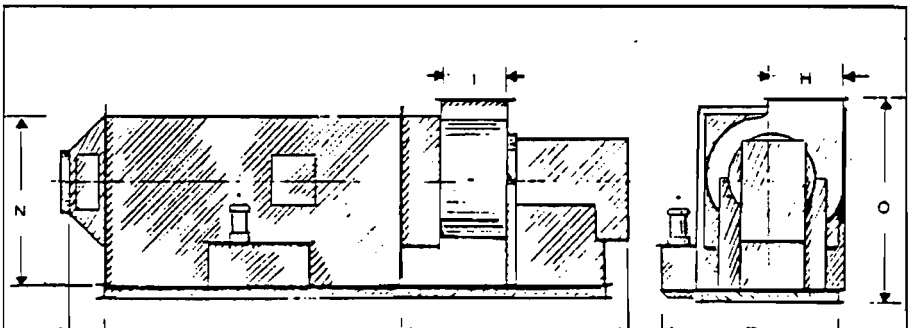
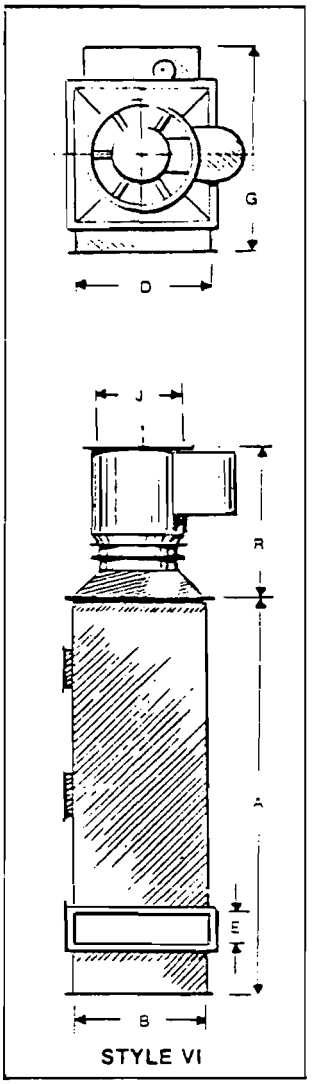


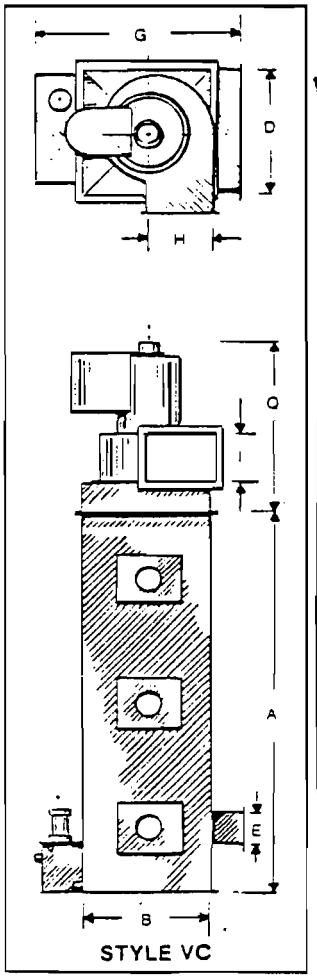


STYLE HC

*May require one or more pumps.



STYLE VI



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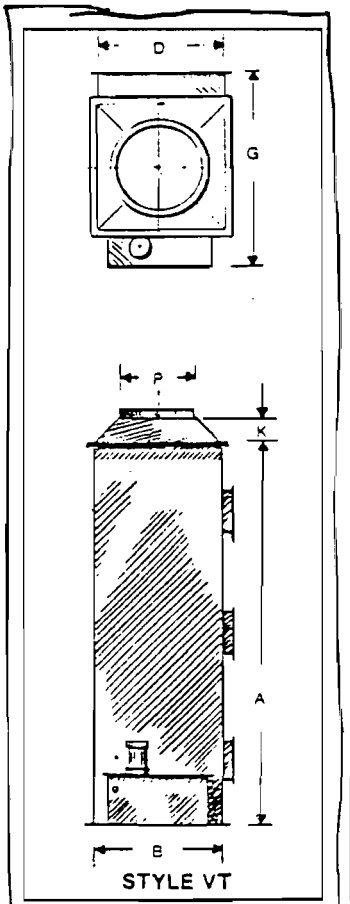

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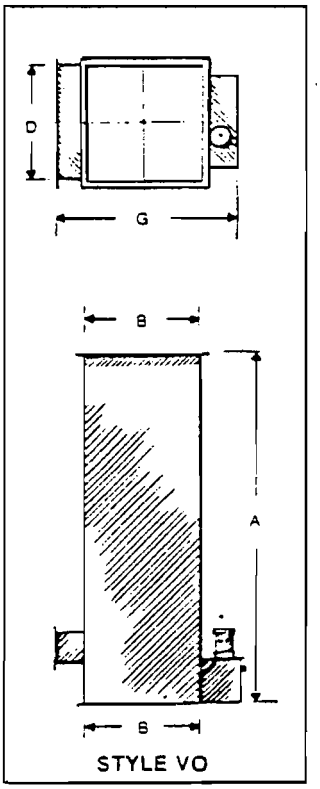


STYLE VO

COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54996

AC 05-54996

PAID APR 21 1982

SAINT JOHNS RIVER DISTRICT

DER APR 26 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
BAQM
APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

APR 1982 RECEIVED Saint Johns River District

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

APPLICATION TYPE: [X] Construction [ ] Operation [ ] 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; Peeking Unit No. 2, Gas Fired) Building 63, Acid Exhaust Vapor Scrubber (FS-63-2)

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: P. R. Bumgarner, Manager Facilities Engineering

APPLICANT ADDRESS: PT-030 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 construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P.R. Bumgarner

P.R. Bumgarner, Mgr. Facilities Engineering
Name and Title (Please Type)

Date: 2-23-82 Telephone No. 724-7657

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 have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that 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: Chester C Bach

Chester C. Bach
Name (Please Type)

(Affix Seal)

Harris Semiconductor
Company Name (Please Type)

PT-30 Box 883, Melbourne, FL 32901
Mailing Address (Please Type)

Florida Registration No. 19110 Date: 2-23-82 Telephone No. 724-7324

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. 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.

Building 63 will utilize laboratory hood type work station to provide clean room conditions for the manufacture of semiconductors. All chemicals are utilized in 1-2 gallon containers in which the devices are immersed. Vessel surface exposed to exhaust air is minimal. Air is exhausted via a 50,000 cfm fume scrubber manufactured by Beverly Pacific.

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

Start of Construction 5-1-82 Completion of Construction 9-1-82

C. 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.)

Fan/Wet Scrubber $34,000.00

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

Building 63 is new construction loacted approximately 1000 ft. from Building 54 which has current operating permits.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

G. 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 Significant Deterioriation" (PSD) requirements 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

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 A				See Attachment B

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

1. Total Process Input Rate (lbs/hr): n/a
2. Product Weight (lbs/hr): semiconductor wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
See Attachment A				n/a			See Attachment B

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])
Beverly Pacific Corp.	Acid mist	95%	n/a	Mfg. Design
Model # PS50HT/CB60				Data

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 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)

[5] If Applicable

E. Fuels n/a

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

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, 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.

Scrubber water discharged to industrial wastewater treatment facility

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

Stack Height: 31'0" ft. Stack Diameter: 4'6" ft.

Gas Flow Rate: 40,000/ 50,000 ACFM Gas Exit Temperature: 74 °F.

Water Vapor Content: 1 % Velocity: 500 FPS

SECTION IV: INCINERATOR INFORMATION

n/a

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.)
Lbs/hr Incinerated							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
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, 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 8½" 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 8½" 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 8½" 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. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. 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

n/a

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [x] 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:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: 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*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

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:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

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*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

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*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*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

n/a

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.

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 on 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.

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

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.

ATTACHMENT A

HARRIS SEMICONDUCTOR

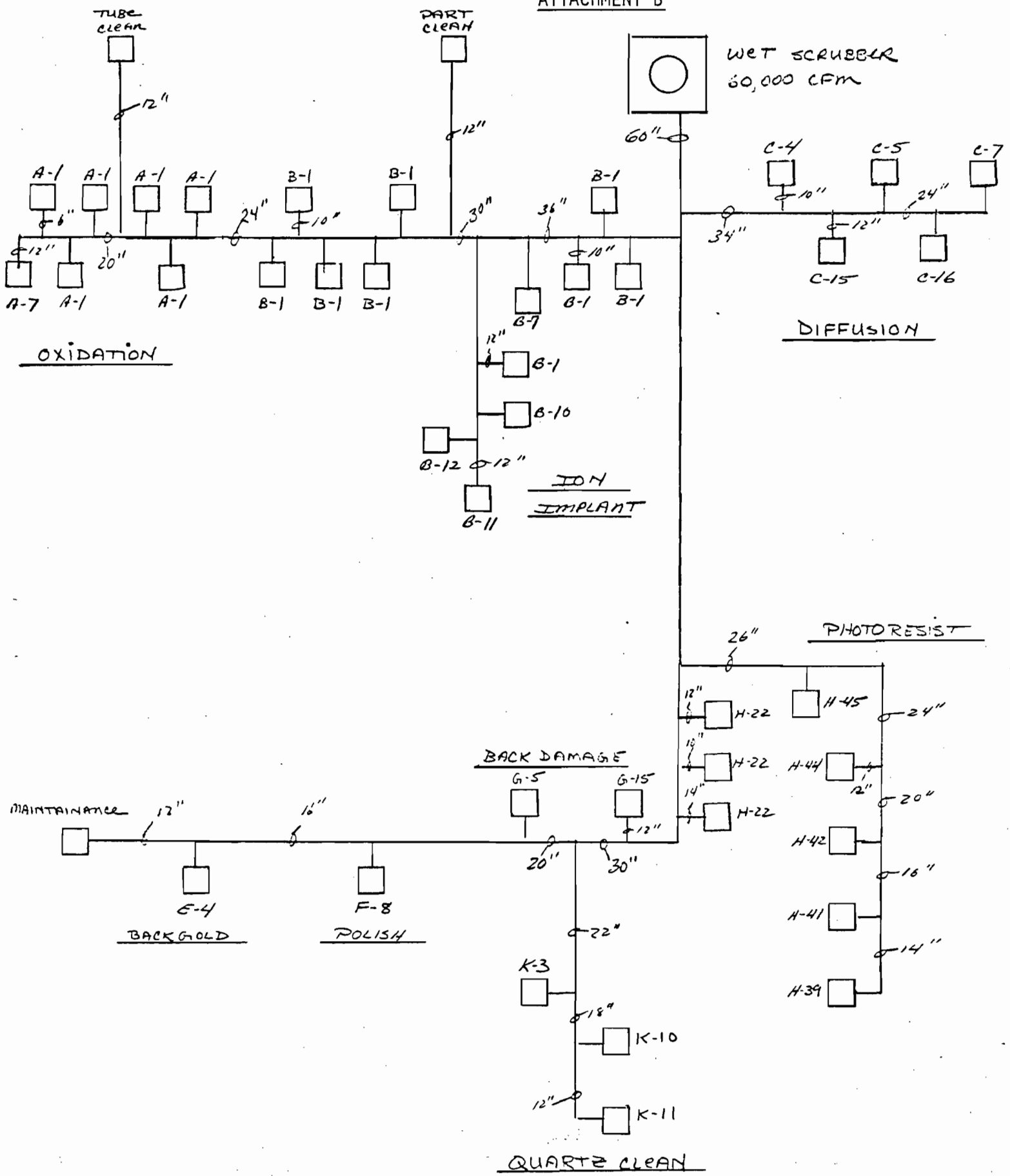
EXHAUST SCRUBBER - BUILDING 63

SYSTEM 2 ACID

RAW MATERIAL	UTILIZATION RATE lb/hr	EMISSION		POTENTIAL EMISSION	
		MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetic Acid	3.41	0.005	0.015	0.094	0.298
Ammonium Fluoride	12.29	0.022	0.070	0.445	1.41
Hydrofluoric	14.254	0.01	0.033	0.205	0.650
Nitric	21.8	0.014	0.043	0.272	0.862
Sodium Hydroxide	20.82	0.014	0.043	0.272	0.862
Sulfuric	125.46	0.033	0.106	0.668	2.116
Hydrochloric	3.18	0.002	0.005	0.2044	0.997
Phosphoric	17.67	0.01	0.032	0.204	0.648

BUILDING 63 ACID EXHAUST SYSTEM

ATTACHMENT B



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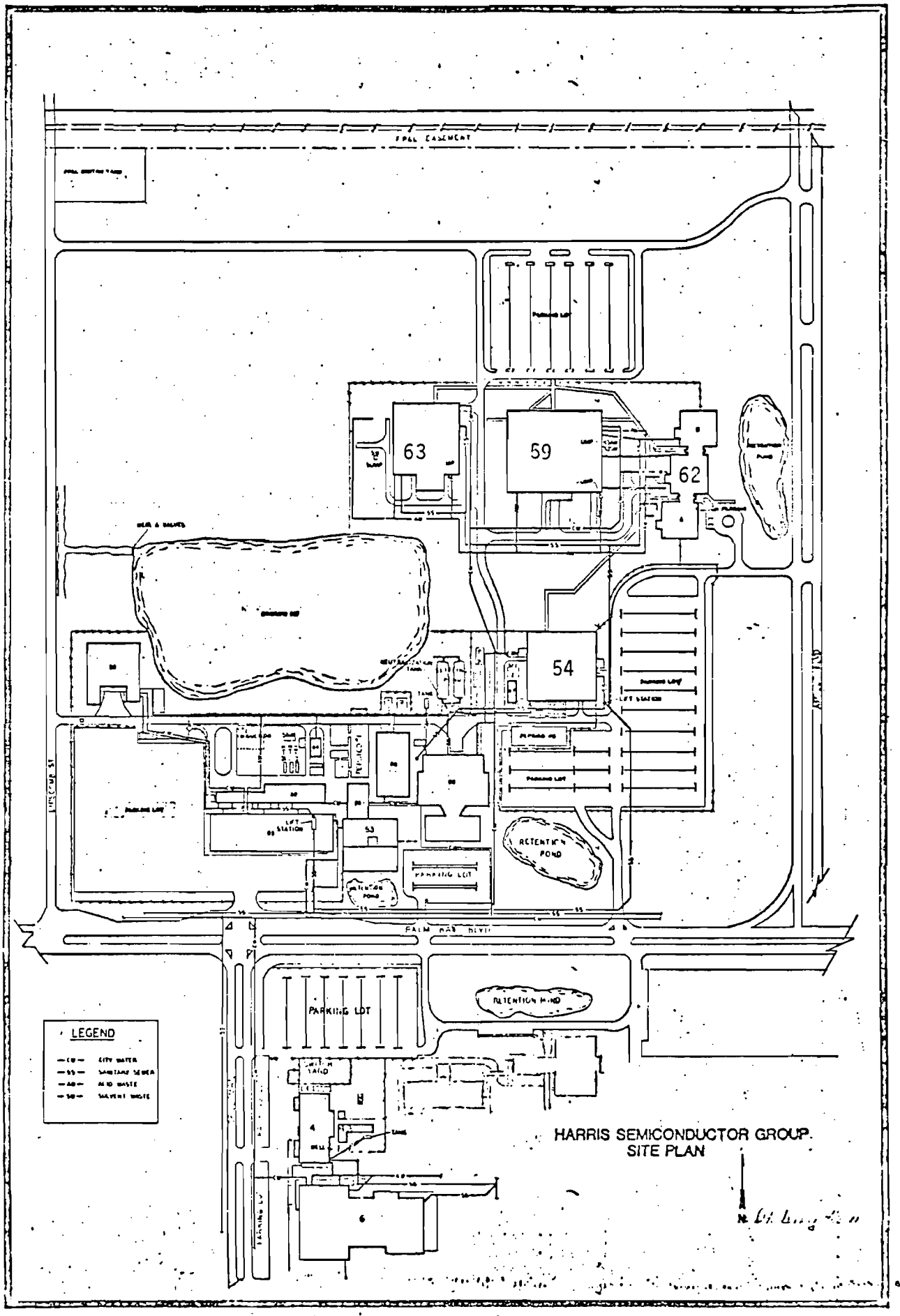

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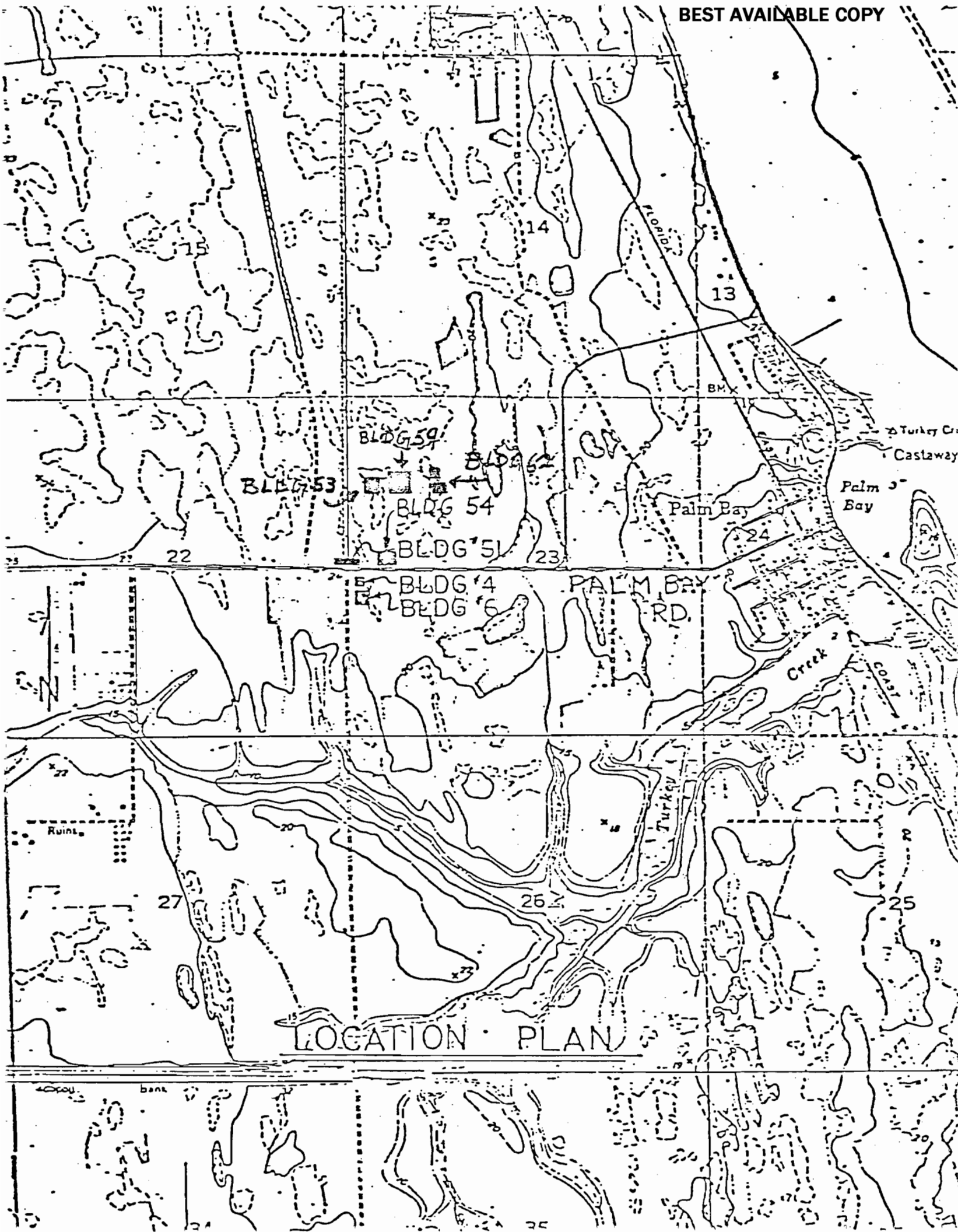

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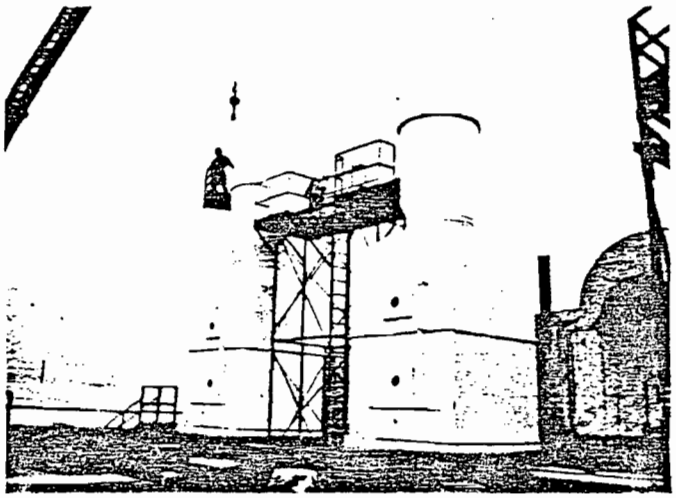
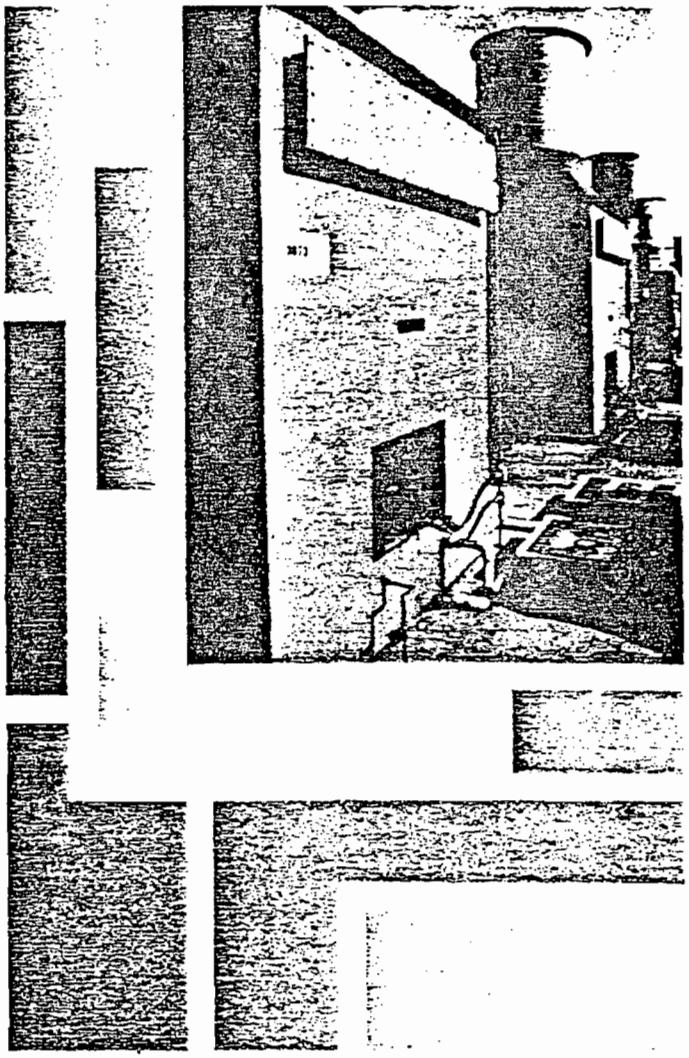




AIR POLLUTION CONTROL EQUIPMENT

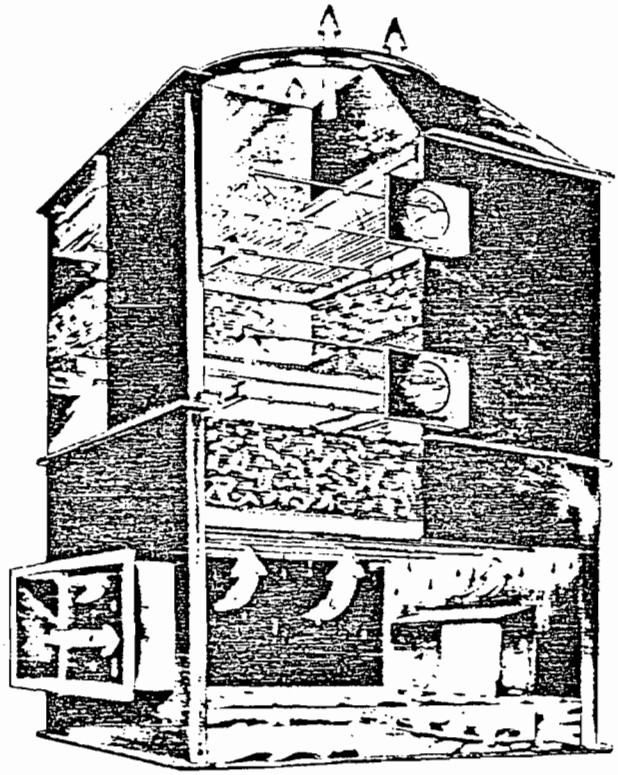
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.

PRINICIPLE OF PACKED SCRUBBER OPERATION

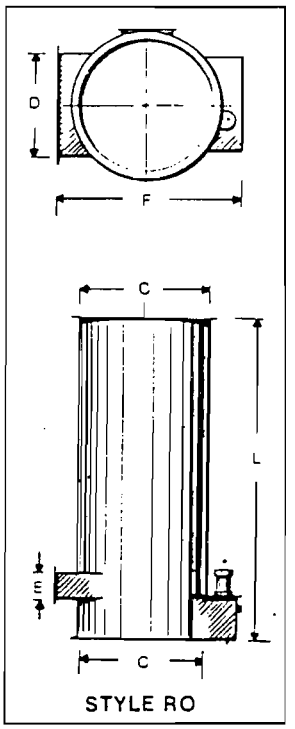
Beverly Pacific's **Packed Scrubbers** *are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.*

Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.

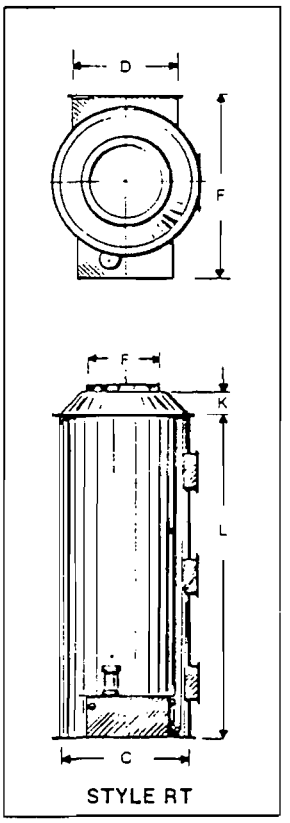


PACKED SCRUBBER DIMENSIONAL CHART
MODEL NUMBERS
DIMENSIONS IN INCHES

	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
B	24	36	42	48	60	72	84	96	108	120
C	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
H	13⅜	16⅜	22½	26¼	29½	35¼	39	47¼	52⅜	63⅞
I	10⅜	12⅞	17	20½	22¾	27	30	37½	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
O	38	52	58	65	79	91	106	119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	12¼	15	20	24½	27	33	36½	44½	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM	7	15	25	35	45	75	105	135	175	225
MAKE-UP GPM	0.7	1.5	2.0	3.0	4.0	7.0	10.0	13.0	17.0	22.0
HT OP. WT.	388	745	1110	1570	2690	4085	5670	7595	11790	16040
HT SHIP WT.	220	385	550	770	1210	1925	2750	3795	5390	7040
VT OP. WT.	318	660	1060	1500	2630	3910	5470	7400	11650	15800
VT SHIP WT.	150	300	500	700	1150	1750	2550	3600	5250	6800



STYLE RO



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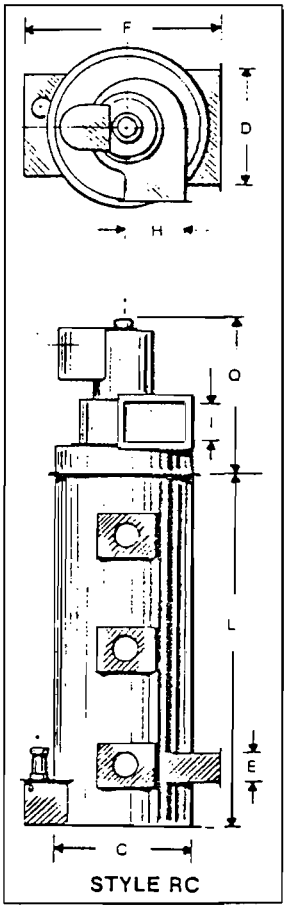

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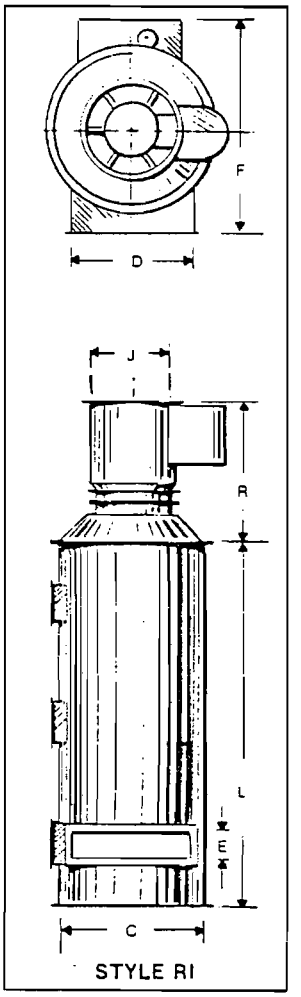

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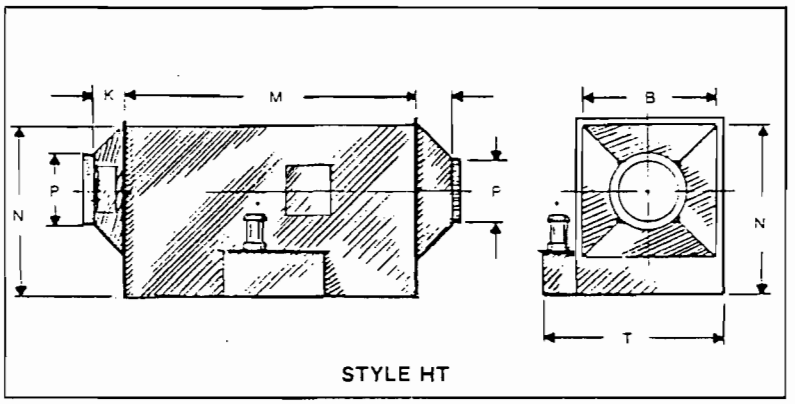

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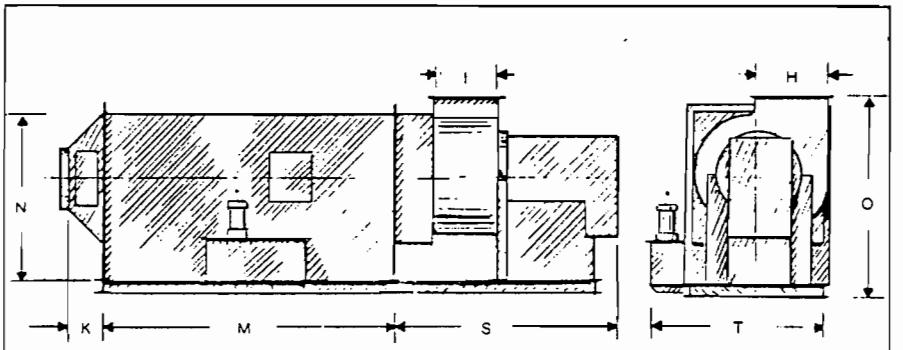
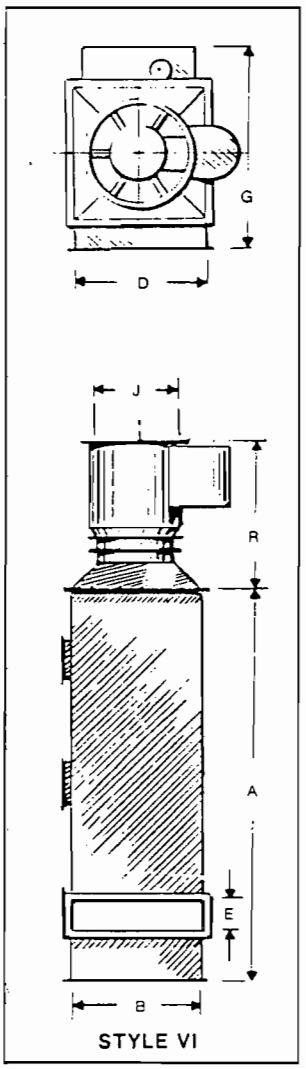
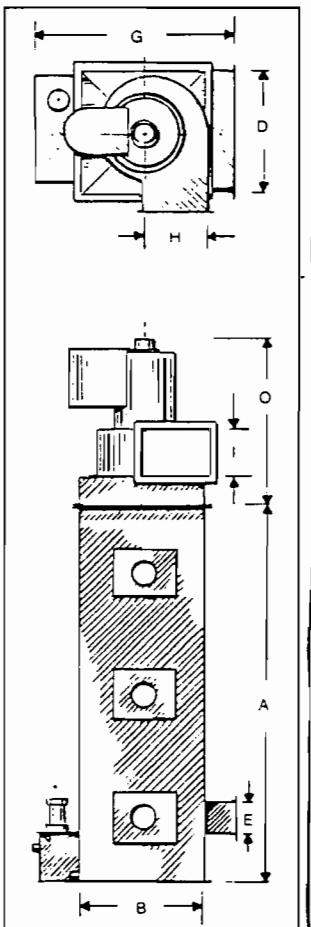


STYLE HC

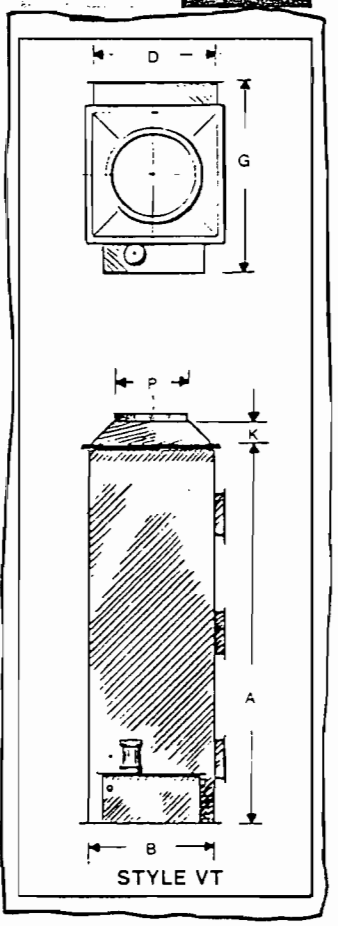
*May require one or more pumps.



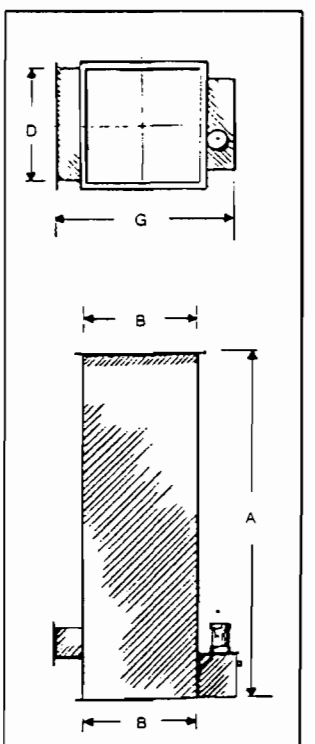
STYLE VI



STYLE VC



STYLE VT



STYLE VO

COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

ATTACHMENT 2

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 21, 1982

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. P. R. Bumgarner
Manager, Facilities Engineering
Harris Semiconductor
Post Office Box 883
Melbourne, Florida 32901

Dear Mr. Bumgarner:

RE: Air Pollution Construction Applications
Harris Semiconductor

The Bureau of Air Quality Management (BAQM) is currently processing the subject seven air pollution construction applications for the Harris Palm Bay expansion. However, the applications have been determined incomplete until further information is received addressing the following questions:

1. Section V, Part 3 requires attachment of the basis of the potential emission calculations. The applications as submitted show no relation between the potential emissions and the amount of solvents/acids used. Please provide some information that will verify potential emissions.

2. In each application, Attachment A refers to a "Utilization Rate" in pounds per hour, most of which are much greater than the potential emission discharge rates. Please indicate what becomes of the solvents/acids which are not controlled by the scrubbers. Are they recycled or reclaimed?

3. Verification of the proposed total net usage of solvents and acids is required on a tons per year basis. This net usage will be the amounts purchased minus the amounts reclaimed, recycled or captured in the scrubbing system. Any volatile materials used in the process that are not accounted for via a materials balance, are assumed to be emitted to the atmosphere.

4. Regarding the scrubbing liquids - how many times is the liquid recycled before treatment and do you propose to monitor the solvent/acid content of the recycled water? Also, will caustic be used in the acid vapor scrubber systems?

5. Please indicate the specific chemical formula for the solvents Freon, Photoresist, and Microstrip. Also indicate which isomers are used of the Propanol and Butyl Acetate solvents. This is important, as certain Freons and other organic compounds are exempted from control requirements. This information will remain confidential upon your request.

6. Emissions in tons per year do not coincide with the hourly emission rate and the hours of operation (constant or 8736 hours/year) as applied for. Please clarify this discrepancy.

Processing of the applications will resume when these questions have been resolved. Don't hesitate to contact Tim Powell or myself at (904)488-1344 if you have any questions.

Sincerely,

William Thomas, P.E.
Bureau of Air Quality
Management

WT/TP/pa

ATTACHMENT 3

HARRIS

Bruce

August 2, 1982

Mr. William Thomas, P.E.
Bureau of Air Quality Management
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Reference: Air Pollution Construction Applications for Harris Semiconductor -- Your Letter Dated May 21, 1982

Dear Mr. Thomas:

Thank you for your response of May 21, 1982 in which you acknowledged receipt of and review of the seven (7) air pollution construction applications for the Harris Semiconductor expansion. The questions presented in the referenced letter are under review and a response will be forwarded in the near future.

If you have any questions, please do not hesitate to call me at (305) 724-7657.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner
Manager
Plant Engineering

PRB/lmp
cc: R. R. Sands
L. J. Hart

ATTACHMENT 5

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
To: _____	Loctn.: _____	
From: _____	Date: _____	
Reply Optional [ ]	Reply Required [ ]	Info. Only [ ]
Date Due: _____	Date Due: _____	

TO: File - Harris Semiconductor: Construction Permit Application Nos. AC 05-54990,-91, -92, -93, -94, -95, -96

THRU: Bill Thomas BT

FROM: Bruce Mitchell RBM

DATE: September 29, 1982

SUBJ: Incompleteness meeting with the applicant at BAQM conference room at 10:30 AM on September 28, 1982.

The following data will be required in order to continue further processing of the referenced construction permit applications:

1. Potential annual pollutant emissions by mass balance of the VOC materials utilized in categories of solvents and acids (show all calculations, assumptions, references, tables, etc.).

2. Facility annual emissions by source of all pollutants emitted.

3. Request a change of the construction permit applications expiration date.

4. Since materials balance will be a specific condition requirement to account for the VOC emissions, detail the methodology that will be followed by the applicant in order to ensure compliance verification.

RBM/bjm

cc: P. R. Bumgarner
Robert R. Sands
Chuck Collins
Martha Harrell Hall

ATTACHMENT 6

BEST AVAILABLE COPY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

December 17, 1982

CERTIFIED MAIL

Mr. P. R. Bumgarner, Manager
Plant Engineering
Harris Corporation
PT-030 Box 883
Melbourne, Florida 32901

Dear Mr. Bumgarner:

On May 21, 1982, an incompleteness letter was sent to you requesting additional information concerning applications to construct, Nos. AC 05-54990, -91, -92, -93, -94, -95, and -96. Then, on September 28, 1982, an incompleteness meeting was held in the DER-BAQM conference room with representatives of Harris Corporation and DER-CAPS's engineers. Since that time no response has been received by this office.

If the project has been canceled, the Bureau requests that a letter withdrawing the permit application be submitted. If the project is still to be completed, please submit the information requested in our letter of May 21, 1982, and interoffice memorandum dated September 29, 1982, by January 17, 1983. Sufficient time has elapsed for a response and the Bureau has the option to deny the permit.

If you have any questions, please contact Bruce Mitchell of my staff at (904) 488-1344.

Sincerely,

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

CHF/BM/bjm

cc: Robert R. Sands
Chuck Collins
Martha Harrell Hall

ATTACHMENT 7

HARRIS

January 7, 1983

Bill

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER

JAN 11 1983

BAQM

Dear Mr. Fancy:

We received a letter from you on December 20, 1982 concerning our construction applications (Nos. AC 05-54990, -91, -92, -93, -94, -95 and -96). The project associated with these permit applications has not been cancelled and Harris Semiconductor intends to pursue the requests for construction permits.

The following information is submitted in response to the request for additional data presented at the meeting held September 28, 1982 and the subsequent interoffice memo dated September 29, 1982.

1. A total mass balance is under development and will be made available to your office as soon as it is completed.
2. The attached chart details the Harris Semiconductor facility annual emissions by source and current permit number.
3. Please change the construction permit applications expiration date to September 1, 1983.
4. Harris Semiconductor will ensure compliance verification through a program of annual sampling and analyses of the scrubber effluents. The sampling and analysis program will comply with current methodologies for VOC detection in air emissions.

We sincerely regret the delay in responding to your request for additional data. If you have any questions please contact Rob Sands, our Environmental Engineer, at (305) 729-5736.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner
Manager
Facilities Engineering

PRB/lmp
cc: Bruce Mitchell-DER/Tallahassee

Attachment

AIR POLLUTION PERMITS

Source Location	Permit Number	Acid Mist Tons/Year	H/C Emissions Tons/Year
BUILDING 4	A005-38485 (S)	.032	.02
	A005-36146 (F)	.125	-
	A005-36147 (F)	-	.185
	A005-36148 (S)	.546	-
	A005-36149 (S)	1.56	-
	A005-36150 (S)	1.108	-
	A005-36152 (F)	.867	-
	A005-36154 (F)	-	1.60
BUILDING 6	A005-38486 (S)	1.014	-
	A005-36155 (F)	-	1.977
	A005-36156 (F)	3.384	-
	A005-36157 (F)	4.995	-
	A005-36158 (F)	-	3.784
	A005-36159 (F)	-	2.640
	A005-36160 (F)	-	2.246
BUILDING 51	A005-38487 (S)	.12	-
	A005-36161 (S)	.354	.07
	A005-36162 (S)	-	3.361
	A005-36163 (S)	-	8.68
	A005-36164 (S)	.171	.056
	A005-36165 (S)	.222	.084
	A005-36166 (S)	-	10.879
BUILDING 54	A005-38488 (S)	.063	.045
	A005-36882 (S)	1.139	.4712
BUILDING 60	A005-38489 (S)	.094	.067
		15.794	36.1652
	TOTAL	51.96	

F = Fan Exhaust

S = Scrubber Exhaust

RRS-1/6/83

ATTACHMENT 8

HARRIS

May 4, 1983

5/16 Patty
Bill

Mr. C. H. Fancy
Deputy Chief
Bureau of Air Quality Management
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER
MAY 16 1983
BAQM

Reference: Harris Semiconductor -- Construction Permit Applications
Nos. AC-05-54990, -91, -92, -93, -94, -95, -96

Dear Mr. Fancy:

The attached information is submitted in order to complete the construction permit applications referenced. Attachment A enclosed is to replace the Attachment A submitted with the applications; and represents updated, accurate data on the utilization, evaporation, and potential emissions for each source for which we are requesting permits. Attachment C presents Material Balance/Flow Diagram for the VOC/Acid materials utilized in each building and exhausted through the individual fume scrubbers.

Also attached are the basic assumptions and methodologies utilized in developing this data.

It is hoped that this material will satisfy your requirements. If you have any questions, please contact Rob Sands, our Environmental Engineer, at (305) 729-5736.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner

P. R. Bumgarner
Manager
Plant Engineering

PRB/lmp

Attachments

ASSUMPTIONS/CALCULATIONS

HARRIS SEMICONDUCTOR

Construction Permit Application Nos. AC-05-54990, -91, -92, -93, -94, -95, -96

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1. Production modules are in operation approximately 264 days each year.
2. Building 62 operations (AC-05-54992, -93, -94) occur 8-hours each production day (2,112 hours/year).
3. Building 59 and Building 63 operations (AC-05-54990, -91, -95, -96) occur 24-hours each production day (6,336 hours/year).
4. The chemical usage volumes for Buildings 59, 62 & 63 were derived by surveying similar operations in the existing facility. A one time survey was conducted to determine the chemical volumes utilized during the survey period. However, frequent changes in production techniques, which are common in the semiconductor industry, make this data totally accurate only for that period in time in which the survey was conducted.
5. The Building 59 operation will be essentially the same as current operations in Building 6. The chemical usage volumes for Building 59 were derived by determining current Building 6 usage and increasing that number to account for the increase in production area in the new building.
6. The Building 63 operation will be essentially the same as current operations in Building 4. Therefore, the Building 63 chemical usage volumes were derived from a survey of the volumes of chemicals utilized in Building 4. These volumes were increased to account for an increase in product wafer size from 3 inch to 4 inch, and to account for the increase in production area in the new building.
7. Building 62 chemical usage volumes were determined by surveying current operations in the existing facility which will be moved to the new building upon completion.
8. A nonmoving static diffusion film of air over the surface of the process chemicals, due to the laminar flow hoods, creates a diffusion barrier on the surface of the liquid which reduces the normal evaporation rate at a given temperature. Therefore, the assumption is made that the effective vapor pressure, of any chemical vapor, at the top of the static diffusion film of air is only 30% (.3) of the saturation vapor pressure at the surface of the liquid.
9. Basis of evaporation calculation:

$$\frac{\text{Mass of Liquid Evaporated}}{\text{Time}} = \frac{0.3 \quad (P^*)}{P_t} \times \frac{\text{Mass of Liquid Used}}{\text{Time}}$$

P^* = Saturation vapor pressure of liquid in tank

P_t = Total atmospheric pressure

10. Compliance verification for VOC emissions will be accomplished through an annual program of sampling and analysis. If compliance testing is required for acid mist from dedicated acid vapor scrubbers, it will be accomplished through sampling and analysis of the scrubber discharge water.

RRS-5/4/83

ATTACHMENT A
HARRIS SEMICONDUCTOR

BEST AVAILABLE COPY

FS-59-1 (AC-05-54990)

SYSTEM 1 SOLVENTS

	UTILIZATION			EVAPORATION		Removal	EMISSION		
MICAL	lb/hr	lb/day	T/year	lb/hr	lb/day	Efficiency	lb/hr	lb/year	T/year
tone (Acetone)	48.2	1157.5	152.8	3.5	83.2	85%	.5	3292.8	1.6
hanol (Methanol)	9.9	237.6	31.4	.4	9.1	85%	.1	359.9	.2
panol (Propanol)	44.6	1069.7	141.2	.6	13.9	85%	.1	552.2	.3
utyl Acetate (N-Butyl Acetate)	11.3	270.4	35.7	.1	1.6	85%	.01	63.4	.03
rostrip (Microstrip)	122.7	2943.9	388.6	2.4	58.1	85%	.4	2300.0	1.2
ist (Photoresist)	8.7	208.3	27.5	.02	.4	85%	<.01	16.5	<.01
ene (Xylene)	3.6	87.3	11.5	.01	.3	85%	<.01	12.7	<.01
AL	249.0	5974.7	788.7	7.03	166.6		1.13	6597.5	3.35

24 HOUR PER DAY PRODUCTION
PRODUCTION OCCURS 264 DAYS PER YEAR

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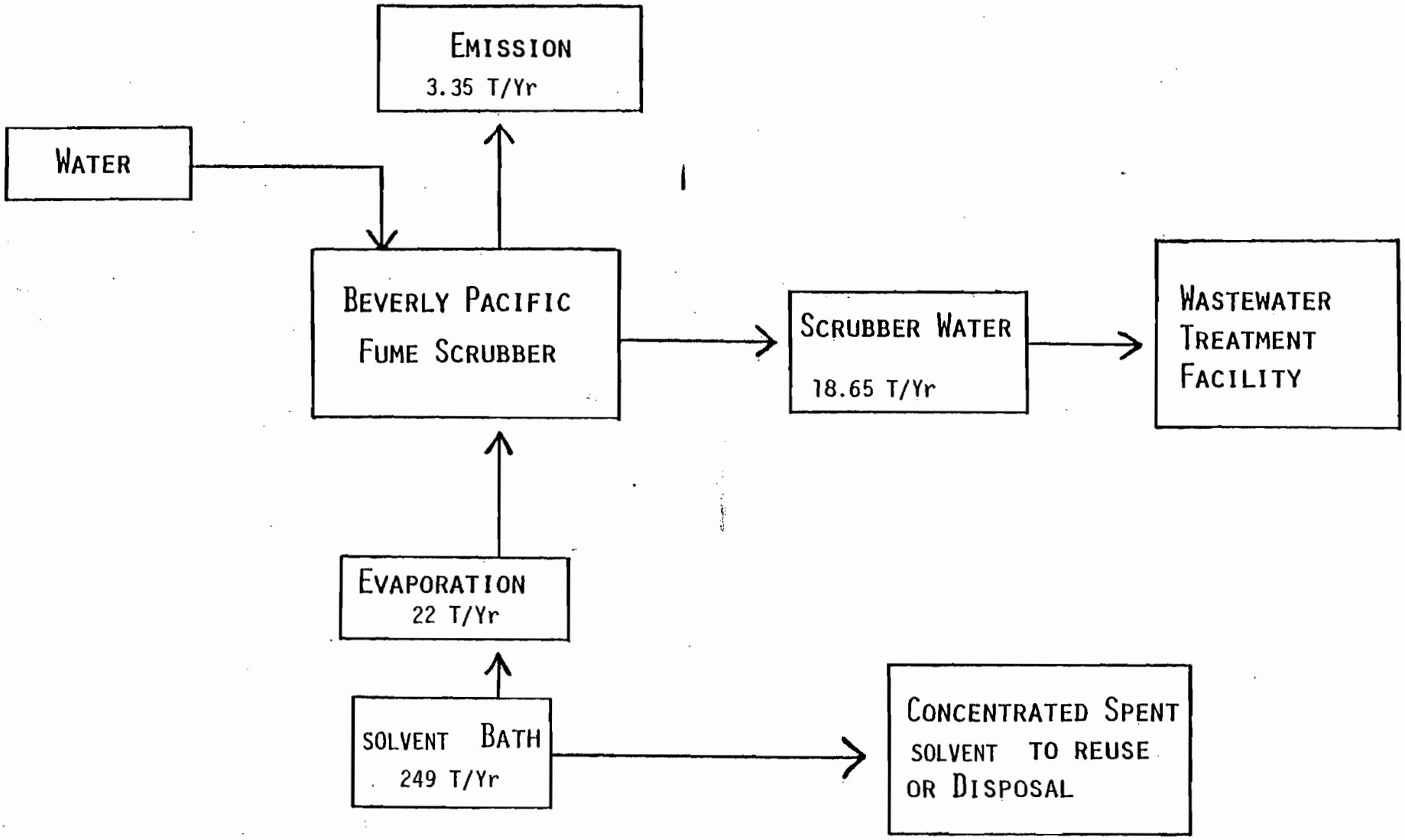
MATERIAL BALANCE/FLOW DIAGRAM

SOLVENT VAPOR SCRUBBER
FS-59-1 (AC-05-54990)



RRS-5/5/83

ATTACHMENT A
HARRIS SEMICONDUCTOR
FS-59-2 (AC-05-54991)

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SYSTEM 2 ACID

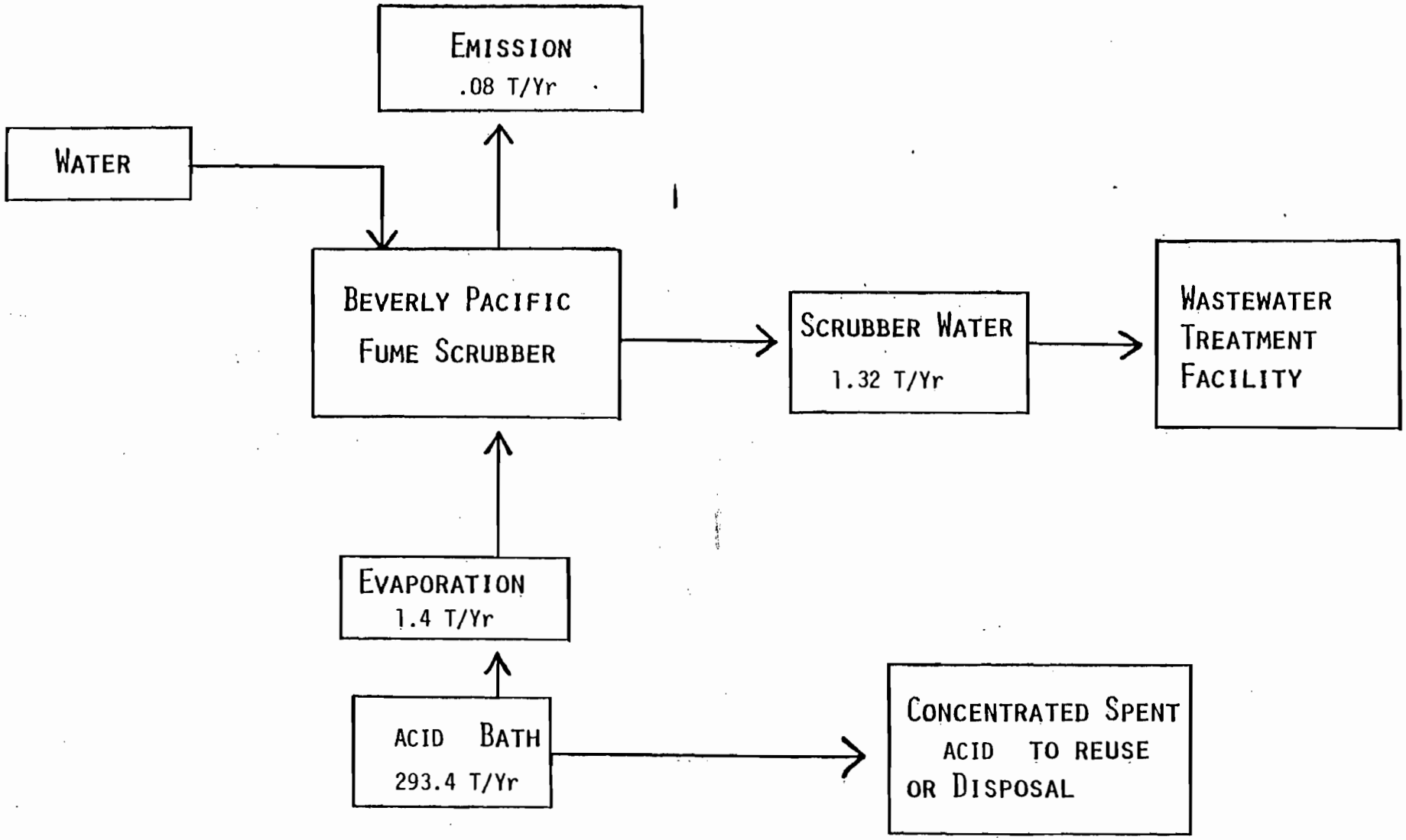
	UTILIZATION			EVAPORATION		Removal	EMISSION		
ICAL	lb/hr	lb/day	T/year	lb/hr	lb/day	Efficiency	lb/hr	lb/year	T/year
rofluoric Acid (Hydrofluoric Acid)	13.9	333.9	44.1	.08	1.9	95%	<.01	24.4	.01
ric Acid (Nitric Acid)	12.6	303.7	40.1	.04	1.0	95%	<.01	12.7	.01
furic Acid (Sulfuric Acid)	127.9	3069.1	405.1	.05	1.2	95%	<.01	15.8	.01
tic Acid (Acetic Acid)	23.0	551.5	72.8	.1	2.4	95%	<.01	31.7	.02
onium Fluoride (Ammonium Fluoride)	24.4	586.0	77.4	.2	4.0	95%	<.01	53.2	.03
sphoric Acid (Phosphoric Acid)	91.6	2198.9	290.2	.01	.2	95%	<.01	3.2	<.01
AL	293.4	7043.1	929.7	.48	10.7		<.06	141.0	.08

24 HOUR PER DAY PRODUCTION

PRODUCTION OCCURS 264 DAYS PER YEAR

MATERIAL BALANCE/FLOW DIAGRAM

ACID VAPOR SCRUBBER
FS-59-2 (AC-05-54991)



RRS-5/5/83

ATTACHMENT A
HARRIS SEMICONDUCTOR
FS-62A-1 (AC-05-54992)

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SYSTEM 1 SOLVENT

ICAL	UTILIZATION lb/hr	UTILIZATION lb/day	UTILIZATION T/year	EVAPORATION lb/hr	EVAPORATION lb/day	Removal Efficiency	EMISSION lb/hr	EMISSION lb/year	EMISSION T/year
one (Acetone)	1.1	8.6	1.1	.1	.7	85%	.01	24.4	.01
anol (Methanol)	1.1	8.9	1.2	.04	.3	85%	<.01	13.6	<.01
hloroethane (1,1,1-trichloroethane)	.3	2.1	.3	<.01	<.05	85%	<.01	1.9	<.01
ne (Xylene)	1.2	9.8	1.3	<.01	<.01	85%	<.01	.8	<.01
anol (Propanol)	7.8	62.5	8.3	.1	.8	85%	.01	21.5	.01
l Acetate (N-Butyl Acetate)	3.3	26.3	3.3	.02	.2	85%	<.01	6.2	<.01
oresist (Photoresist)	1.8	14.2	1.9	<.01	.03	85%	<.01	1.1	<.01
ostrip (Microstrip)	.7	5.9	.8	.02	.1	85%	<.01	4.6	<.01
L	17.3	138.3	18.2	.3	2.2		<.08	74.1	<.08

8 HOUR PER DAY PRODUCTION
PRODUCTION OCCURS 264 DAYS PER YEAR

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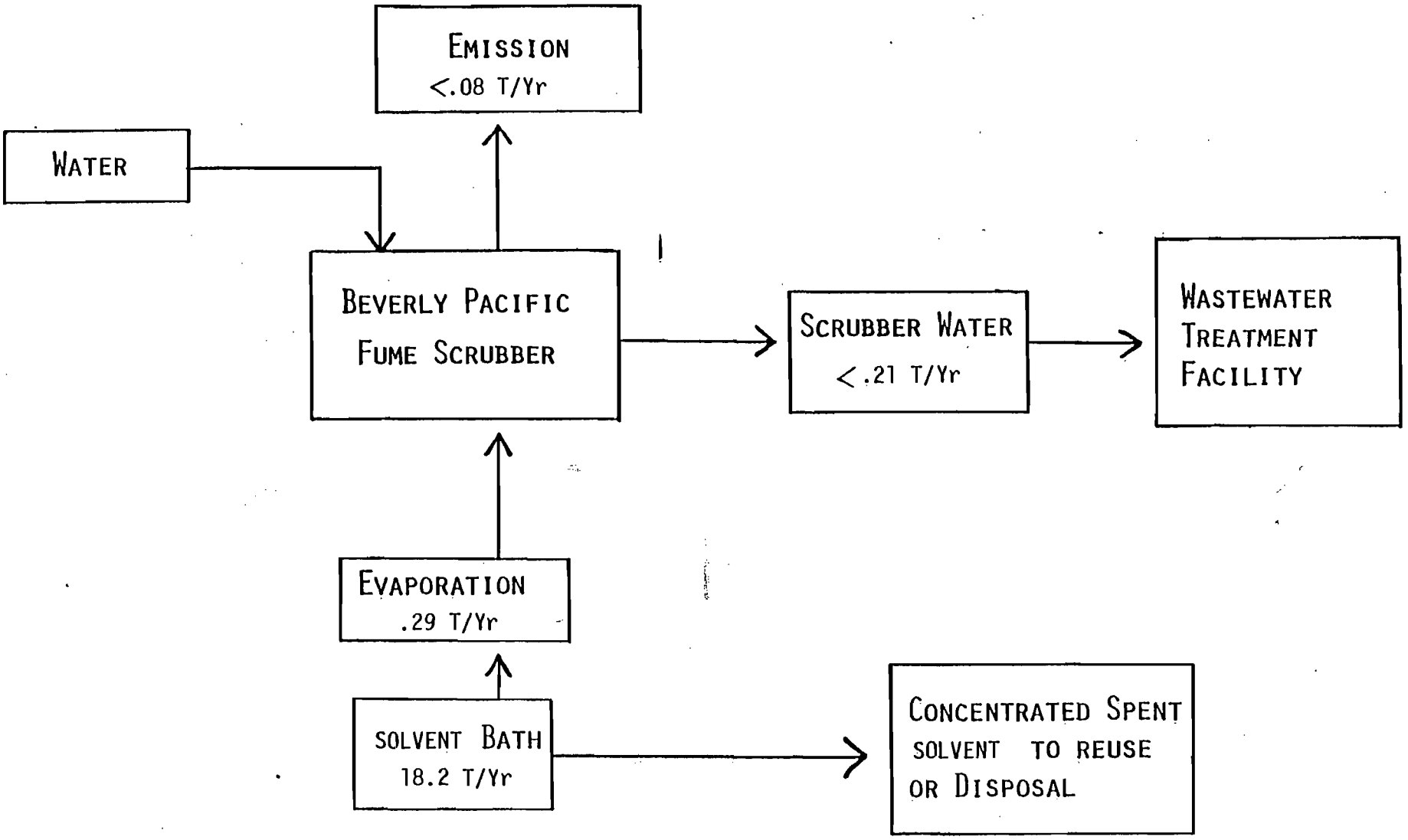


RRS-5/5/83

ATTACHMENT A
HARRIS SEMICONDUCTOR
FS-62A-2 (AC-05-54994)

BEST AVAILABLE COPY

SYSTEM 2 ACID

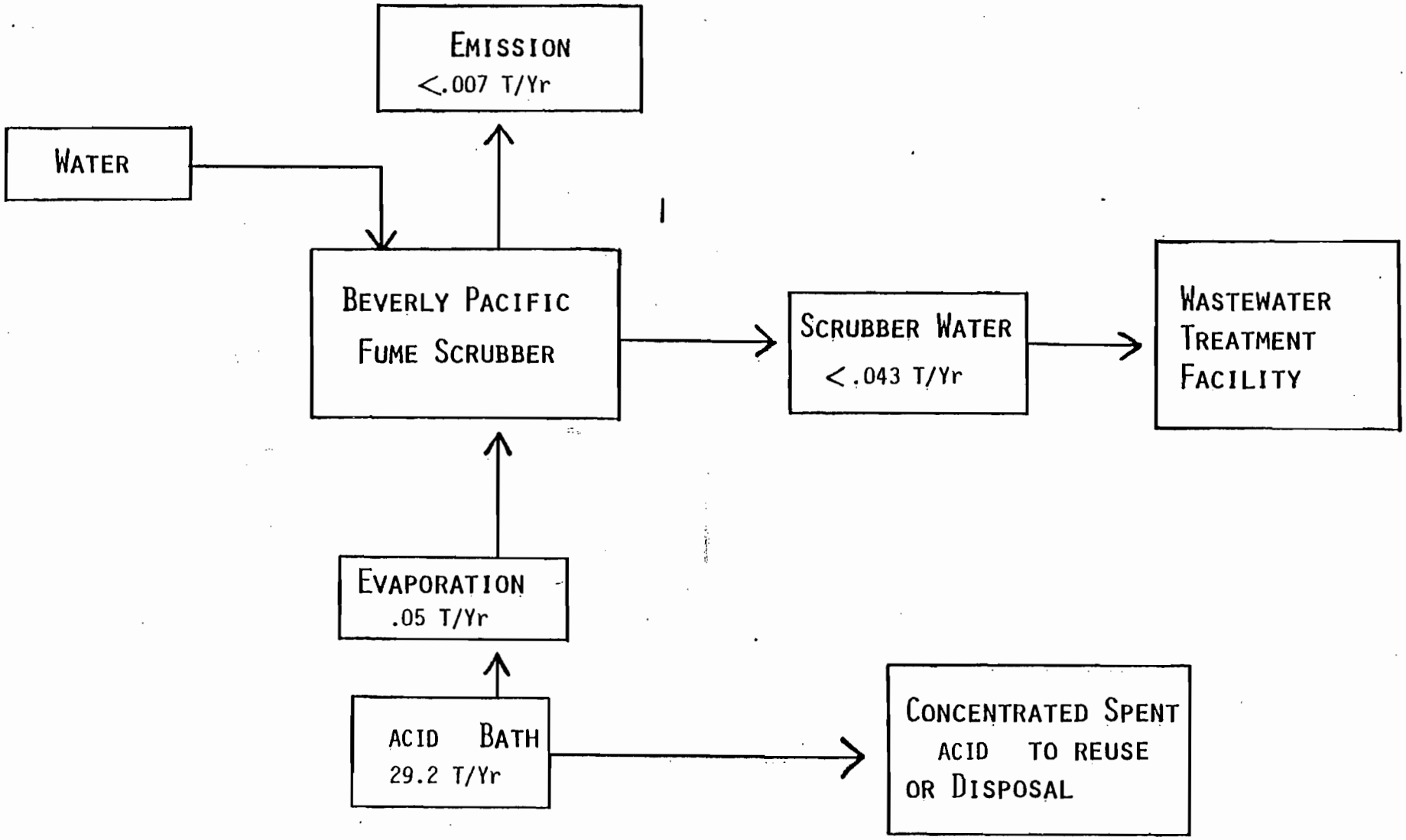
ICAL	UTILIZATION lb/hr	UTILIZATION lb/day	UTILIZATION T/year	EVAPORATION lb/hr	EVAPORATION lb/day	Removal Efficiency	EMISSION lb/hr	EMISSION lb/year	EMISSION T/year
tic Acid (Acetic Acid)	.5	3.6	.5	<.01	.2	95%	<.001	.2	<.001
onium Fluoride (Ammonium Fluoride)	1.7	13.4	1.8	.01	.09	95%	<.001	1.2	<.001
rofluoric Acid (Hydrofluoric Acid)	1.9	15.2	2.0	.01	.08	95%	<.001	1.1	<.001
ric Acid (Nitric Acid)	3.1	24.9	3.3	.01	.08	95%	<.001	1.0	<.001
furic Acid (Sulfuric Acid)	17.7	141.9	18.7	<.01	.06	95%	<.001	.7	<.001
rochloric Acid (Hydrochloric Acid)	.4	3.0	.4	<.01	.03	95%	<.001	.4	<.001
sphoric Acid (Phosphoric Acid)	2.4	18.8	2.5	<.01	<.01	95%	<.001	.02	<.001
AL	27.7	220.8	29.2	<.07	.37		<.007	4.6	<.007

8 HOUR PER DAY PRODUCTION

PRODUCTION OCCURS 264 DAYS PER YEAR

MATERIAL BALANCE/FLOW DIAGRAM

ACID VAPOR SCRUBBER
FS-62A-2 (AC-05-54994)



RRS-5/5/83

ATTACHMENT A
HARRIS SEMICONDUCTOR
FS-62B-1 (AC-05-54993)

BEST AVAILABLE COPY

SYSTEM 3 SOLVENT

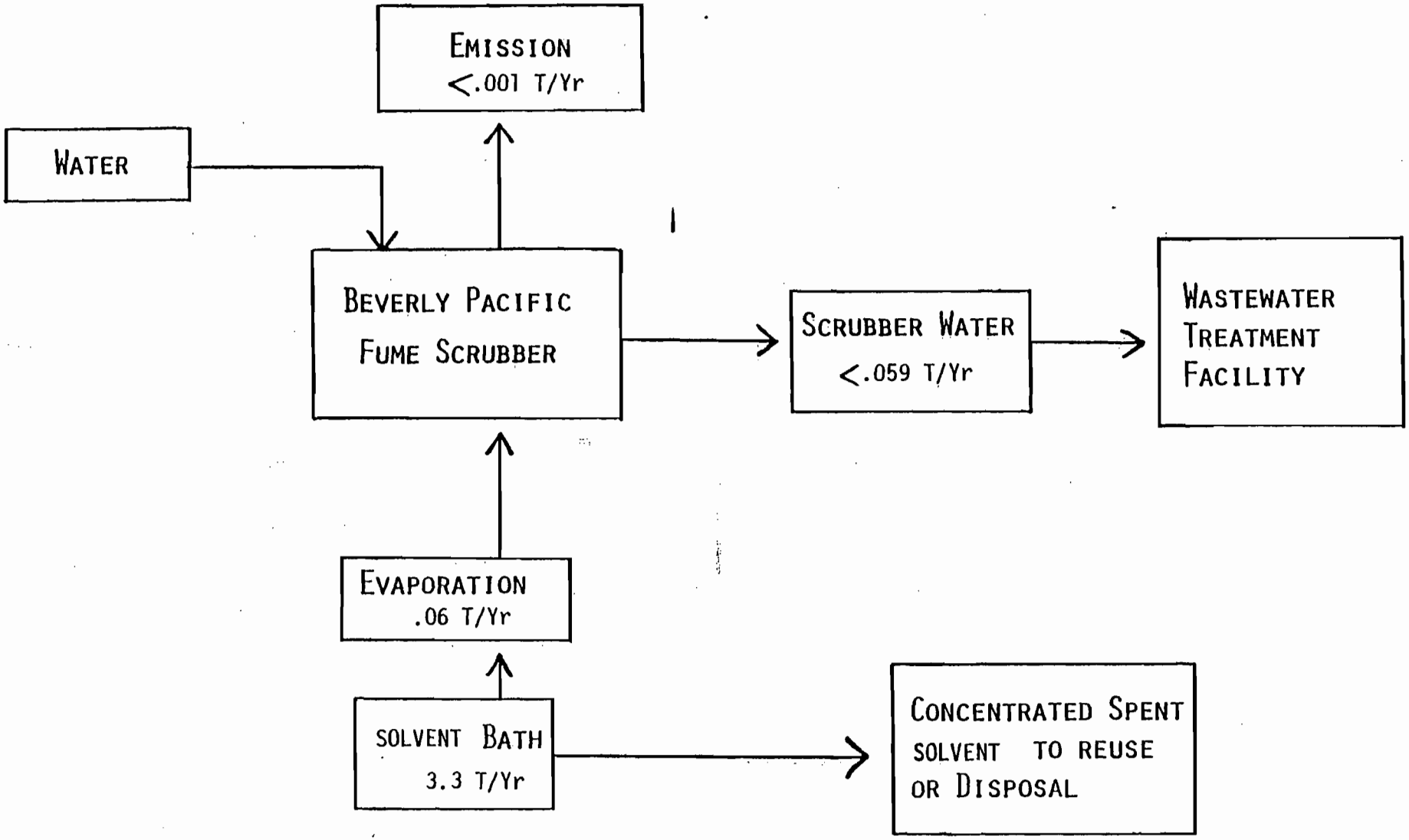
ICAL	UTILIZATION lb/hr	UTILIZATION lb/day	UTILIZATION T/year	EVAPORATION lb/hr	EVAPORATION lb/day	Removal Efficiency	EMISSION lb/hr	EMISSION lb/year	EMISSION T/year
tone (Acetone)	.2	1.3	.2	.01	.09	85%	.002	3.7	.002
anol (Methanol)	.1	1.0	.1	<.01	.04	85%	.001	1.6	.001
,1-Trichloroethane (1,1,1-trichloroethane)	.3	2.6	.3	.01	.1	85%	.002	4.0	.002
ene (Xylene)	.2	1.2	.2	<.01	<.01	85%	<.001	.1	<.001
anol (Propanol)	1.0	7.8	1.0	.01	.1	85%	.002	4.0	.002
yl Acetate (N-Butyl Acetate)	.4	3.5	.5	<.01	.02	85%	<.001	.8	<.001
anol (Ethanol)	.9	7.3	1.0	.01	.1	85%	.002	4.6	.002
AL	3.1	24.7	3.3	<.07	.46		.01	18.8	<.001

8 HOUR PER DAY PRODUCTION

PRODUCTION OCCURS 264 DAYS PER YEAR

MATERIAL BALANCE/FLOW DIAGRAM

SOLVENT VAPOR SCRUBBER
FS-62B-1 (AC-05-54993)



RRS-5/5/83

ATTACHMENT A
HARRIS SEMICONDUCTOR
FS-63-1 (AC-05-54995)

BEST AVAILABLE COPY

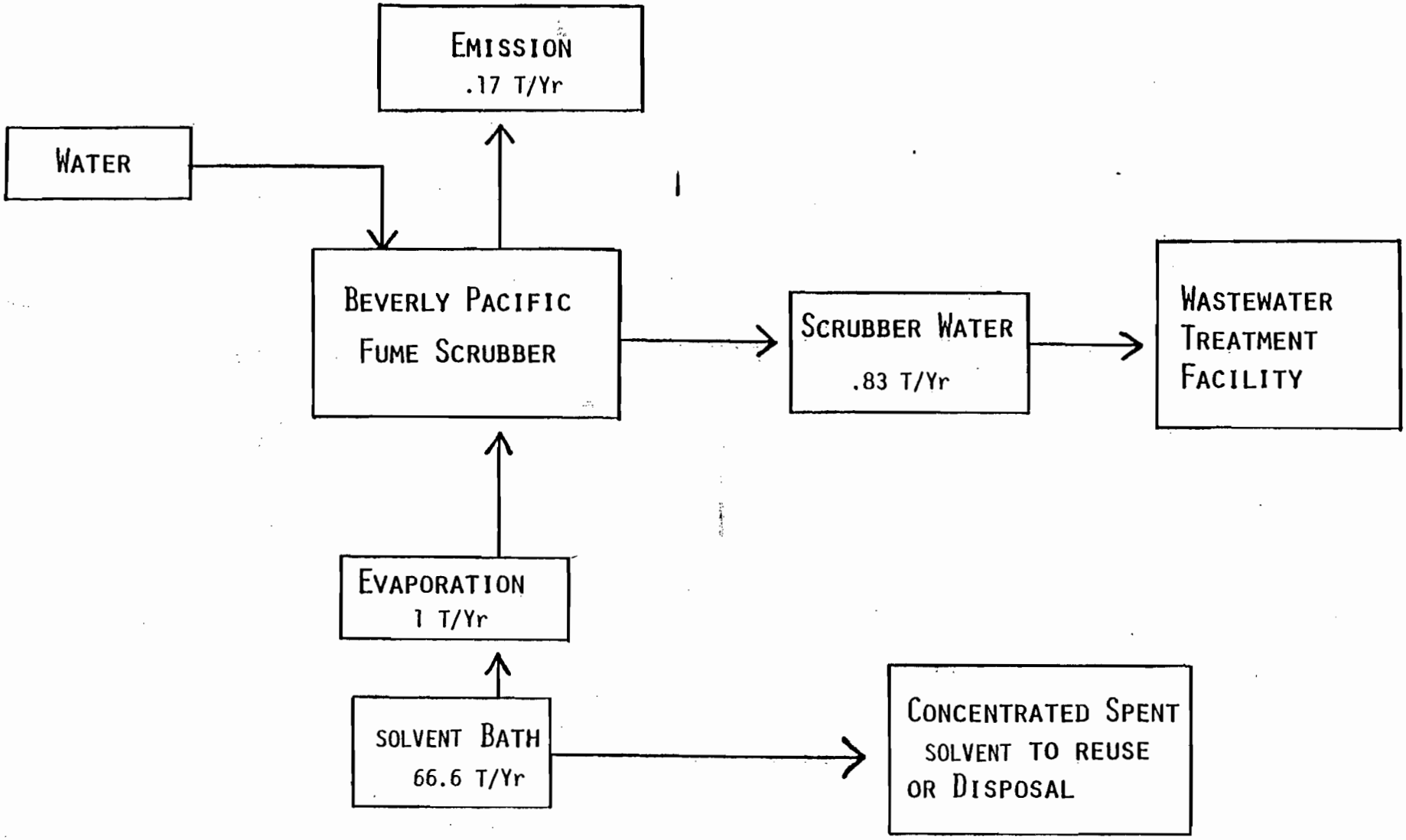
SYSTEM 1 SOLVENT

MICAL	UTILIZATION lb/hr	UTILIZATION lb/day	UTILIZATION T/year	EVAPORATION lb/hr	EVAPORATION lb/day	Removal Efficiency	EMISSION lb/hr	EMISSION lb/year	EMISSION T/year
panol (Propanol)	3.7	89.1	11.8	.05	1.2	85%	.01	46.2	.02
,1-Trichloroethane (1,1,1-trichloroethane)	4.4	104.9	13.8	.17	4.1	85%	.03	164.1	.08
anol (Ethanol)	4.8	114.6	15.1	.07	1.8	85%	.01	71.6	.04
yl Acetate (N-Butyl Acetate)	1.2	28.1	3.7	.01	.17	85%	<.01	6.3	.01
ist (Photoresist)	1.0	22.3	2.9	<.01	.04	85%	<.01	1.9	<.01
ene (Xylene)	6.1	146.2	19.3	.01	.29	85%	<.01	11.7	<.01
AL	21.2	505.2	66.6	.32	7.6		<.08	301.9	.17

24 HOUR PER DAY PRODUCTION
PRODUCTION OCCURS 264 DAYS PER YEAR

MATERIAL BALANCE/FLOW DIAGRAM

SOLVENT VAPOR SCRUBBER
FS-63-1 (AC-05-54995)



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ATTACHMENT A
HARRIS SEMICONDUCTOR
FS-63-2 (AC-05-54996)

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SYSTEM 2 ACID

	UTILIZATION			EVAPORATION		Removal	EMISSION		
ICAL	lb/hr	lb/day	T/year	lb/hr	lb/day	Efficiency	lb/hr	lb/year	T/year
rofluoric Acid (Hydrofluoric Acid)	24.4	585.8	77.3	.14	3.2	95%	<.01	42.4	.02
rochloric Acid (Hydrochloric Acid)	3.5	84.0	11.1	.04	.8	95%	<.01	11.4	<.01
ric Acid (Nitric Acid)	3.7	88.9	11.7	.01	.3	95%	<.01	3.8	<.01
furic Acid (Sulfuric Acid)	187.4	4496.6	593.6	.07	1.8	95%	<.01	23.4	<.01
AL	219.0	5255.3	693.7	.26	6.1		<.04	81.0	<.05

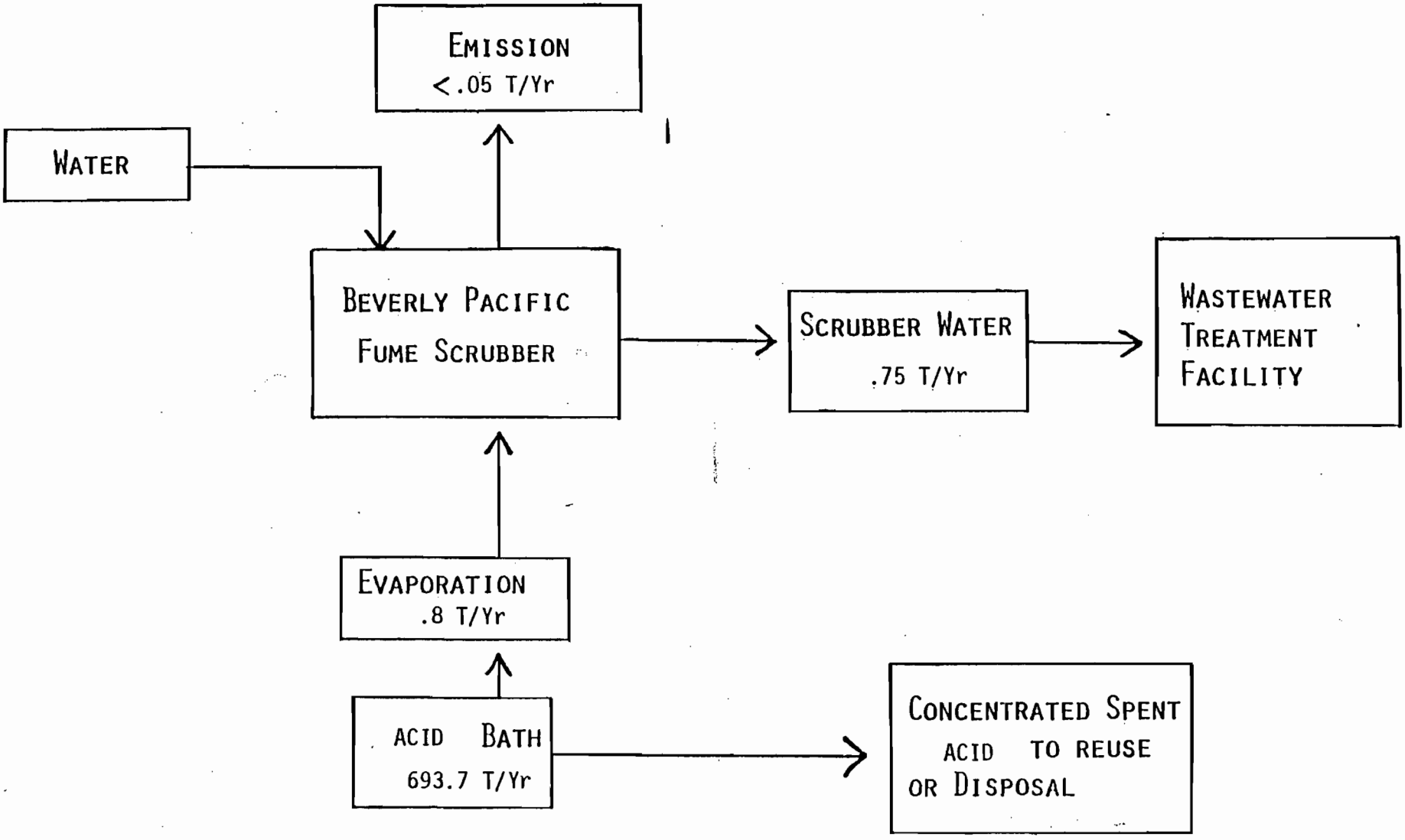
24 HOUR PER DAY PRODUCTION

PRODUCTION OCCURS 264 DAYS PER YEAR

ATTACHMENT C

MATERIAL BALANCE/FLOW DIAGRAM

ACID VAPOR SCRUBBER
FS-63-2 (AC-05-54996)



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