

Check Sheet

Company Name: NAVAL AIR STATION, JACKSONVILLE

Permit Number: AC 16-192940, -192941

PSD Number: _____

Permit Engineer: _____

Application:

- ☒ Initial Application
- ☒ Incompleteness Letters
- ☒ Responses
- ☐ Waiver of Department Action
- ☐ Department Response
- ☐ Other

Cross References:

- ☐
- ☐
- ☐

Intent:

- ☒ Intent to Issue
- ☒ Notice of Intent to Issue
- ☒ Technical Evaluation
- ☒ BACT or LAER Determination
- ☒ Unsigned Permit

Correspondence with:

- ☐ EPA
- ☐ Park Services
- ☐ Other
- ☒ Proof of Publication
- ☐ Petitions - (Related to extensions, hearings, etc.)
- ☐ Waiver of Department Action
- ☐ Other

Final

Determination:

- ☒ Final Determination
- ☒ Signed Permit
- ☒ BACT or LAER Determination
- ☐ Other

Post Permit Correspondence:

- ☒ Extensions/Amendments/Modifications
- ☒ Other



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

2155 EAGLE DR., P. O. BOX 10068

CHARLESTON, S. C. 29411-0068

PLEASE ADDRESS REPLY TO THE
COMMANDING OFFICER, NOT TO
THE SIGNER OF THIS LETTER.

5090

Code 1832

01 OCT 1992

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. C. H. Fancy, P. E.
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

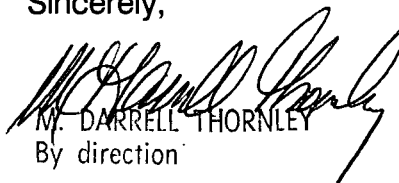
HAZARDOUS WASTE MINIMIZATION, NAVAL AIR STATION, JACKSONVILLE, FL
AIR PERMITS NO. AC-16-192941 AND AC-16-192940

Dear Mr. Fancy:

This is in reference to your letter of 18 September 1992 regarding the above subject matter. Enclosed is a check for \$100.00 to cover the fee to extend the existing permits until 31 July 1993.

Should you have any questions, please contact Mr. Chandra Sheth at (803) 743-0553.

Sincerely,


M. DARRELL THORNLEY
By direction

Encl:

(1) Check #8347-70046614 for \$100.00

Copy to:

NAS Jacksonville (PWD)

J. Nelson
B. Keelyne
R. Robinson

RECEIVED
DER-MAIL ROOM

1992 OCT -5 PM 1:26

1031-

Clay 22 Grand
172-2200

To Patty
Date 10-14 Time 10:15

WHILE YOU WERE OUT

M Johnny Cole
of _____
Phone SC 880-4310 (378)
Area Code Number Extension

<input type="checkbox"/>	TELEPHONED	<input checked="" type="checkbox"/>	PLEASE CALL
<input type="checkbox"/>	CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN
<input type="checkbox"/>	WANTS TO SEE YOU	<input type="checkbox"/>	URGENT
<input type="checkbox"/>	RETURNED YOUR CALL		

Message RE: TRACKING

PLM
Operator



United States Treasury

15-51
000

NAVY

8347-70046614



Pay to
the order of

CHARLESTON, SOUTH CAROLINA

Check No.

SEP 29, 1992

FLORIDA DEPT OF ENVIRONMENTAL REGULATION
C/O CØ, SOUTHNAVFAC
2155 EAGLE DRIVE, P O BOX 10068
CHARLESTON, SC 29411-0068

THE
F TO

*****100.00*

VOID AFTER ONE YEAR

EXACTLY 100 DOLLARS 00 CENTS

U.S. DEPT. OF THE TREASURY
J. S. Smith
U.S. DISBURSING OFFICER

RECEIVED
DER-MAIL ROOM

83479

000000518: 700466140

HAZARDOUS WASTE MINIMIZATION, NAVAL AIR STATION, JACKSONVILLE, FL
AIR PERMITS NO. AC-16-192941 AND AC-16-192940

1:20

Dear Mr. Fancy:

This is in reference to your letter of 18 September 1992 regarding the above subject matter. Enclosed is a check for \$100.00 to cover the fee to extend the existing permits until 31 July 1993.

Should you have any questions, please contact Mr. Chandra Sheth at (803) 743-0553.

Sincerely,

W. Darrell Thornley
W. DARRELL THORNEY
By direction

Encl:

(1) Check #8347-70046614 for \$100.00

Copy to:

NAS Jacksonville (PWD)

1031

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address

2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Chandra Sheth
Naval Facilities Eng. Command
P. O. Box 10068
Charleston, SC 29411-0068

4a. Article Number

P 062 921 999

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

9/24/92

5. Signature (Addressee)**8. Addressee's Address (Only if requested and fee is paid)****6. Signature (Agent)**

PS Form 3811, November 1990 ☆ U.S. GPO: 1991-287-066

DOMESTIC RETURN RECEIPT

P 062 921 999



**Receipt for
Certified Mail**

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Mr. Chandra Sheth	
Street and No. P. O. Box 10068	
P.O., State and ZIP Code Charleston, SC 29411-0008	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
Mailed: 9-22-92	
Permit: AC 16-192941 -940	

PS Form 3800, June 1991



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

September 18, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Chandra Sheth
Naval Facilities Engineering Command
P. O. Box 10068
Charleston, SC 29411-0068

Dear Mr. Sheth:

RE: Air Construction Permit No. AC 16-192941 and AC 16-192940
Request for Permit Extensions

The Bureau of Air Regulation received your September 11, 1992, request for the above referenced project. On October 30, 1991, Rule 17-4.050(4)(o), F.A.C., was changed to require a \$50 processing fee for a permit extension; therefore, we will not be able to take action on your request until a \$100 fee (\$50 for each permit) is received. If you have any questions, please call Patty Adams at (904)488-1344.

Sincerely,

C. H. Rancy, P.E.
Chief

Bureau of Air Regulation

CHF/pa

cc: Teresa Heron



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

NAVAL FACILITIES ENGINEERING COMMAND

2155 EAGLE DR., P. O. BOX 10068

CHARLESTON, S. C. 29411-0068

PLEASE ADDRESS REPLY TO THE
COMMANDING OFFICER, NOT TO
THE SIGNER OF THIS LETTER.

5090

Code 1832

11 SEP 1992

RECEIVED

SEP 16 1992

Division of Air
Resources Management

Mr. C. H. Fancy, P. E.
Chief, Bureau of Air Regulations
Florida Department of Environmental Regulations
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

HAZARDOUS WASTE MINIMIZATION, NAVAL AIR STATION, JACKSONVILLE, FL
AIR CONSTRUCTION PERMITS NO. AC-16-192941 AND AC-16-192940

Dear Mr. Fancy:

The subject permits have expired on 30 July 1992. The project is under construction and is expected to be completed within six months, therefore, an extension of the subject permits is requested until 28 February 1993.

Should you have any questions, please contact Mr. Chandra Sheth at (803) 743-0553.

Sincerely,

[Signature]
MICHAEL D. THORNLEY, P.E.
Head, Air/solid Waste Branch

Copy to:

NAS Jacksonville (PWC)

cc: J. Heron
B. Kutyma, NE Dist
R. Robinson, Dural es,



Florida Department of Environmental Regulation

Northeast District • Suite B200, 7825 Baymeadows Way • Jacksonville, Florida 32256-7577

Lawton Chiles, Governor

Carol M. Browner, Secretary

Commanding Officer
Naval Aviation Depot
6280 Code 0015
Naval Air Station
Jacksonville, FL 32212-0016

**RE: Duval County - Air Pollution
Air Stripper No. 2
Permit No. AC16-192941
I.D. No. 31-16-0215-61**

Dear Commander:

The Air Quality Division and the Department of Environmental Regulation (DER) have approved the revision of the captioned permit(s) as follows:

EXPIRATION DATE

FROM: July 30, 1992

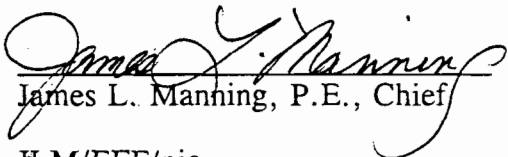
TO: July 30, 1993

This letter and Department of the Navy letter dated June 2, 1992 shall be attached to and become part of the captioned permit.

Any questions in this matter should be directed to Mr. Ronald L. Roberson of Air Quality Division (AQD) at (904) 630-3666.

City of Jacksonville
Air Quality Division

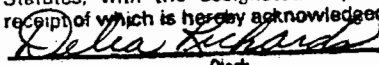
State of Florida
Department of Environmental Regulation


James L. Manning, P.E., Chief

JLM/EEF/nic


Ernest E. Frey, P.E., Director of District Management

cc: Mr. Andrew G. Kutyna, P.E., DER
AQD Air Permitting File
AQD File 1910-JJ

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 Florida
Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.
 07/20/92
Clerk Date

Administration 448-4300
Air 448-4310
Waste Management 448-4320



Water Facilities 448-4330
Water Management 448-4340
FAX 448-4366



Florida Department of Environmental Regulation

Northeast District • Suite B200, 7825 Baymeadows Way • Jacksonville, Florida 32256-7577

Lawton Chiles, Governor

Carol M. Browner, Secretary

Commanding Officer
Naval Aviation Depot
6280 Code 0015
Naval Air Station
Jacksonville, FL 32212-0016

**RE: Duval County - Air Pollution
Air Stripper No. 3
Permit No. AC16-192940
I.D. No. 31-16-0215-60**

Dear Commander:

The Air Quality Division and the Department of Environmental Regulation (DER) have approved the revision of the captioned permit(s) as follows:

EXPIRATION DATE

FROM: July 30, 1992

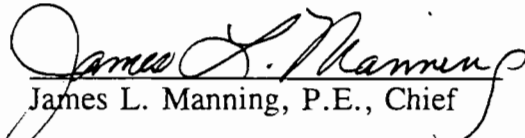
TO: December 31, 1992

This letter and Department of the Navy letter dated June 2, 1992 shall be attached to and become part of the captioned permit.


Any questions in this matter should be directed to Mr. Ronald L. Roberson of Air Quality Division (AQD) at (904) 630-3666.

City of Jacksonville
Air Quality Division

State of Florida
Department of Environmental Regulation



James L. Manning, P.E., Chief

JLM/EEF/nic


Ernest E. Frey, P.E., Director of District Management

cc: Mr. Andrew G. Kutyna, P.E., DER
AQD Air Permitting File
AQD File 1910-JJ

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 Florida
Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

 07/21/92
Clerk Date

Administration 448-4300
Air 448-4310
Waste Management 448-4320



Water Facilities 448-4330
Water Management 448-4340
FAX 448-4366

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Capt. Kevin F. Delaney
Commanding Officer
Dept. of the Navy
Naval Air Station
Jacksonville, FL 32212-5000

4a. Article Number

P 832 538 670

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input type="checkbox"/> Insured |
| <input checked="" type="checkbox"/> Certified | <input type="checkbox"/> COD |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Return Receipt for Merchandise |

7. Date of Delivery

13 AUG 91

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, October 1990

☆U.S. GPO: 1990-273-881

DOMESTIC RETURN RECEIPT

P 832 538 670



Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to	
Capt. Kevin F. Delaney	
Street & No.	
Naval Air Station	
P.O., State & ZIP Code	
Jacksonville, FL 32212-5000	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date	
Mailed: 8-9-91	
Permit: AC 16-192940	
AC 16-192941	

PS Form 3800, June 1990

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMITS

In the matter of an
Application for Permits by:

DER File No. AC 16-192940
AC 16-192941
Duval County

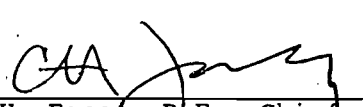
Captain Kevin F. Delaney, Commanding Officer
Department of the Navy
Naval Air Station
Jacksonville, Florida 32212-5000

Enclosed are Permit Numbers AC 16-192940 and 16-192941 to construct two air
stripper towers, issued pursuant to Section(s) 403, Florida Statutes.

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

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this
NOTICE OF PERMITS and all copies were mailed before the close of business on
8-9-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.


(Clerk)

8-9-91
(Date)

Copies furnished to:
Johnny Cole, NED
R. Roberson, BESD
W. Allen, P.E.

Final Determination

Department of the Navy
Naval Air Station
Duval County
Jacksonville, Florida

Air Stripping Projects

Permit Numbers:
AC 16-192940
AC 16-192941

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

August 6, 1991

Final Determination

The Technical Evaluation and Preliminary Determination for the permits to construct two air strippers at Department of the Navy, Naval Air Station in Jacksonville, Duval County, Florida, was distributed on June 27, 1991. The Notice of Intent to Issue was published in The Florida Times-Union on July 12, 1991. Copies of the evaluation were available for public inspection at the Department's Tallahassee and Jacksonville offices.

No comments were submitted on the Department's Intent to Issue the permits. The final action of the Department will be to issue construction permits AC 16-192940 and 16-192941 as proposed in the Technical Evaluation and Preliminary Determination.



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Department of Navy

Naval Air Station

Jacksonville, Florida 32212

Permit Number: AC 16-192941

Expiration Date: July 30, 1992

County: Duval

Latitude/Longitude: 30°13'37"N
81°40'17"W

Project: Building 2, Air Stripper/
Carbon Column

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, 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 an air stripping unit to be located at the Naval Air Station (Building 2) in Jacksonville, Duval County, Florida. The UTM coordinates are 435.3 km East and 3344.5 km North.

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

Attachments are listed below:

1. Department of Navy's application dated February 20, 1991.
2. Department's letter dated March 10, 1991.
3. Department of Navy's letter dated April 12, 1991.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

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

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

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

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

SPECIFIC CONDITIONS:

Emission Limits

1. The maximum VOC emissions from this source shall not exceed 0.7 lbs per hour, 5.6 lbs per day, and 1.0 ton per year.

2. Unless the Department has determined other concentrations are required to protect public health and safety, predicted acceptable ambient air concentrations (AAC) of the following pollutants shall not be exceeded:

Acceptable Ambient Concentrations	
mg/m ³	
Pollutant	(24-hr Average)
Methylene Chloride	0.42
Methyl Ethyl Ketone	1.40
1,1,1 - Trichloroethane	9.0
Carbon Tetrachloride	0.03
Trichloroethene	0.65
Toluene	0.9
1,3 - Dichloro Benzene	1.0
1,2 - Dichloro Benzene	2.0

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

3. Visible emissions shall not exceed 5% opacity.

Operating Rates

4. Concentration in the wastewater feeding the stripping tower shall not exceed:

Contaminant	Concentration (ug/l)
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1 - Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3 - Dichlorobenzene	680
1,2 - Dichlorobenzene	4,900

5. Maximum influent to the air stripper column shall not exceed 60 GPM. The permittee shall check the flowrate to the column (stripper) at least once during each normal business day that the system is in operation.

6. This facility is allowed to operate 2,912 hours per year.

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation for approval.

8. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this source shall be included in the operating permit.

Compliance Determination

9. Compliance with the visible emissions (VE) standard shall be determined by EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources. The aforementioned Method is contained in 40 CFR 60, Appendix A (July 1, 1989) and is adopted by reference in F.A.C. Rule 17-2.700.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

10. Compliance with the acceptable ambient concentrations shall be demonstrated based on calculations certified by a Professional Engineer registered in Florida, using actual operating conditions. Determination of the ambient concentrations for the affected pollutants (listed in Specific Condition No. 2) shall be determined by Department approved dispersion modeling.

11. Compliance with the wastewater concentrations of the chemical compounds listed in specific condition No. 4 shall be determined by EPA Method 602 as described in the EPA Manual 600/4-82-057 or other method with prior approval of the Department. The permittee shall collect a one week composite sample of the water being treated during every quarter of the year, when the air stripper is in operation, handle the sample as specified by the above mentioned EPA methods and analyze a composite sample for each compound. The frequency of sampling and analysis required for this system may be relaxed by the Department in the future.

12. Compliance tests shall be conducted within 180 days after completion of construction. The permittee shall notify the BESD office in writing at least 15 days in advance of any compliance test. Compliance test results shall be submitted to the BESD office not later than 45 days after the final run.

13. When the Department, after investigation, has good reason (such as odor complaints, emission exceedances, increased visible emissions, etc.), to believe that any applicable emission standard contained in F.A.C. Chapter 17-2, or in this permit is being violated, it may require the owner or operator of the source to conduct compliance tests which identify the nature and quantity of air pollutant emissions from the source and to provide a report on the results of said tests to the Department.

Rule Requirements

14. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

15. Issuance of this permit does not relieve the source owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (F.A.C. Rule 17-2.210(1)).

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

16. This source is subject to F.A.C. Rule 17-2.620(1) and (2), General Pollutant Emission Limiting Standards.

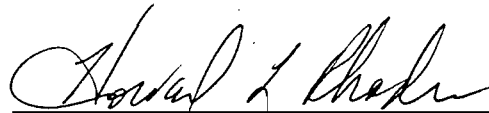
17. Pursuant to F.A.C. Rule 17-2.210(2), Air Operating Permits, the permittee is required to submit annual compliance test reports on the actual operating rates and emissions from this source. These reports shall include but not be limited to the following: maximum quarterly and annual average influent concentration (mg/l), maximum quarterly and annual average effluent concentration (mg/l), stripping factor, maximum daily and annual average influent flowrate (GPM), calculated maximum 24-hr air impact concentrations, maximum air flowrate (CFM) and annual hours of operation. Annual compliance test reports shall be sent to the BESD office.

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

19. An application for an operation permit must be submitted to the BESD office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this 8 day
of August, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


for Carol M. Browner
Secretary



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Department of Navy

Naval Air Station

Jacksonville, Florida 32212

Permit Number: AC 16-192940

Expiration Date: July 30, 1992

County: Duval

Latitude/Longitude: 30°13'37"N
81°40'12"W

Project: Building 3, Air Stripper/
Carbon Column

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, 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 an air stripping unit to be located at the Naval Air Station (Building 3) in Jacksonville, Duval County, Florida. The UTM coordinates are 435.3 km East and 3344.1 km North.

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

Attachments are listed below:

1. Department of Navy's application dated February 20, 1991.
2. Department's letter dated March 10, 1991.
3. Department of Navy's letter dated April 12, 1991.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

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

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

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

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

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

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

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

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

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

SPECIFIC CONDITIONS:

Emission Limits

1. The maximum VOC emissions from this source shall not exceed 0.4 lbs per hour, 3.2 lbs per day, and 0.6 tons per year.

2. Unless the Department has determined other concentrations are required to protect public health and safety, predicted acceptable ambient air concentrations (AAC) of the following pollutants shall not be exceeded:

Acceptable Ambient Concentrations	
mg/m ³	
Pollutant	(24-hr Average)
Methylene Chloride	0.42
1,1,1 - Trichloroethane	9.0
Trichloroethylene	0.65
Toluene	0.9
1,1 - Dichloroethylene	0.1
1,2 - Dichloroethane	0.01

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

3. Visible emissions shall not exceed 5% opacity.

Operating Rates

4. Concentration in the wastewater feeding the stripping tower shall not exceed:

Contaminant	Concentration (ug/l)
Methylene Chloride	85,000
1,1,1 - Trichloroethane	68,000
Trichloroethylene	830
Toluene	5,500
1,1 - Dichloroethylene	2,500
1,2 - Dichloroethane	1,800

5. Maximum influent to the air stripper column shall not exceed 50 GPM. The permittee shall check the flowrate to the column (stripper) at least once during each normal business day that the system is in operation.

6. This facility is allowed to operate 2,912 hours per year.

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation for approval.

8. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this source shall be included in the operating permit.

Compliance Determination

9. Compliance with the visible emissions (VE) standard shall be determined by EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources. The aforementioned Method is contained in 40 CFR 60, Appendix A (July 1, 1989) and is adopted by reference in F.A.C. Rule 17-2.700.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

10. Compliance with the acceptable ambient concentrations shall be demonstrated based on calculations certified by a Professional Engineer registered in Florida, using actual operating conditions. Determination of the ambient concentrations for the affected pollutants (listed in Specific Condition No.2) shall be determined by Department approved dispersion modeling.

11. Compliance with the wastewater concentrations of the chemical compounds listed in specific condition No. 4 shall be determined by EPA Method 602 as described in the EPA Manual 600/4-82-057 or other method with prior approval of the Department. The permittee shall collect a one week composite sample of the water being treated during every quarter of the year, when the air stripper is in operation, handle the sample as specified by the above mentioned EPA methods and analyze a composite sample for each compound. The frequency of sampling and analysis required for this system may be relaxed by the Department in the future.

12. Compliance tests shall be conducted within 180 days after completion of construction. The permittee shall notify the BESD office in writing at least 15 days in advance of any compliance test. Compliance test results shall be submitted to the BESD office not later than 45 days after the final run.

13. When the Department, after investigation, has good reason (such as odor complaints, emission exceedances, increased visible emissions, etc.), to believe that any applicable emission standard contained in F.A.C. Chapter 17-2, or in this permit is being violated, it may require the owner or operator of the source to conduct compliance tests which identify the nature and quantity of air pollutant emissions from the source and to provide a report on the results of said tests to the Department.

Rule Requirements

14. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

15. Issuance of this permit does not relieve the source owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (F.A.C. Rule 17-2.210(1)).

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

16. This source is subject to F.A.C. Rule 17-2.620(1) and (2), General Pollutant Emission Limiting Standards.

17. Pursuant to F.A.C. Rule 17-2.210(2), Air Operating Permits, the permittee is required to submit annual compliance test reports on the actual operating rates and emissions from this source. These reports shall include but not be limited to the following: maximum quarterly and annual average influent concentration (mg/l), maximum quarterly and annual average effluent concentration (mg/l), stripping factor, maximum daily and annual average influent flowrate (GPM), calculated maximum 24-hr air impact concentrations, maximum air flowrate (CFM) and annual hours of operation. Annual compliance test reports shall be sent to the BESD office.

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

19. An application for an operation permit must be submitted to the BESD office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.005 and 17-4.220).

Issued this 8 day
of August, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Carol M. Browner
Secretary



State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

Interoffice Memorandum

TO: Carol M. Browner

FROM: Steve Smallwood 

DATE: August 6, 1991

SUBJ: Approval of Construction Permits AC 16-192940 & 192941
Department of the Navy, Naval Air Station

Attached for your approval and signature are permits prepared by the Bureau of Air Regulation for the above mentioned company to construct two air strippers.

No comments were received during the public notice period.

I recommend your approval and signature.

CF/TH/plm

Attachments

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
REGULATION
NOTICE OF INTENT
TO ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a permit to Department of the Navy, Naval Air Station, Jacksonville, Florida 32212-5000 for the construction of two air strippers. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes. The Petition shall contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by contends warrant reversal or modification of the Department's action or proposed action; (e) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action. If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C. The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Department of Environmental Regulation
Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7577

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

STATE OF SOUTH CAROLINA
IN THE COURT OF COMMON PLEAS
COUNTY OF RICHLAND

FIFTH JUDICIAL CIRCUIT
University of South Carolina C/A No. 91-CP-40-2523
System Federal Credit Union,
Plaintiff,

vs. SUMMONS
James B. Holderman,

Defendant.

TO THE DEFENDANT ABOVE-NAMED:
YOU ARE HEREBY SUMMONED and required to answer the Complaint in this action, a copy of your Answer to the said pleading upon the subscribers at their offices, Post Office Box 1799, 1201 Main Street, Suite 1800, Columbia, South Carolina 29202, within thirty (30) days after service hereof, exclusive of

\$41,900/mo. Appt: 284-5238
AVONDALE - 1543 Azalea Terr. Charming 2 story brick w/balcony over looking creek and park. 1500sq ft. 3/2 BR, 1BA, HW floors, fireplace, central H/A. Fully updated and renovated \$89,900. 388-7562

AVONDALE - 2/2 1/2, sitting rm, liv rm w/fpl, remodeled kit, CH&A, hardwood flrs, w/d, wood deck, wood fenced yd, income, quiet st. \$77k 3113 Herschel 389-5267

BY OWNER - Ortega Forest Dr. Waterfront. Traditional style waterfront hm, 2 story red brick, 3BR/2 1/2 BA, 2465 sq w/pool on 1.23 acres (397' deep, 155' road frontage, 115' waterfront). Remodeling allowance, \$347.5K. For appt. Call 389-3093 (leave msg) or 284-9701

FAIRFAX MANOR - 4144 Marquette Ave. brick 1700s.f. with fpl. & much more. \$69,000. Call 269-7575

FOR A FREE COPY of Your Home Picture Guide to area real estate, write to: YOUR HOME, P.O. Box 1949, Jax, FL 32231

ONE OF A KIND - 4/4 Cape Cod, 1 1/2 story, 3000 SF of cypress, heart pine & oak constr. p' ceil., pool & garden, by 2nd owner on Avondale's most prestigious St. High \$300s. 3649 Richmond St. Call 384-3788 appt. only

ORTEGA - NEW LISTING. Open House Sat & Sun 12-4. 4415 Pirates Cove Rd. Brick, 3BR, 2BA, gar, hardwood flrs, sec & sprinkler sys. \$154K. 388-2465 appt

ORTEGA - 4553 Water Oak La., 3BR, 1 1/2 BA, liv, din, den, equipped kit, CH/A, hardwood floors, W/D hookup, fenced yard. \$68,500. By owner. 389-3478.

ORTEGA - 4248 ORTEGA PLACE 3BR, 2BA, formal LR & dR, eat-in-kit w/lot sof storage, 2 fpl's, lrg den, extra room for 4th BR, office or playroom, lrg corner lot. \$162,000 Call 384-4312

REDUCED - For immed. sale. 2 story, 2088 SF, 3/2, great nighbrhd, HW flrs, LR w/FP, DR, tile kit., counter & flrs, 1x2 fpl, lrg, lndry rm, cvd, patio, detech. workshop, playhouse, fen. yd, exc cnd \$85,900 387-0228

5012 ORTEGA BLVD - 3BR, 2 1/2 BA, 2110 sq ft. \$125,000. By Owner. 387-6905



ABSOLUTE BETTER BUYS
Repo homes. Call Paul E. Panek, Realtor 721-5370

ADIROLF ST 3740 - Spring Pk 2/1 & spare rm, reduced to \$26,500 OBO 725-8555

ASSUMABLE - 9.5 VA, 2BR, 2BA, patio home, fully carpeted, vaulted ceiling, ceiling fans, eat-in kit., CH&A. \$6,500 equity, \$2500 down, assume payments \$519/mo. Owner will hold 2nd mtg. \$57,500. Call 723-3277

ASSUMABLE 8 1/2%
Immaculate 3br/2ba with 2 car gar, fplc, fenced yd, large cedar deck with gazebo, new carpet and ceramic tile. Assume 8 1/2% VA note, asking \$73,900. Open House Sunday, 7/7/91 & 7/14/91, Noon-4pm. Owner motivated 778 Rides Rd W. 724-0071

AVAIL. NOW - 3/2 w/den, CH&A, 2819 Parr Ct E \$3000 dn \$525mo \$49,900. 744-4482.

A BEST BUY - New 3BR, 2BA, carpet, brick fplc, double gar, all appliances except refrig, eat-in kit, \$79,800 Corner of Parental Hrdw & Ebersol Rd. Call 733-0656 or 733-2879

BEAUTIFUL - 4/2, 780 HOLLIDAY HILL CT. POOL-JACUZZI. OPEN HOUSE SAT SUN 12-5. \$99K 646-0095

BRIERWOOD - assume 9% VA/\$20K equity, 3/2 brick, 1600SF. \$92,000 731-4796

BRIERWOOD - 4BR, 2BA, 5031 Winchester Dr. \$91,500 Call 733-9379

BRIERWOOD AREA - 4br, 2ba, CH&A, brick, fenced, new paint & carpet. \$79,900. 1/824-8263 or 359-3169.

- Reduced 3/2 brick veneer, hardwood flrs, move-in cond, close to river \$117,900 Call 727-0049 for appt.

★ ★ ★
**OPEN HOUSE
WITH OUTSTANDING
POOL INCLUDING
WATER FALLS
PONDS & JACUZZI**

5BR, 4 bath, 3400 sq ft, fireplace, dbl garage. This lovely Spanish style home in prestigious Point La Vista, San Jose (5 min from Downtown & near excellent schools) is FOR SALE BY OWNER at \$265,000. The house is extremely well built w/lots of extras & great closets & storage. The large corner lot is nicely landscaped & the estimated 48,000 gal pool w/10 person adjoining jacuzzi is formed by 60 tons of boulders creating the 6 ft high, 3 pond waterfall system & diving cliffs. This is a MUST SEE! Open House SAT 9-5 & SUN 1-5 at 830 Point La Vista Rd N, or for appt ph 398-7185, or lve a msg anytime, 396-6368. Will cooperate w/selling brkrs

★ ★ ★

OPEN HOUSE - Fri, Sat & Sun 3BR, 2BA, 4227 Havana Ave. Realtor 733-8780.

OPEN HOUSE - 3BR 1 1/2 BA home in est. neighborhood, CH/A, hardwood flrs, \$60K. 7315 Hernando Rd. 737-5040

REDUCED \$8000 - Gorgeous 3/4 acre, 5420 Community Cir 4/2. \$74,500 obo 733-6749

San Jose/Beauclerc
4BR, 4BA, 3300 SF, only \$175,000. Totally remodeled, non qualifying assumable loan at 9 1/2%, only \$1391/mo. 356-2228 ofc. 733-5064 hm. Owner/Broker will co-op.

SAN JOSE/ BOLLES - 3/2, LR, DR, den w/ brick fpl, 1850s.f. all brick hddfr, car gar, cor lot \$96K, 448-9479 appt. only

SAN JOSE - 1850sq.ft. 3/2, liv rm, din rm, laundry, 2 car, well, scr porch, pool, huge lot \$99,000. 731-0037

SAN MARCO - 1130 Holly Ln. Immaculate 3BR, 2 1/2 BA brick. 2320s.f., hardwood floors, separate DR, eat-in kit. \$169,900. Will cooperate with selling brokers. 396-6802 or 730-6582

SAN MARCO - 1720 Inwood Terr. 2BR/1BA, new CH/A, fen yd, \$49,900. 246-1547

SOUTHSIDE - by owner 3BR 1BA nr schools & shopping \$46,500. 725-3427 aft 6.

SOUTHSIDE ESTATES - 4BR, 2BA with gar. apt \$72,500 By appt 641-5696.

ST NICHOLAS - 2/1 CH&A FL rm, ceiling fans, appls included. Move in cond crnr lot \$60K 396-0146

WATERFRONT - Beautiful secure San Jose, 1600sf TH boat slip, pool, \$91,000. No closing cost. 737-7416.

14X70 FLEETWOOD 1988 - 3/2, \$1500 Down, No Qualifying 781-6320

A AUTOMATIC APPROVAL - \$1500 Down, 3/2 Double Wide, 781-6320



ABANDON THE AVERAGE

- Open House 1-5PM Sun. See this contemporary 3/ w/pool. It has a unique floor plan & almost 2500 sq ft w/fpl. Balcony off Master BR, generous storage in attic & gar. Superior constri & insulation will save you money. Will not last a \$144,900. Owner 262-8521

ABSOLUTELY MUST GO - 4/2 custom built on cul-de sac. \$134,900. 262-4972

ABSOLUTE BETTER BUY:
Repo homes. Call Paul E Panek, Realtor 721-5370



DEPARTMENT OF THE NAVY

NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212-5000

IN REPLY REFER TO:

6280

Code 184

19 JUL 1991

RECEIVED

JUL 22 1991

Bureau of
Air Regulation

Mr. Barry Andrews
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: U.S. NAVAL AIR STATION, JACKSONVILLE, FL, TWO AIR STRIPPER TOWERS
PERMIT NOS AC 16-192940 AND AC 16-192941

Dear Mr. Andrews:

In accordance with FAC 17-103.150, a legal notice was published in the Florida Times-Union, July 12, 1991. Enclosed is a tearsheet which includes the notice.

If there are any questions, please contact ENS Pat Garin at (904) 772-2717.

Sincerely,

JOSEPH G. WALLMEYER
Director, Environmental Division
By direction of the Commanding Officer

cc: J. T. Deron
G. Kutera, WE Dist
R. Roberson, BESD
CHF

COMMANDING OFFICER
P.O. BOX 5, NAVAL AIR STATION
JACKSONVILLE, FL 32212

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

RECEIVED

JUL 22 1991

Division of Air
Resources Management



PENALTY
FOR
PRIVATE
USE \$300
P.B. METER
2310671



POSTAGE AND FEES PAID

Mr. Barry Andrews
Fl Dept. of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Capt. Kevin F. Delaney
Commanding Officer
Dept. of the Navy
Naval Air Station
Jacksonville, FL 32212-5000

4a. Article Number

P 832 539 853

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐
☐ Express Mail ☐
Insurance, etc.

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

Cyma J. Sample

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, October 1990

☆ U.S. GPO: 1990-273-861

DOMESTIC RETURN RECEIPT

P 832 539 853

**Certified Mail Receipt**

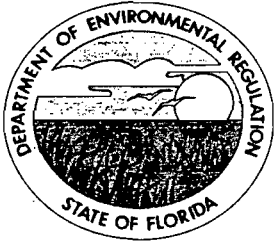
No Insurance Coverage Provided

Do not use for International Mail

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Sent to	
Capt. Kevin F. Delaney	
Street & No.	
Naval Air Station	
P.O., State & ZIP Code	
Jacksonville, FL 32212-5000	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
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Permit: AC16-192940	
AC16-192941	

PS Form 3800, June 1990



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

June 27, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Captain Kevin F. Delaney, Commanding Officer
Department of the Navy
Naval Air Station
Jacksonville, Florida 32212-5000

Dear Captain Delaney:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permits to construct two air stripper towers.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief

Bureau of Air Regulation

CHF/TH/plm

Attachments

c: Johnny Cole, NED
R. Roberson, BESD
W. Allen, P.E.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of
Application for Permits by:

Department of the Navy
Naval Air Station
Jacksonville, Florida 32212-5000

DER File No. AC 16-192940
AC 16-192941
Duval County

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue air construction permits (copies attached) for the proposed projects as detailed in the applications specified above, for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Department of the Navy, applied on February 21, 1991, to the Department of Environmental Regulation for permits to construct two air strippers. The strippers are located at the Naval Air Station in Jacksonville, Florida.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes and Florida Administrative Code Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, Florida Statutes and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

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

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

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

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

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

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

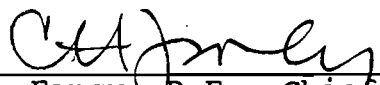
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under

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

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE and all copies were mailed by certified mail before the close of business on 6-27-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.


Clerk

6-27-91
Date

Copies furnished to:

Capt. Kevin F. Delaney

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

The Department of Environmental Regulation hereby gives notice of its intent to issue permits to Department of the Navy, Naval Air Station, Jacksonville, Florida 32212-5000 for the construction of two air strippers. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's

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

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

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

Department of Environmental Regulation
Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7577

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

Technical Evaluation
and
Preliminary Determination

Department of the Navy
Naval Air Station
Duval County
Jacksonville, Florida

Air Stripping Projects

Permit Numbers:
AC 16-192940
AC 16-192941

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

June 27, 1991

SYNOPSIS OF APPLICATION

I. NAME AND ADDRESS OF APPLICANT

Department of the Navy
Naval Air Station
Jacksonville, Florida 32212-5000

II. REVIEWING AND PROCESS SCHEDULE

Date of Receipt of Application: February 21, 1991.

Completeness Review: Department letter dated March 10, 1991.

Response to Incompleteness Letter: Department of Navy's letter received on April 12, 1991.

Application Completeness Date: April 12, 1991.

III. FACILITY INFORMATION

III.1 Facility Location

This facility is located at Building No. 3, Naval Air Station, Jacksonville, Florida. The UTM coordinates are 435.3 km East and 3344.1 km West.

III.2 Facility Identification Code

Standard Industrial Classification Code (SIC):

Major Group No. 97 - National Security.

Industry Group No. 971 - National Security.

Industry Group No. 9711 - National Security.

III.3 Facility Category

The Naval Air Station in Jacksonville is classified as a major emitting facility. Permitted emissions are in the order of 186 tons VOC per year.

The proposed project will emit approximately a total of 1.5 tons per year of volatile organic compounds (VOC) from both sources (AC 16-192940 and AC 16-192941). The impact of these pollutant emissions are under the acceptable ambient concentration levels (AAC) recommended by the Department.

IV. PROJECT DESCRIPTION

This project involves the construction of two air stripper towers that will be employed to remove VOC from wastewater.

Wastewater from paint stripping operation and from parts cleaning and plating operation is treated to oxidize cyanide, remove oil and transfer volatile organic from water phase to the vapor phase. The vapor phase is passed through activated carbon to adsorb the organics.

IV.1 BACKGROUND INFORMATION

In the year 1990, several existing minor sources were permitted at this facility. Most of these sources were constructed in the 1950's. VOC from these sources are tabulated below:

Permit No.	Bldg. No.	Description	VOC Emissions (TPY)	Year Constructed
AC 16-185504	101S & 780	Aircraft Paint Stripping Facility	82.1	
AC 16-56672		Chrome Plating System	5.0	1982
AC 16-185505	101	Cleaning & Degreasing	77.1	
AC 16-185506	979	Paint Booth	1.8	1990
AC 16-185508	106	Dry Cleaning & Laundry Facility	13.5	
AC 16-185509	103	Paint Spray Booth	0.16	
AC 16-185510	101V	Paint Booth	.9	
AC 16-185511	105	Paint Booth - Vehicles	2.5	
AC 16-176107	622	Paint Spray Booth	0.45	1990
AC 16-176108	200	Paint Spray Booth & Abrasive Blast Area	1.0	1990
AC 16-192940	3	Air Stripper Tower	0.6	1992 (proposed)
AC 16-192941	2	Air Stripper Tower	0.9	1992 (proposed)
TOTAL			186.01	

As shown above, this facility is a major emitting facility for volatile organic compounds.

V. RULE APPLICABILITY

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

The Department of Navy, Naval Air Station, is located in Jacksonville, Duval County, an area designated nonattainment for ozone and attainment for the other criteria pollutants in accordance with F.A.C. Rule 17-2.410 and 17-2.420, respectively.

The proposed project is exempt from review under F.A.C. Rule 17-2.510, New Source Review for Nonattainment Areas, because it will be a minor modification to a major facility. This project will not cause a significant VOC increase in the facility's total permitted VOC emissions. Any emission increases and/or decreases within 5 years of this modification will be counted as part of the contemporaneous emission changes for this facility, F.A.C. Rule 17-2.510(2)(e)1., Net Emission Increases.

These sources shall be permitted under F.A.C. Rule 17-2.520, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements. The proposed sources shall comply with F.A.C. Rule 17-2.620(1) and 17-2.620(2).

VI. SOURCE IMPACT ANALYSIS

VI.1 Emission Limitations

The operation of the air stripping towers will produce emissions of VOC and non-criteria pollutants. The impact of the toxic pollutant emissions are below the acceptable ambient concentration levels (AAC). These AAC are calculated according to the Department procedures. Tables 1 and 2 (attached) list each contaminant and its maximum expected ambient concentration (MEAC).

VI.2 Air Quality Analysis

Maximum expected ambient concentrations (MEAC) were calculated for each toxic pollutant expected to be emitted by the air stripping operation. These MEAC are a conservative estimate of the maximum ambient concentrations resulting from air stripping operations. The equation used to calculate each MEAC was derived by assuming that the plume rise from air strippers is negligible, which is a valid assumption for these operations since stack velocities are low and the stack temperature is essentially the same as the ambient temperature. The use of these MEAC is in accordance with the Department's air stripper review procedures. The MEAC for each toxic pollutant was compared to the Department-derived acceptable ambient concentration levels (AAC) for that particular pollutant. Since the calculated MEAC for this project are below the acceptable AAC for the proposed toxic pollutants, the Department has reasonable assurance that this project will not threaten public health and that further detailed modeling of this operation is not necessary.

TABLE 1
Building No. 2

Contaminant	Max Conc. (ppb)	Max. Emission Rate (lb/hr)	Max. Ambient Impact (mg/m ³)	TLV ₃ (mg/m ³)	Category (A or B)	AAC* (mg/m ³)
Methylene Chloride	170,000	0.51	0.033	175	A	0.42
Methyl Ethyl Ketone	46,000	0.138	0.009	590	A	1.4
1,1,1 - Trichloroethane	24,000	0.071	0.005	1,900	B	9.0
Carbon Tetrachloride	24,000	0.071	0.005	30	A	0.03
Trichloroethene	730	0.002	1.3 x 10 ⁻⁴	270	A	0.65
Toluene	860	0.003	2 x 10 ⁻⁴	375	A	0.9
1,3 - Dichlorobenzene	680	0.002	1.3 x 10 ⁻⁴			1.0
1,2 - Dichlorobenzene	4,900	0.014	9.2 x 10 ⁻⁴	C 300	A	2.0

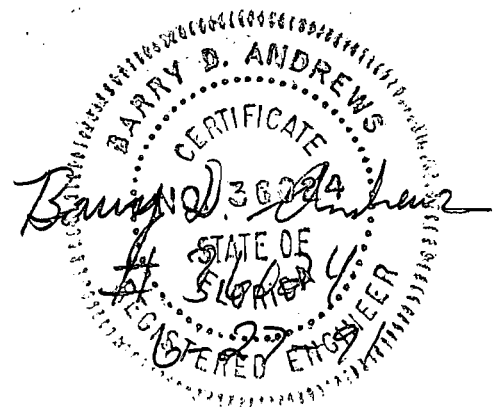
TABLE 2
Building No. 3

Contaminant	Max Conc. (ppb)	Max. Emission Rate (lb/hr)	Max. Ambient Impact (mg/m ³)	TLV ₃ (mg/m ³)	Category (A or B)	AAC* (mg/m ³)
Methylene Chloride	85,000	0.213	0.014	175	A	0.42
1,1,1 - Trichloroethane	68,000	0.167	0.011	1,900	B	9.0
Trichloroethylene	830	0.002	1.3 x 10 ⁻⁴	270	A	0.65
Toluene	5,500	0.014	9.2 x 10 ⁻⁴	375	A	0.9
1,1 - Dichloroethylene	2,500	0.006	3.9 x 10 ⁻⁴			0.1
1,2 - Dichloroethane	1,800	0.004	2.6 x 10 ⁻⁴	40	A	0.01

*AAC are based on a 24-hr average concentration.

VII. CONCLUSION

Based on the information provided by the Department of Navy, Naval Air Station, the Department (DER) has reasonable assurance that the proposed installation of the proposed sources, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.





Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Department of Navy

Naval Air Station

Jacksonville, Florida 32212

Permit Number: AC 16-192941

Expiration Date: July 30, 1992

County: Duval

Latitude/Longitude: 30°13'37"N
81°40'17"W

Project: Building 2, Air Stripper/
Carbon Column

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, 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 an air stripping unit to be located at the Naval Air Station (Building 2) in Jacksonville, Duval County, Florida. The UTM coordinates are 435.3 km East and 3344.5 km North.

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

Attachments are listed below:

1. Department of Navy's application dated February 20, 1991.
2. Department's letter dated March 10, 1991.
3. Department of Navy's letter dated April 12, 1991.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

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

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

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

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

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

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

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

SPECIFIC CONDITIONS:

Emission Limits

1. The maximum allowable VOC emissions from this source shall not exceed 0.7 lbs per hour, 5.6 lbs per day, and 1.0 ton per year.

2. Unless the Department has determined other concentrations are required to protect public health and safety, predicted acceptable ambient air concentrations (AAC) of the following pollutants shall not be exceeded:

Acceptable Ambient Concentrations	
mg/m ³	
Pollutant	(24-hr Average)
Methylene Chloride	0.42
Methyl Ethyl Ketone	1.40
1,1,1 - Trichloroethane	9.0
Carbon Tetrachloride	0.03
Trichloroethene	0.65
Toluene	0.9
1,3 - Dichloro Benzene	1.0
1,2 - Dichloro Benzene	2.0

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

3. Visible emissions shall not exceed 5% opacity.

Operating Rates

4. Concentration in the wastewater feeding the stripping tower shall not exceed:

Contaminant	Concentration (ug/l)
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1 - Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3 - Dichlorobenzene	680
1,2 - Dichlorobenzene	4,900

5. Maximum influent to the air stripper column shall not exceed 60 GPM. The permittee shall check the flowrate to the column (stripper) at least once during each normal business day that the system is in operation.

6. This facility is allowed to operate 2,912 hours per year.

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation and Bio-Environmental Services Division for approval.

8. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this source shall be included in the operating permit.

Compliance Determination

9. Compliance with the visible emissions (VE) standard shall be determined by EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources. The aforementioned Method is contained in 40 CFR 60, Appendix A (July 1, 1989) and is adopted by reference in F.A.C. Rule 17-2.700.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

10. Compliance with the acceptable ambient concentrations shall be demonstrated based on calculations certified by a Professional Engineer registered in Florida, using actual operating conditions. Determination of the ambient concentrations for organic compounds shall be determined by Department approved dispersion modeling.

11. Compliance with the wastewater concentrations of the chemical compounds listed in specific condition No. 4 shall be determined by EPA Method 602 as described in the EPA Manual 600/4-82-057 or other method with prior approval of the Department. The permittee shall collect a one week composite sample of the water being treated during every quarter of the year, when the air stripper is in operation, handle the sample as specified by the above mentioned EPA methods and analyze a composite sample for each compound. The frequency of sampling and analysis required for this system may be relaxed by the Department in the future.

12. Compliance test reports shall be conducted within 180 days after completion of construction. The permittee shall notify the BESD office in writing at least 15 days in advance of any compliance test. Compliance test results shall be submitted to the BESD office not later than 45 days after the final run.

13. When the Department, after investigation, has good reason (such as odor complaints, emission exceedances, increased visible emissions, etc.), to believe that any applicable emission standard contained in F.A.C. Chapter 17-2, or in this permit is being violated, it may require the owner or operator of the source to conduct compliance tests which identify the nature and quantity of air pollutant emissions from the source and to provide a report on the results of said tests to the Department.

Rule Requirements

14. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

15. Issuance of this permit does not relieve the source owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (F.A.C. Rule 17-2.210(1)).

PERMITTEE:
Department of Navy

Permit Number: AC 16-192941
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

16. This source is subject to F.A.C. Rule 17-2.620(1) and (2), General Pollutant Emission Limiting Standards.

17. Pursuant to F.A.C. Rule 17-2.210(2), Air Operating Permits, the permittee is required to submit annual compliance test reports on the actual operating rates and emissions from this source. These reports shall include but not be limited to the following: maximum quarterly and annual average influent concentration (mg/l), maximum quarterly and annual average effluent concentration (mg/l), stripping factor, maximum daily and annual average influent flowrate (GPM), calculated maximum 24-hr air impact concentrations, maximum air flowrate (CFM) and annual hours of operation, etc. Annual compliance test reports shall be sent to the BESD office.

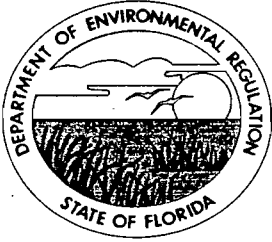
18. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

19. An application for an operation permit must be submitted to the BESD office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Department of Navy

Naval Air Station

Jacksonville, Florida 32212

Permit Number: AC 16-192940

Expiration Date: July 30, 1992

County: Duval

Latitude/Longitude: 30°13'37"N
81°40'12"W

Project: Building 3, Air Stripper/
Carbon Column

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, 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 an air stripping unit to be located at the Naval Air Station (Building 3) in Jacksonville, Duval County, Florida. The UTM coordinates are 435.3 km East and 3344.1 km North.

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

Attachments are listed below:

1. Department of Navy's application dated February 20, 1991.
2. Department's letter dated March 10, 1991.
3. Department of Navy's letter dated April 12, 1991.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

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

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

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

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

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

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

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

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

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

13. The permittee shall comply with the following:

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

GENERAL CONDITIONS:

records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

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

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

SPECIFIC CONDITIONS:

Emission Limits

1. The maximum allowable VOC emissions from this source shall not exceed 0.4 lbs per hour, 3.2 lbs per day, and 0.6 tons per year.

2. Unless the Department has determined other concentrations are required to protect public health and safety, predicted acceptable ambient air concentrations (AAC) of the following pollutants shall not be exceeded:

Pollutant	Acceptable Ambient Concentrations
	mg/m ³ (24-hr Average)
Methylene Chloride	0.42
1,1,1 - Trichloroethane	9.0
Trichloroethylene	0.65
Toluene	0.9
1,1 - Dichloroethylene	0.1
1,2 - Dichloroethane	0.01

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

3. Visible emissions shall not exceed 5% opacity.

Operating Rates

4. Concentration in the wastewater feeding the stripping tower shall not exceed:

Contaminant	Concentration (ug/l)
Methylene Chloride	85,000
1,1,1 - Trichloroethane	68,000
Trichloroethylene	830
Toluene	5,500
1,1 - Dichloroethylene	2,500
1,2 - Dichloroethane	1,800

5. Maximum influent to the air stripper column shall not exceed 50 GPM. The permittee shall check the flowrate to the column (stripper) at least once during each normal business day that the system is in operation.

6. This facility is allowed to operate 2,912 hours per year.

7. Any change in the method of operation, equipment or operating hours shall be submitted to the DER's Bureau of Air Regulation and Bio-Environmental Services Division for approval.

8. Any other operating parameters established during compliance testing and/or inspection that will ensure the proper operation of this source shall be included in the operating permit.

Compliance Determination

9. Compliance with the visible emissions (VE) standard shall be determined by EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources. The aforementioned Method is contained in 40 CFR 60, Appendix A (July 1, 1989) and is adopted by reference in F.A.C. Rule 17-2.700.

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

10. Compliance with the acceptable ambient concentrations shall be demonstrated based on calculations certified by a Professional Engineer registered in Florida, using actual operating conditions. Determination of the ambient concentrations for organic compounds shall be determined by Department approved dispersion modeling.

11. Compliance with the wastewater concentrations of the chemical compounds listed in specific condition No. 4 shall be determined by EPA Method 602 as described in the EPA Manual 600/4-82-057 or other method with prior approval of the Department. The permittee shall collect a one week composite sample of the water being treated during every quarter of the year, when the air stripper is in operation, handle the sample as specified by the above mentioned EPA methods and analyze a composite sample for each compound. The frequency of sampling and analysis required for this system may be relaxed by the Department in the future.

12. Compliance test reports shall be conducted within 180 days after completion of construction. The permittee shall notify the BESD office in writing at least 15 days in advance of any compliance test. Compliance test results shall be submitted to the BESD office not later than 45 days after the final run.

13. When the Department, after investigation, has good reason (such as odor complaints, emission exceedances, increased visible emissions, etc.), to believe that any applicable emission standard contained in F.A.C. Chapter 17-2, or in this permit is being violated, it may require the owner or operator of the source to conduct compliance tests which identify the nature and quantity of air pollutant emissions from the source and to provide a report on the results of said tests to the Department.

Rule Requirements

14. This source shall comply with all applicable provisions of Chapter 403, Florida Statutes and Chapters 17-2 and 17-4, Florida Administrative Code.

15. Issuance of this permit does not relieve the source owner or operator from compliance with any applicable federal, state, or local permitting requirements and regulations (F.A.C. Rule 17-2.210(1)).

PERMITTEE:
Department of Navy

Permit Number: AC 16-192940
Expiration Date: July 30, 1992

SPECIFIC CONDITIONS:

16. This source is subject to F.A.C Rule 17-2.620(1) and (2), General Pollutant Emission Limiting Standards.

17. Pursuant to F.A.C. Rule 17-2.210(2), Air Operating Permits, the permittee is required to submit annual compliance test reports on the actual operating rates and emissions from this source. These reports shall include but not be limited to the following: maximum quarterly and annual average influent concentration (mg/l), maximum quarterly and annual average effluent concentration (mg/l), stripping factor, maximum daily and annual average influent flowrate (GPM), calculated maximum 24-hr air impact concentrations, maximum air flowrate (CFM) and annual hours of operation, etc. Annual compliance test reports shall be sent to the BESD office.

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

19. An application for an operation permit must be submitted to the BESD office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.005 and 17-4.220).

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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

EMPLOYEE - OWNED
Burns & McDonnell
ENGINEERS - ARCHITECTS - CONSULTANTS

April 11, 1991

RECEIVED

APR 12 1991

DER-BAQM

Mr. C.H. Fancy, P.E.
Chief, Bureau of Air Regulations
Florida Dept of Environmental Regulation
Twin Towers Office Bldg
2600 Blair Stone Road
Tallahassee, FL 34399-2400

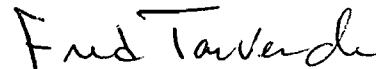
Air Stripper Construction Permit Applications
AC 16-192940 and AC 16-192941
U.S. Naval Air Station, Jacksonville, Florida

Dear Mr. Fancy:

Enclosed are the completed Air Stripping Evaluation worksheets for the two air stripping and carbon adsorption systems at the U.S. Naval Air Station in Jacksonville. The equations on the second page of the worksheet were utilized to calculate the required values. As per a telephone conversation with Ms. Teresa Heron on April 9, 1991, the maximum emission rate calculated on the worksheets is the maximum emission rate from the carbon adsorption unit which is assumed to have a minimum efficiency of 90 percent. The Acceptable Ambient Impact (ACC) was calculated based on 80 hours of operation of the systems rather than the presumed 168 hours per week of operation in the third equation on the second page of the worksheet.

The Maximum Ambient Impact concentrations were well below the Acceptable Ambient Concentrations for the contaminants for both air stripping and carbon adsorption systems. No TLV has been established for 1,3-Dichlorobenzene or for 1,1-Dichloroethylene. If TLV's are established for these two components, we will calculate the corresponding AAC values. If you require additional information for the air stripper permit applications, please contact us.

Sincerely,



Fred Tarverdi, P.E.
Project Engineer

FT/blw
Enclosure

cc: Mr. Ron Blackmore w/Enclosures
Naval Facilities Engr. Command
Charleston, SC

J. Heron
A. Kuttner, NE Dist
R. Robinson, BESD

Mailing Address:
P.O. Box 419173
Kansas City, Missouri 64141-6173

Telephone:
(816) 333-4375
Fax: (816) 333-3690 or (816) 822-3415

Courier Delivery Address:
4800 E. 63rd St.
Kansas City, Missouri 64130-4696

AIR STRIPPING EVALUATION WORKSHEET

Source Identification	Bldg. 2	Maximum Influent Flow Rate (GPM)	60
Source Location	Naval Air Station Jacksonville, Florida	Maximum Air Flow Rate (CFM)	800
Manufacturer	Calgon, Westates or Equal	Emission Point Height (Ft)	43
Model Number	Vapor Pac 10 or Equal	Maximum Hours of Operation (Hrs/Wk)	80
	Equipment has not been purchased.		

Contaminant Name	Max. Conc. (ppb)	Max. Emission* Rate (lb/hr) (1)	Max. Ambient Impact (mg/m ³) (2)	TLV (mg/m ³)	Category (A or B)	AAC (mg/m ³)
1. Methylene chloride	170,000	0.51	0.033	105	B	1.05
2. Methyl ethyl ketone	46,000	0.138	0.009	590	A	2.95
3. 1,1,1-Trichloroethane	24,000	0.071	0.005	1,900	B	49.0
4. Carbon tetrachloride	24,000	0.071	0.005	30	A	0.15
5. Trichloroethene	730	0.002	1.3×10^{-4}	270	A	1.35
6. Toluene	860	0.003	2×10^{-4}	375	B	3.75
7. 1,3-Dichloro benzene	680	0.002	1.3×10^{-4}			
8. 1,2-Dichloro benzene	4,900	0.014	9.2×10^{-4}	C 300	A	1.5
9.						
10.						
11.						
12.						

(1) Calculated on reverse side of this worksheet (Equation (1)).

(2) Calculated on reverse side of this worksheet (Equation (2)).

* A 90% reduction is assumed in the carbon adsorption unit.

Methylene chloride

Calculation of Emission Rate

$$170,000 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{60} \text{ Influent flow Rate} = \underline{0.51} \text{ lb/hr (GPM)}$$

$$\text{or } \frac{170,000}{\text{ppb}} \times \underline{60} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.51} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.51} \text{ lb/hr} \right) \times (327.84) \times \left[\frac{43}{\text{Stack Height (Feet)}} \right]^{-2.264} = \underline{0.033} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 1.05$$

based on 80 hours of operation per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

Methyl ethyl ketone

Calculation of Emission Rate

$$46,000 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{60} \text{ Influent flow Rate} = \underline{0.138} \text{ lb/hr}$$

(GPM)

$$\text{or } \underline{46,000} \text{ ppb} \times \underline{60} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.138} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$(\underline{0.138} \text{ lb/hr}) \times (327.84) \times [\underline{43}]^{-2.264} \underline{0.009} \text{ mg/m}^3 \text{ (2)}$$

Stack
Height
(Feet)

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \underline{\hspace{2cm}} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = \underline{2.95}$$

based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

1,1,1-Trichloroethane

Calculation of Emission Rate

$$24,000 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{60} \text{ Influent flow Rate} = \underline{0.071} \text{ lb/hr (GPM)}$$

$$\text{or } \underline{24,000} \text{ ppb} \times \underline{60} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.071} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.071} \text{ lb/hr} \right) \times (327.84) \times \left[\frac{43}{\text{Stack Height (Feet)}} \right]^{-2.264} = \underline{0.005} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 19.0$$

based on 80 hours of operation per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

Carbon tetrachloride

Calculation of Emission Rate

$$24,000 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \frac{60}{\text{Influent flow Rate}} = \frac{0.071}{\text{(GPM)}} \text{ lb/hr}$$

$$\text{or } 24,000 \text{ ppb} \times \frac{60}{\text{GPM}} \times 5 \times 10^{-7} = \frac{0.071}{\text{lb/hr}} \text{ (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\frac{0.071 \text{ lb/hr}}{\text{gal}} \right) \times (327.84) \times \left[\frac{43}{\text{Stack Height (Feet)}} \right]^{-2.264} = \frac{0.025}{\text{mg/m}^3} \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 0.15$$

based on 80 hours of operation per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____
Unit: _____

Signature: _____

Trichloroethane

Calculation of Emission Rate

$$\underline{730} \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{60} \text{ Influent flow Rate} = \underline{0.002} \text{ lb/hr}$$

(GPM)

$$\text{or } \underline{730} \text{ ppb} \times \underline{60} \text{ GPM} \times 5 \times 10^{-7} \times \underline{0.1} = \underline{0.002} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.002} \text{ lb/hr} \right) \times (327.84) \times \left[\underline{43} \right]^{-2.264} \underline{1.3 \times 10^{-4}} \text{ mg/m}^3 \text{ (2)}$$

Stack
Height
(Feet)

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 1.35$$

based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization: _____

Signature: _____

Unit: _____

Toluene

Calculation of Emission Rate

$$\underline{860} \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{60} \text{ Influent flow Rate} = \underline{0.003} \text{ lb/hr}$$

(GPM)

$$\text{or } \underline{860} \text{ ppb} \times \underline{60} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.003} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.003} \text{ lb/hr} \right) \times (327.84) \times \left[\frac{43}{\text{Stack Height (Feet)}} \right]^{-2.264} \underline{2 \times 10^{-4}} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 3.75$$

based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

1,3-Dichlorobenzene

Calculation of Emission Rate

$$\underline{680} \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{60} \text{ Influent flow Rate} = \underline{0.002} \text{ lb/hr (GPM)}$$

$$\text{or } \underline{680} \text{ ppb} \times \underline{60} \text{ GPM} \times 5 \times 10^{-7} \times \underline{0.1} = \underline{0.002} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$(\underline{0.002} \text{ lb/hr}) \times (327.84) \times \left[\underline{43} \right]^{-2.264} \underline{1.3 \times 10^{-4}} \text{ mg/m}^3 \text{ (2)}$$

Stack
Height
(Feet)

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

NO TLV established

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

used 0.5 (TLV/A) =
based on 80 hours of operation
per week

Do the impacts from any of the contaminants exceed the AAC? UNKNOWN
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____
Unit: _____

Signature: _____

1,2-Dichlorobenzene

Calculation of Emission Rate

$$4900 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times 60 \text{ Influent flow Rate} = 0.014 \text{ lb/hr (GPM)}$$

$$\text{or } 4900 \text{ ppb} \times 60 \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = 0.014 \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(0.014 \text{ lb/hr} \right) \times (327.84) \times \left[\begin{array}{c} 43 \\ \text{Stack} \\ \text{Height} \\ \text{(Feet)} \end{array} \right]^{-2.264} = 9.2 \times 10^{-4} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{mg/m}^3 \text{ (3)}$$

used 0.5 (TLV/A) = 1.5
based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

AIR STRIPPING EVALUATION WORKSHEET

Source Identification	Bldg. 3	Maximum Influent Flow Rate (GPM)	50
Source Location	Naval Air Station Jacksonville, Florida	Maximum Air Flow Rate (CFM)	500
Manufacturer	Calgon, Westates or Equal	Emission Point Height (Ft)	43
Model Number	Vapor Pac 10 or Equal	Maximum Hours of Operation (Hrs/Wk)	80
Equipment has not been purchased.			

Contaminant Name	Max. Conc. (ppb)	Max. Emission Rate (lb/hr) (1)	Max. Ambient Impact (mg/m ³) (2)	TLV (mg/m ³)	Category (A or B)	AAC (mg/m ³)
1. Toluene	5,500	0.014	9.2×10^{-4}	375	B	3.75
2. 1,1-Dichloroethylene	2,500	0.006	3.9×10^{-4}			
3. Methylene chloride	85,000	0.213	0.014	105	B	1.05
4. 1,1,1-Trichloroethane	68,000	0.167	0.011	1,900	B	19
5. Trichloroethylene	830	0.002	1.3×10^{-4}	270	A	1.35
6. 1,2-Dichloroethane	1,800	0.004	2.6×10^{-4}	40	A	0.2
7.						
8.						
9.						
10.						
11.						
12.						

(1) Calculated on reverse side of this worksheet (Equation (1)).

(2) Calculated on reverse side of this worksheet (Equation (2)).

* A 90% reduction is assumed in the carbon adsorption unit.

Toluene

Calculation of Emission Rate

$$5500 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{50} \text{ Influent flow Rate} = \underline{0.014} \text{ lb/hr (GPM)}$$

$$\text{or } \underline{5500} \text{ ppb} \times \underline{50} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.014} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.014} \text{ lb/hr} \right) \times (327.84) \times \left[\underline{43} \right]^{-2.264} \underline{9.2 \times 10^{-4}} \text{ mg/m}^3 \text{ (2)}$$

Stack
Height
(Feet)

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = \underline{3.75}$$

based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____
Unit: _____

Signature: _____

1,1-Dichloroethylene

Calculation of Emission Rate

$$\frac{2500 \text{ ppb}}{10^3 \text{ ppb}} \times \left(\frac{\text{ppm}}{\text{ppm}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \frac{50}{\text{GPM}} \text{ Influent flow Rate} = \frac{0.006}{\text{lb/hr}}$$

$$\text{or } \frac{2500}{\text{ppb}} \times \frac{50}{\text{GPM}} \times 5 \times 10^{-7} \times 0.1 = \frac{0.006}{\text{lb/hr (1)}}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\frac{0.006}{\text{lb/hr}} \right) \times (327.84) \times \left[\frac{43}{\text{Stack Height (Feet)}} \right]^{-2.264} = \frac{3.9 \times 10^{-4}}{\text{mg/m}^3} \quad (2)$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{mg/m}^3 \quad (3)$$

no TLV established

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

$$\text{used } 0.5 \text{ (TLV/A)} =$$

based on 80 hours of operation
per week

Do the impacts from any of the contaminants exceed the AAC? UNKNOWN
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____
Unit: _____

Signature: _____

Methylene chloride

Calculation of Emission Rate

$$85,000 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{50} \text{ Influent flow Rate} = \underline{0.213} \text{ lb/hr (GPM)}$$

$$\text{or } \underline{85,000} \text{ ppb} \times \underline{50} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.213} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.213} \text{ lb/hr} \right) \times (327.84) \times \left[\frac{\text{Stack Height (Feet)}}{43} \right]^{-2.264} = \underline{0.014} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = \underline{1.05}$$

based on 80 hours of operation per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

1,1,1-Trichloroethane

Calculation of Emission Rate

$$68000 \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times 50 \text{ Influent flow Rate} = 0.167 \text{ lb/hr (GPM)}$$

$$\text{or } 68000 \text{ ppb} \times 50 \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = 0.167 \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$(0.167 \text{ lb/hr}) \times (327.84) \times [43]^{-2.264} = 0.011 \text{ mg/m}^3 \text{ (2)}$$

Stack
Height
(Feet)

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 19$$

based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

1,2-Dichloroethane

Calculation of Emission Rate

$$\frac{1800}{10^3} \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{50} \text{ Influent flow Rate} = \underline{0.004} \text{ lb/hr (GPM)}$$

$$\text{or } \underline{1800} \text{ ppb} \times \underline{50} \text{ GPM} \times 5 \times 10^{-7} = \underline{0.004} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.004} \text{ lb/hr} \right) \times (327.84) \times \left[\frac{43}{\text{Stack Height (Feet)}} \right]^{-2.264} = \underline{2.6 \times 10^{-4}} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = 0.2$$

based on 80 hours of operation per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____

Signature: _____

Unit: _____

Trichloroethylene

Calculation of Emission Rate

$$\underline{830} \text{ ppb} \times \left(\frac{\text{ppm}}{10^3 \text{ ppb}} \right) \left(\frac{\text{mg/liter}}{\text{ppm}} \right) \left(\frac{60 \text{ min}}{\text{hr}} \right) \left(\frac{\text{lb}}{453.6 \text{ g}} \right) \times \left(\frac{1 \text{ gram}}{1000 \text{ mg}} \right) \times$$

$$\left(\frac{3.785 \text{ liter}}{\text{gal}} \right) \times \underline{50} \text{ Influent flow Rate} = \underline{0.002} \text{ lb/hr}$$

(GPM)

$$\text{or } \underline{830} \text{ ppb} \times \underline{50} \text{ GPM} \times 5 \times 10^{-7} \times 0.1 = \underline{0.002} \text{ lb/hr (1)}$$

Calculation of Maximum Ambient Impact

Maximum Ambient Concentration =

$$\left(\underline{0.002} \text{ lb/hr} \right) \times (327.84) \times \left[\frac{\text{Stack Height (Feet)}}{43} \right]^{-2.264} = \underline{1.3 \times 10^{-4}} \text{ mg/m}^3 \text{ (2)}$$

Calculation of Acceptable Ambient Impact (AAC)

$$0.238 \text{ (TLV/A)} = \text{_____} \text{ mg/m}^3 \text{ (3)}$$

$$\text{used } 0.5 \text{ (TLV/A)} = \underline{1.35}$$

based on 80 hours of operation
per week

Where A = 100 for CAT-A substances
= 50 for CAT-B substances

Do the impacts from any of the contaminants exceed the AAC? NO
If yes, list the contaminants which have exceedances.

List the conditions to be incorporated into approval document to insure that the AAC will not be exceeded.

Reviewed by: _____

Title: _____

Date: _____

Phone: _____

Organization _____
Unit: _____

Signature: _____

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

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

3. Article Addressed to: Captain Kevin F. Delaney Commsnding Officer Department of the Navy Jacksonville, FL 32212-5000	4. Article Number P 407 802 148
	Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
	Always obtain signature of addressee or agent and DATE DELIVERED .
5. Signature — Addressee X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature — Agent X <i>M.A. Hanson</i>	
7. Date of Delivery <i>21 Mar 91</i>	

PS Form 3811, Apr. 1989

★ U.S.G.P.O. 1989-238-815

DOMESTIC RETURN RECEIPT

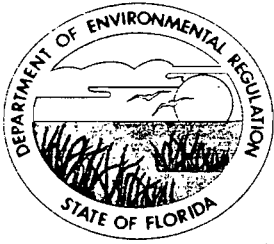
P 407 802 148

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

Sent to Capt. Kevin F. Delaney	
Street and No. Dept. of the Navy	
P.O., State and ZIP Code Jacksonville, FL 32212-5000	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date Mailed: 3-20-91 Permit: AC 16-192940 AC 16-192941	

★ U.S.G.P.O. 1989-234-555

PS Form 3800, June 1985



Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

March 19, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Captain Kevin F. Delaney
Commanding Officer
Department of the Navy
Jacksonville, Florida 32212-5000

Dear Captain Delaney:

Re: AC 16-192940 and AC 16-192941

The Department has received your application for the permit to construct two air strippers at the Naval Air Station in Jacksonville, Duval County, Florida. Before we can continue the processing of these applications, the following data needs to be submitted:

- o Complete the attached air stripping forms for each one of the air stripping towers.

As soon as this information is received, we will resume processing your applications. If you have any questions about the data requested, please feel free to call Teresa M. Heron (Review Engineer) or John Glunn (Air Toxics Specialist) at (904)488-1344 or write to me at the above address.

Sincerely,

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

CHF/TH/t

cc: J. Cole
R. Roberson
W. Allen, P.E.
T. Heron



DEPARTMENT OF THE NAVY
NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212-5000

RECEIVED
DER - MAIL ROOM

IN REPLY REFER TO:

1991 FEB 21 AM 11:25

6280

Code 184

20 FEB 1991

Mr. Clair Fancy
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

RECEIVED

FEB 21 1991

Dear Mr. Fancy:

DER-BAQM

Enclosed is an Air Pollution Construction Permit Application for Building No. 2 located at Naval Air Station Jacksonville along with a \$200.00 check for application fee. Construction in Building No. 2 will consist of a vapor phase carbon adsorber.

If you have any questions, please contact Doug Cochran, Public Works Department, Environmental Division at (904) 772-2717.

Sincerely,

James Schneider
JOSEPH G. WALLMEYER
Director, Environmental Division
By direction of the Commanding Officer

Enclosure

- (1) Application Package
- (2) Check

cc: J. Neron
J. Cole, NE Dist.
R. Robinson, BESD



DEPARTMENT OF THE NAVY RECEIVED
NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212-5000

DER - MAIL ROOM

IN REPLY REFER TO:

1991 FEB 21 AM 11:25
6280

Code 184

20 FEB 1991

Mr. Clair Fancy
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301-8241

RECEIVED

FEB 21 1991

DER-BAQM

Dear Mr. Fancy:

Enclosed is an Air Pollution Construction Permit Application for Building No. 3 located at Naval Air Station Jacksonville along with a \$200.00 check for application fee. Construction in Building No. 3 will consist of a vapor phase carbon adsorber.

If you have any questions, please contact Doug Cochran, Public Works Department, Environmental Division at (904) 772-2717.

Sincerely,

James Schrader
JOSEPH G. WALLMEYER
Director, Environmental Division
By direction of the Commanding Officer

Enclosure

- (1) Application Package
- (2) Check

cc: J. Heron
J. Cole, NE Dist
R. Rollerson, BESD



United States Treasury



15-51
000

NAVY

8352-03021683

Check No.

PORT HUENEME, CALIFORNIA

27 DEC 90

Pay to
the order of

FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

\$200.00*

VOID AFTER ONE YEAR

200DOLLARSAND00CENTS

DISBURSING OFFICER

BY *Marcus L. Birdwell*

⑈83523⑈

⑆000000568⑆ 030216835⑈

Dear Mr. Fancy:

Enclosed is an Air Pollution Construction Permit Application for Building No. 3 located at Naval Air Station Jacksonville along with a \$200.00 check for application fee. Construction in Building No. 3 will consist of a vapor phase carbon adsorber.

If you have any questions, please contact Doug Cochran, Public Works Department, Environmental Division at (904) 772-2717.

Sincerely,

James Schneider
JOSEPH G. WALLMEYER
Director, Environmental Division
By direction of the Commanding Officer

Enclosure

- (1) Application Package
- (2) Check

001031

BEST AVAILABLE COPY



United States Treasury

15-51
000

NAVY

8352-03020939

Check No.

PORT HUENEME, CALIFORNIA

NOV 27 '90

Pay to the order of FLORIDA DEPT OF ENV. REGULATION
BUREAU OF AIR QUALITY

\$200.00*

VOID AFTER ONE YEAR

200DOLLARSAND00CENTS

Palencho
2 U.S.A. DISBURSING OFFICER

⑈83523⑈

⑆000000518⑆ 030209399⑈

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

#200pd.
2-21-91
Recpt. #151248

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



AC16-192941

BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES
Minor VOC's from Air Stripper/

SOURCE TYPE: Carbon Column ☒ New¹ ☐ Existing¹

APPLICATION TYPE: ☒ Construction ☐ Operation ☐ Modification

COMPANY NAME: US Navy (Naval Air Station, Jacksonville, FL) COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime Vapor phase)
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Bldg 2. carbon adsorber

SOURCE LOCATION: Street Wright Street (Naval Air Station) City Jacksonville

UTM: East 435.3 North 3344.5

Latitude 30 ° 13 ' 37 "N Longitude 81 ° 40 ' 17 "W

APPLICANT NAME AND TITLE: NAVAL AIR STATION, JACKSONVILLE

APPLICANT ADDRESS: JACKSONVILLE, FLORIDA

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

Commanding Officer

I am the undersigned owner or ~~authorized representative~~ of Naval Air Station, Jacksonville

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: Kevin F. Delaney

KEVIN F. DELANEY, CAPT, USN, COMMANDING OFFICER
Name and Title (Please Type)

Date: 20 FEB 1991 Telephone No. (904) 772-2334

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

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

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

Signed Woodrow W Allen

Woodrow W. Allen, P.E.

Name (Please Type)

Burns & McDonnell Engineering Co.

Company Name (Please Type)

4800 E. 63rd St. PO Box 419173, Kansas City, MO

Mailing Address (Please Type)

Florida Registration No. 32381

Date: 10/31/90

Telephone No. 816-822-3169

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.

Wastewater from paint stripping operation is treated to remove solvents volatile organic compounds. Organics from the liquid phase are transferred to the vapor phase in a packed tower. The vapor phase is then passed through activated carbon to adsorb the organics.

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

Start of Construction 1/91 Completion of Construction 2/92

- 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.)

The estimated cost of the vapor phase carbon adsorber and carbon is \$50,000.

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

None associated with emissions.

DT16-158162 Domestic Wastewater Treatment Plant Temporary Operating Plant

includes a compliance schedule.

E. Requested permitted equipment operating time: hrs/day 8; days/wk 7; wks/yr 52;
if power plant, hrs/yr _____; if seasonal, describe: Not applicable

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

1. Is this source in a non-attainment area for a particular pollutant? Yes
 - a. If yes, has "offset" been applied? Not applicable
 - b. If yes, has "Lowest Achievable Emission Rate" been applied? Not applicable
 - c. If yes, list non-attainment pollutants. ozone
2. Does best available control technology (BACT) apply to this source?
If yes, see Section VI. Not applicable
3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. Not applicable
4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? Not applicable
5. Do "National Emission Standards for Hazardous Air Pollutants"
(NESHAP) apply to this source? Not applicable
- H. Do "Reasonably Available Control Technology" (RACT) requirements apply
to this source? Not applicable
 - a. If yes, for what pollutants? _____
 - b. If yes, in addition to the information required in this form,
any information requested in Rule 17-2.650 must be submitted.

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

New source, does not fall into any specific categories under RACT. Therefore
17-2.620 applies.

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		
Solvents*	Methyl Ethyl Ketone		Unknown	Not on flow diagram
	Methylene Chloride			Flow diagram starts
	Toluene			with wastewater flow
	Chlorinated aliphatics and	defins		after generation

* Amount, constituents, and concentrations are variable

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

1. Total Process Input Rate (lbs/hr): Cannot be determined

2. Product Weight (lbs/hr): varies

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

Name of Contaminant	Emission ¹		Allowed Emission ² Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Methylene Chloride	0.488	0.714		no specific	Not applicable		Effluent
Methyl Ethyl Ketone	0.008	0.012		standards			out of
1,1,1,-trichloroethane	0.071	0.103					adsorption
carbontetra chloride	0.071	0.103					column
Trichloro-ethene	0.002	0.003					

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard.

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

Name of Contaminant	Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Toluene	0.003	0.004		no specific	Not applicable		
1,3-Dichloro benzene	0.002	0.003		standards			
1,2-Dichloro benzene	0.014	0.020					
Total (VOC)	0.659	0.962	1400T/yr*				

*17-2.510(5)(b) Table 510-1

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Calgon-Vapor Poc 10 (equipment has not been purchased)	VOC	90%	Not applicable	Manufacturer's experience based on adsorptive capacity of carbon

Carbon reactor is monitored so that when contaminants are detected in the effluent,
E. Fuels the carbon is changed out. Size of reactor based on desired time between change outs.

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

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

Fuel Analysis:

Percent Sulfur: N/A 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.

Spent carbon will be reactivated at a RCRA permitted facility through a service contract
 Calgon company manufacturer of carbon, for example has such a facility in Pittsburgh, PA.
 Carbon will be reactivated rather than disposed

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

Stack Height: 11 ft. Stack Diameter: 9 -inch XX.
 Gas Flow Rate: 846 ACFM 800 DSCFM Gas Exit Temperature: 90 °F.
 Water Vapor Content: 70% Rh. % Velocity: 1800 FPM RRX

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.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

Stack Height: _____ ft. Stack 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.): _____

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

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

☐ Yes ☐ No

Contaminant

Rate or Concentration

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

☐ Yes ☐ No

Contaminant

Rate or Concentration

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

Contaminant

Rate or Concentration

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

1. Control Device/System:

2. Operating Principles:

3. Efficiency:*

4. Capital Costs:

*Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

Contaminant

Rate or Concentration

10. Stack Parameters

a. Height:	ft.	b. Diameter:	ft.
c. Flow Rate:	ACFM	d. Temperature:	°F.
e. Velocity:	FPS		

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

1.

a. Control Device:	b. Operating Principles:
c. Efficiency: ¹	d. Capital Cost:
e. Useful Life:	f. Operating Cost:
g. Energy: ²	h. Maintenance Cost:
i. Availability of construction materials and process chemicals:	
j. Applicability to manufacturing processes:	
k. Ability to construct with control device, install in available space, and operate within proposed levels:	

2.

a. Control Device:	b. Operating Principles:
c. Efficiency: ¹	d. Capital Cost:
e. Useful Life:	f. Operating Cost:
g. Energy: ²	h. Maintenance Cost:
i. Availability of construction materials and process chemicals:	

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

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

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no. sites _____ TSP () SO₂* _____ Wind spd/dir

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

Other data recorded _____

Attach all data or statistical summaries to this application.

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

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? ☐ Yes ☐ No
- b. Was instrumentation calibrated in accordance with Department procedures?
☐ Yes ☐ No ☐ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year
2. Surface data obtained from (location) _____
3. Upper air (mixing height) data obtained from (location) _____
4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.
2. _____ Modified? If yes, attach description.
3. _____ Modified? If yes, attach description.
4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
ISP	_____ grams/sec
SO ₂	_____ grams/sec

E. Emission Data Used in Modeling

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

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

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

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

SECTION V - SUPPLEMENTAL REQUIREMENTS

BUILDING 2

Wastewater Generation Description:

Aircraft are brushed or sprayed with paint stripping agents and then washed with water, steam, and detergent for removal of paint.

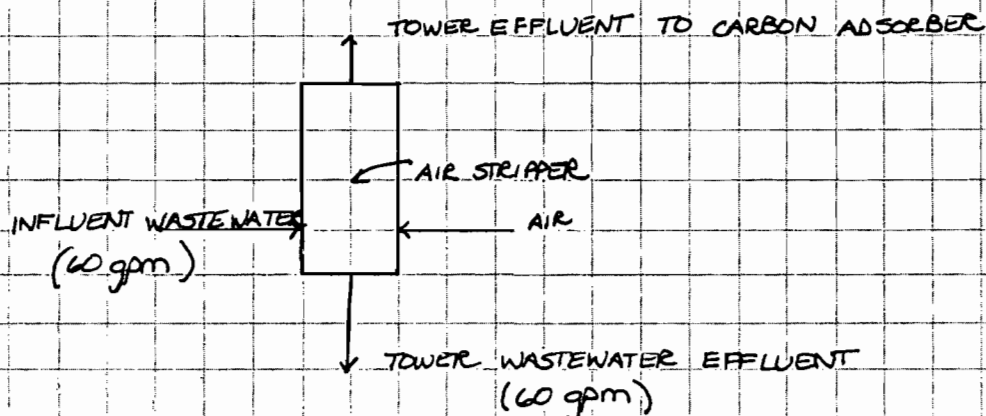
Influent Wastewater Characteristics:

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1 - Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3 - Dichlorobenzene	680
1,2 - Dichlorobenzene	4,900
Flow	60 gpm
pH	3.0-10.0 (su)
Temperature	100 (°F)

* * * * *

SECTION V SUPPLEMENTAL REQUIREMENTS

BLDG 2.



CONTAMINANT	STRIPPER INFLUENT (mg/min)	WATER EFFLUENT (mg/min)	AIR EFFLUENT (mg/min)
MeCl ₂	38,590.	1,606.	36,984
MEK	10,442.	9,806.	636
1,1,1-TCA	5,448.	101	5,347
CCl ₄	5,448	89	5,359
TCE	159.	3	136
Toluene	195	5	190
1,3-DCB	154	6	148
1,2DCB	1,112.	63	1,049
			<u>49,869</u>

WATER EFFLUENT CONCENTRATIONS PROVIDED BY CALGON WHO DESIGNED AIR STRIPPER

CARBON ADSORBER DESIGNED TO REMOVE 90% OF VOLATILES.

EMISSIONS = 4,987 mg/min

$$\text{EMISSIONS} = 4,987 \frac{\text{mg}}{\text{min}} \times 60 \frac{\text{min}}{\text{hr}} \times 8 \frac{\text{hr}}{\text{day}} \times 365 \frac{\text{day}}{\text{yr}} \div 453,595 \frac{\text{mg}}{\text{lb}}$$

EMISSIONS = 1926. lb
yr

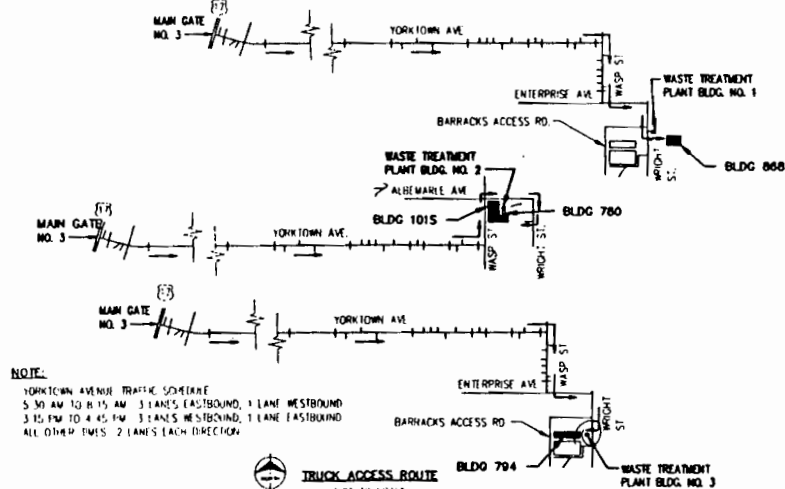
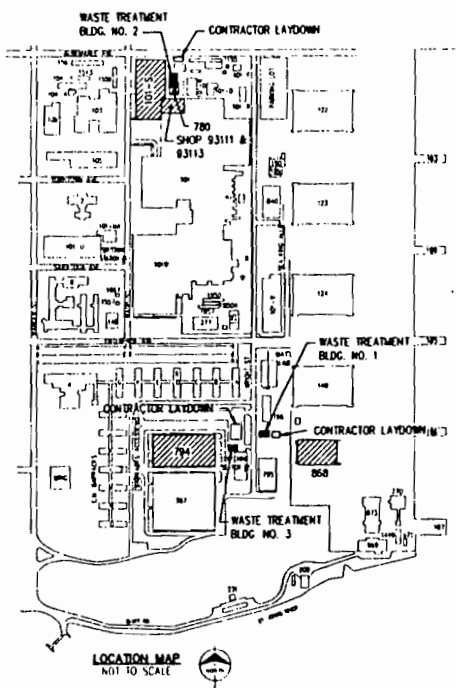
Department of the Navy
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHERN DIVISION
 Charleston, South Carolina

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HAZARDOUS WASTE MINIMIZATION
 IN BLDG 780, 101S, SHOP 93111, 93113, BLDG 794 & 868
 AND
WASTE TREATMENT FACILITIES

→ Naval Aviation Depot, NAS
 Jacksonville, Florida

A-E CONTRACT N62467-89-C-0272

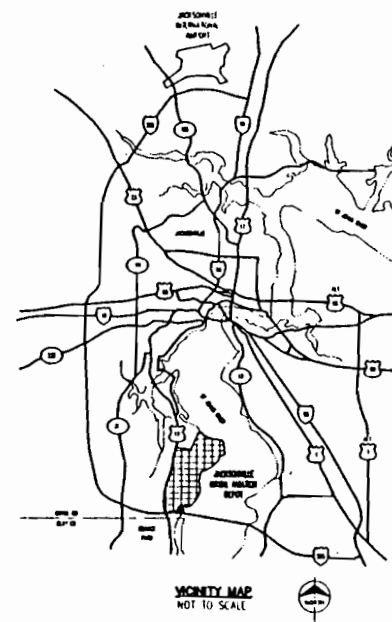


NOTE:
 YORKTOWN AVENUE TRAFFIC SCHEME
 5:30 AM TO 8:15 AM 3 LANES EASTBOUND, 1 LANE WESTBOUND
 3:15 PM TO 4:45 PM 3 LANES WESTBOUND, 1 LANE EASTBOUND
 ALL OTHER TIMES 2 LANES EACH DIRECTION



TRUCK ACCESS ROUTE
 NOT TO SCALE

100% DESIGN



VICINITY MAP
 NOT TO SCALE

HAZARDOUS WASTE MINIMIZATION COVER SHEET	
PROJECT NO. N62467-89-C-0272 DRAWING NO. 6225-044	DATE 06-09-0272 SCALE 1"=100'
DESIGNED BY CHECKED BY APPROVED BY	DATE DATE DATE
SOUTHERN DIVISION JACKSONVILLE, FL NAVAL AVIATION DEPOT	
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ETC. WITHIN THIS SPECIFIC TREATMENT UNIT ARE SHOWN.

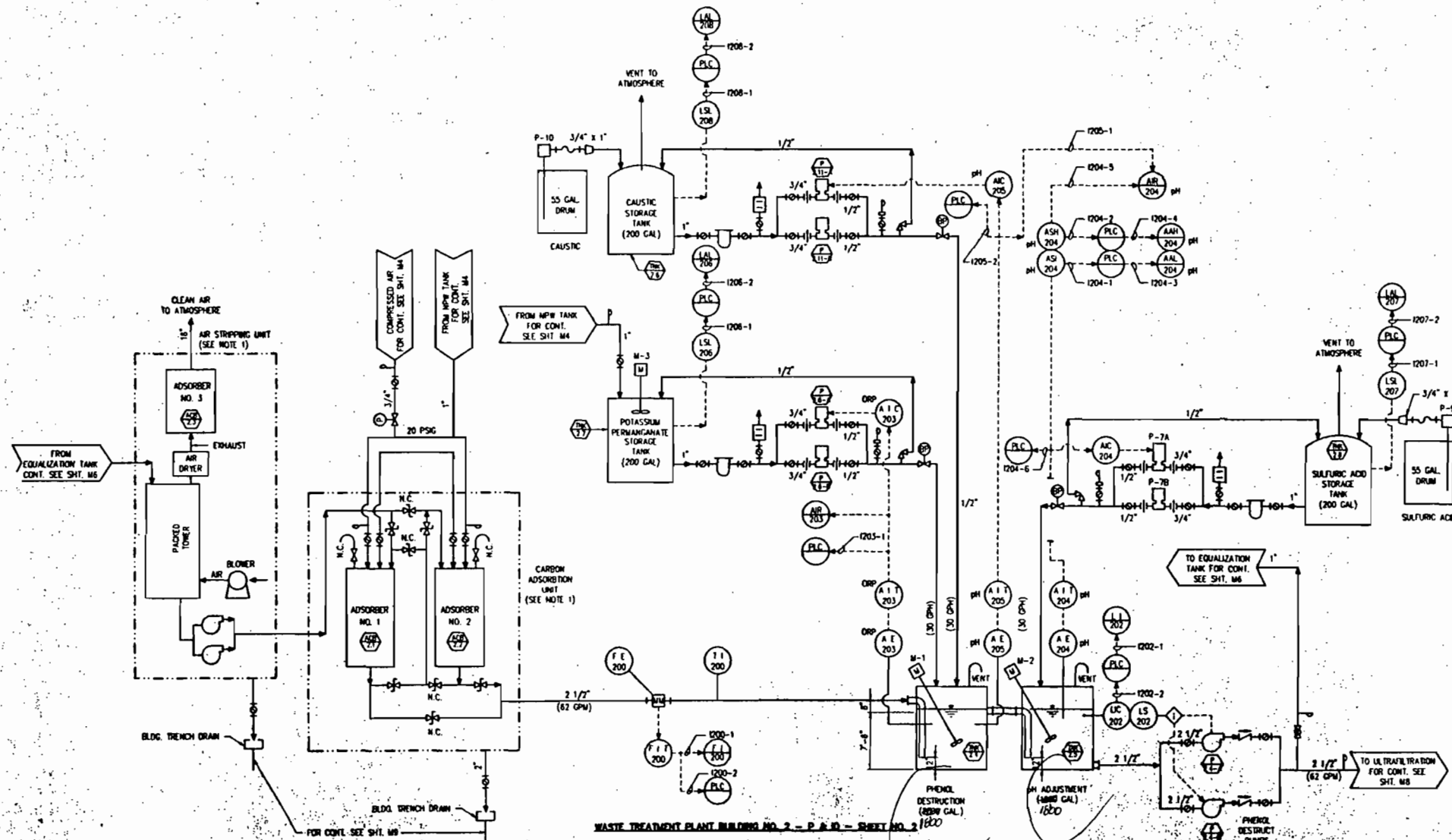
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DATE	10/1/80
BY	W. J. HARRIS
FOR	W. J. HARRIS
REMARKS	HAZARDOUS WASTE MINIMIZATION P. B. D. - SHEET NO. 1
PROJECT	HAZARDOUS WASTE MINIMIZATION
LOCATION	WAS. MOONSHIRE A.
OWNER	SOUTHERN DIVISION
DESIGNED BY	W. J. HARRIS
CHECKED BY	W. J. HARRIS
APPROVED BY	W. J. HARRIS



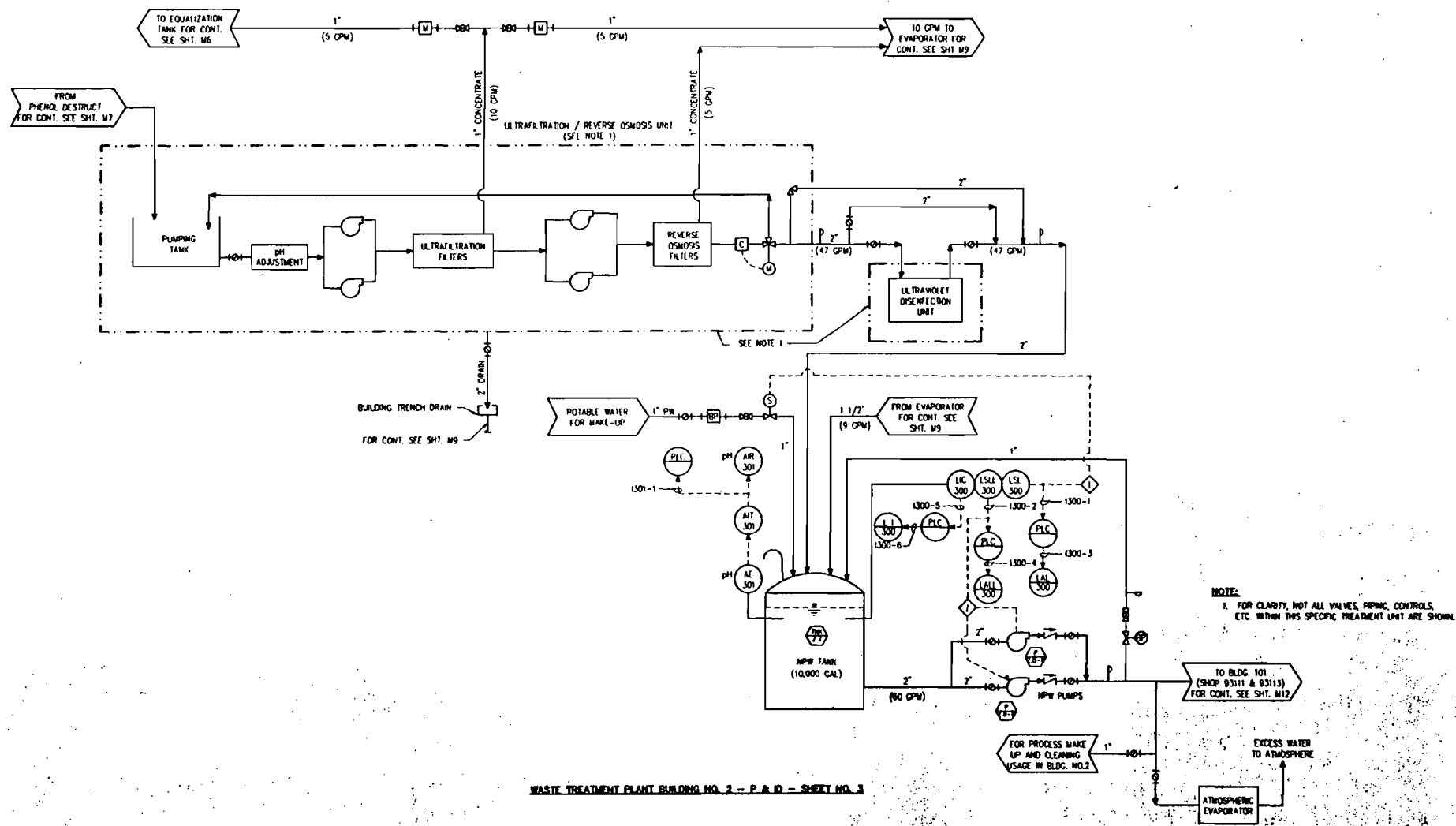
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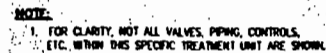
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NOTE:
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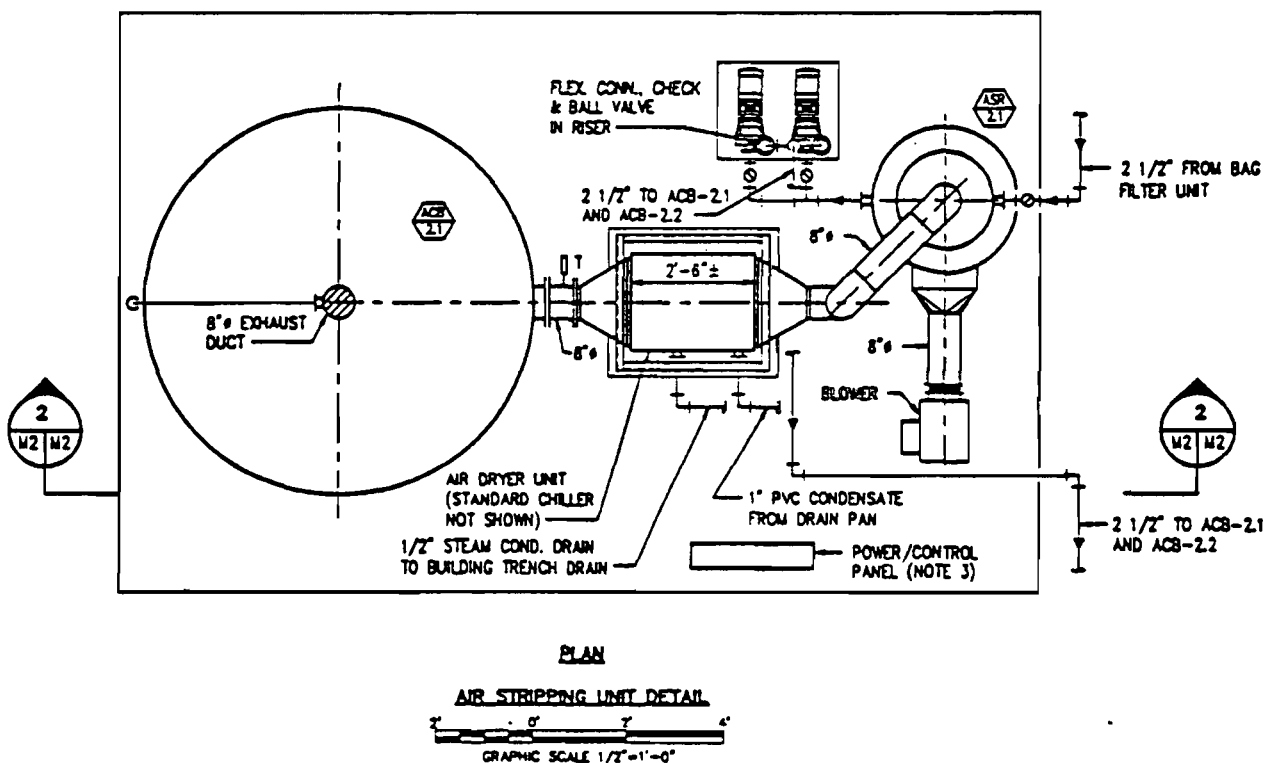
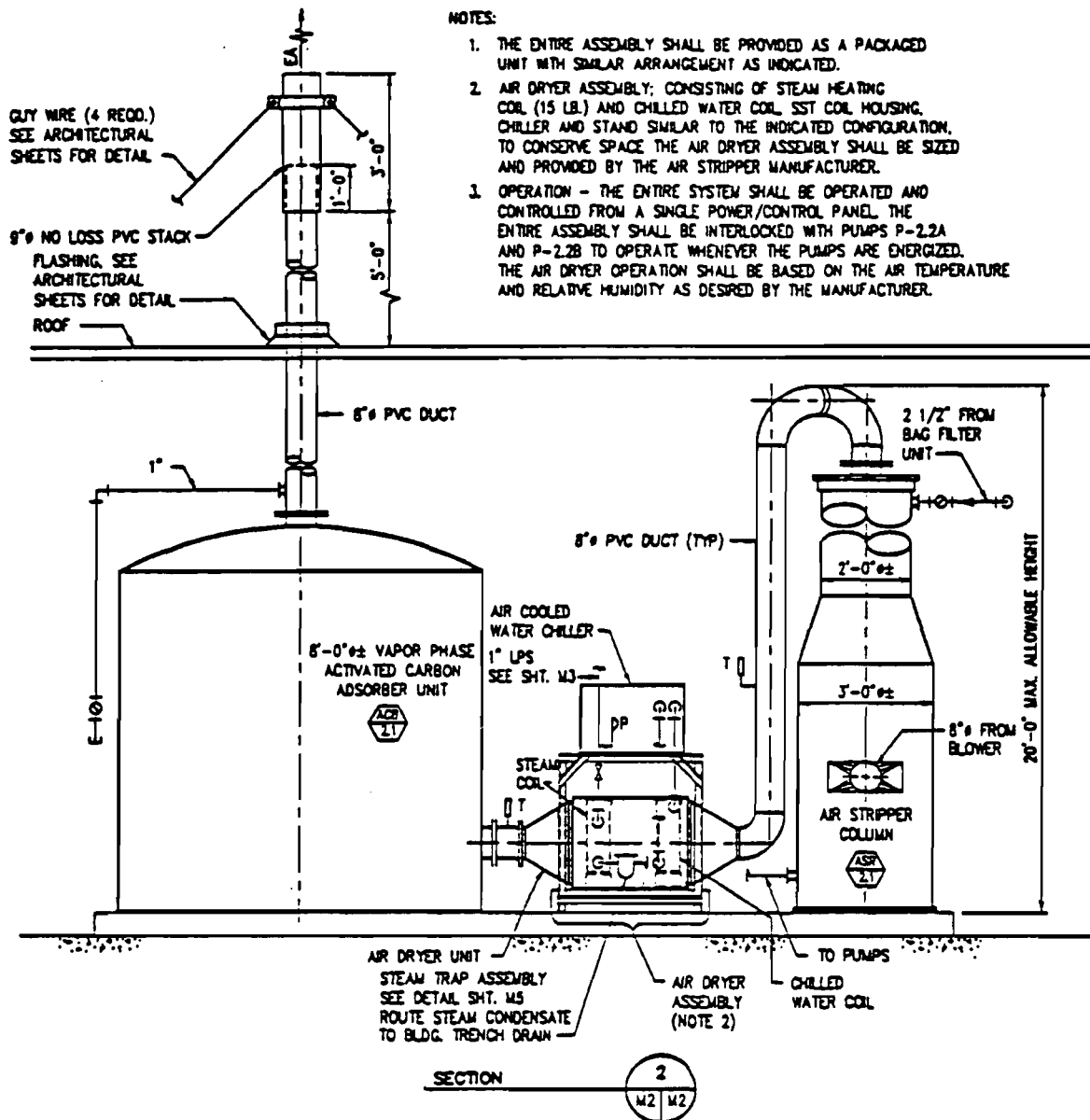
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	SOUTHERN DIVISION HAZARDOUS WASTE MINIMIZATION WASTE TREATMENT PLANT BUILDING NO. 2 - P & ID - SHEET NO. 2	DESIGNED BY: M7 CHECKED BY: M7 APPROVED BY: M7 PROJECT NO.: 157467-89-C-07 SHEET NO.: 522545





M9

DEPARTMENT OF THE ARMY SOUTHERN DIVISION WASHINGTON, DC		REV. DESCRIPTION MAX. WASHINGTON, D.C. HAZARDOUS WASTE MINIMIZATION URGENT REQUEST FOR BUDGET NO. 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900,	
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INDUSTRIAL AIR PURIFICATION SYSTEMS

Calgon Carbon Corporation's industrial air purification systems are pre-engineered granular activated carbon adsorption systems. Typical applications are found in many industries where there is a need to control volatile organic compound emissions, remove toxic compounds, control odors, protect personnel or minimize equipment corrosion. These modular units are designed to provide maximum economy, ease of installation and operation, and to be used in situations when the granular activated carbon is replaced rather than regenerated in place.

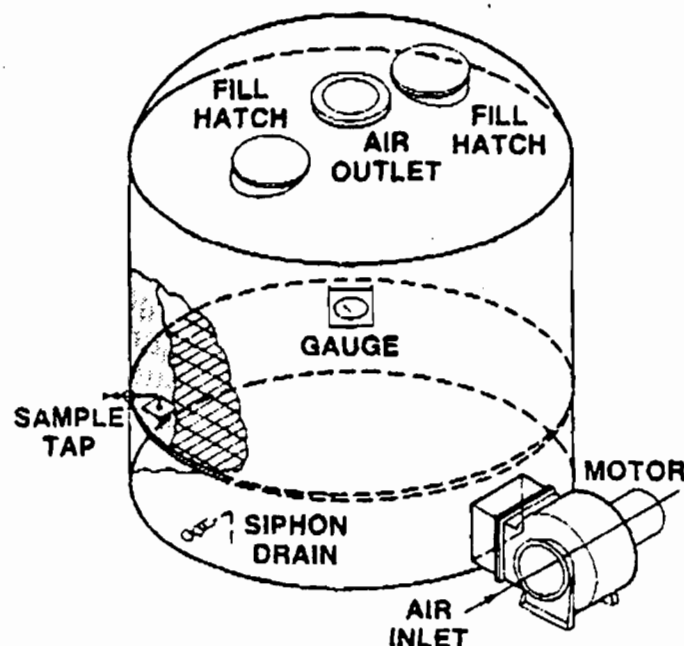
DESCRIPTION

Calgon Carbon Corporation air purification systems consist of carbon steel adsorbers, with fan and motor assembly optional. The systems can also be designed with protective linings and 316 stainless steel components for use in corrosive atmospheres. They are available in four different sizes to handle air flows up to 10,000 cfm operating at ambient conditions. To handle larger flows, multiple units may be installed in parallel. The adsorbers can accommodate carbon bed depths of up to five feet, typical bed depth is three to three and one-half feet.

The Calgon Carbon Corporation industrial air purification systems are delivered ready for quick and easy installation. The items required for operation are electrical connections to fan motor (if fan is provided with system), and appropriate foundations, and ductwork to deliver contaminated air to the adsorber inlet. During operation, the contaminated air is driven upflow through the carbon bed. The undesirable compounds are removed and the treated air is vented to the atmosphere. When the contaminant begins to appear in the treated air stream, spent carbon is removed and replaced with fresh carbon.

FEATURES AND BENEFITS

- Effective removal of contaminants
- Economical
- Pre-engineered
- Easy installation
- Low maintenance requirements
- Available in a wide range of flows
- Built in flow control provided with fan



STANDARD SIZING CHART

Nominal System Size, Diameter	6 ft	8 ft	10 ft	12 ft
Nominal Capacity, CFM	1860	3500	5680	8500
Bed Area, sq. ft.	28.3	50.3	78.5	113.1
Nominal Superficial Velocity, ft./min.	66	70	72	75
Nominal Carbon Amount, lbs.	3000	5000	8000	11000
Nominal Carbon Bed Depth, ft.	3.5	3.3	3.4	3.2
Nominal Fan HP	7.5	10	15	25

CAUTION

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low-oxygen spaces should be followed, including all applicable Federal and State requirements. For additional details see Calgon Carbon Bulletin No. 198, Safety Considerations for Air Purification Systems.

SECTION 11145

AIR STRIPPING COLUMNS

PART 1 - GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent required. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

B15.1 1984 Safety Standard for Mechanical Power
Transmission Apparatus

AMERICAN WELDING SOCIETY (AWS)

D1.1 1989 Structural Welding Code, Steel

ANTIFRICTION BEARING MANUFACTURERS ASSOCIATED (AFBMA)

AFBMA 9 1978 Load Ratings and Fatigue Life for Ball
Bearings

AFBMA 11 1978 Load Ratings and Fatigue Life for Roller
Bearings

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D-3299 1988 Filament-Wound Glass-Fiber-Reinforced
Thermoset Resin Chemical-Resistant Tanks

1.2 SUBMITTALS

Submit the following to the Contracting Officer in accordance with Section 01300, "Submittals."

1.2.1 SD-10 Design Data

Submit calculations required by paragraph entitled "Performance."

1.2.2 SD-31 Design Drawings

Submit drawings for the air stripping columns and accessory equipment including principal dimensions and locations of fittings, electrical connections and remote monitoring.

1.2.3 SD-70 Test Reports

Submit test results, signed by the manufacturer, which indicate the air stripping system is capable of meeting the specified effluent levels.

1.2.4 SD-77 Field Test Reports

Submit service representatives' complete signed report of results of the inspection, operation, adjustments and tests. Report shall include detailed descriptions of points inspected, tests and adjustments made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance. Report shall document whether inspections, operations and tests were acceptable or not. For unacceptable items, describe corrective action taken or recommended. Include the manufacturer's certificate that equipment is ready for permanent operation and that nothing in installation will render manufacturer's warranty null and void.

1.2.5 SD-80 Operation and Maintenance Manuals

Provide five complete sets of Data Package 4, Operation and Maintenance Manuals in accordance with Section 01730, "Operation and Maintenance Data."

1.3 DELIVERY, STORAGE, AND HANDLING MATERIALS

1.3.1 Delivery and Storage

Inspect materials delivered to site for damage; unload and store with minimum handling. Store materials on-site in enclosures or under protective coverings. Protect materials not suitable for outdoor storage to prevent damage during periods of inclement weather, including subfreezing temperatures, precipitation, and high winds. Store materials susceptible to deterioration by direct sunlight under cover and avoid damage due to high temperatures. Do not store materials directly on ground. If special precautions are required, prominently and legibly stencil instructions for such precautions on outside of equipment or its crating.

1.3.2 Handling

Handle equipment in such a manner as to ensure delivery to final location in sound, undamaged condition. Make satisfactory repairs to damaged material(s) at no cost to Government. Carry and do not drag materials.

1.4 QUALITY ASSURANCE

1.4.1 Guarantee

The Air Stripping Unit Manufacturer must guarantee that the installed air stripping system produces an effluent which meets the requirements of this specification. The effluent quality exiting the air stripping unit must be equal to or better than the specification requirement.

1.4.2 Qualification of Manufacturer

Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful installations acceptable to the Contracting Officer.

1.4.3 Influent Characteristics

The influent to be stripped shall possess the following minimum characteristics:

1.4.3.1 Treatment Plant No. 2:

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1 - Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3 - Dichlorobenzene	680
1,2 - Dichlorobenzene	4,900
Flow	60 (gpm)
pH	3.0-10.0 (su)
Temperature	100 (°F)

1.4.3.2 Treatment Plant No. 3:

<u>Material</u>	<u>Concentration (ug/l)</u>
Toluene	5,500
1,1 - Dichloroethylene	2,500
Methylene Chloride	85,000
1,1,1 - Trichloroethane	68,000
Trichloroethylene	830
1,2 - Dichloroethane	1,800
Flow	50 (gpm)
pH	3.0-10.0 (su)
Temperature	100 (°F)

1.4.4 Performance

The air stripping units shall, in conjunction with the carbon adsorption units specified in Section 11150, "Activated Carbon Filters" remove 90 percent of the listed materials.

1.5 FACTORY TESTS

1.5.1 Operate the air stripper under simulated factory conditions for a minimum of one hour.

1.5.2 Insure that the air stripper operates as specified.

PART 2 - PRODUCTS

2.1 GENERAL

2.1.1 Provide two air stripping units, one each for Treatment Plant No. 2 and Treatment Plant No. 3.

2.1.2 The air stripping units shall be manufactured by the same manufacturer that manufactures the activated carbon adsorbers specified in Section 11150, "Activated Carbon Filters."

2.1.3 Each of the air stripping units shall include a stripping tower filled with high efficiency packing, mist eliminator, pumping sump, blowers, controls, transfer pumps to transfer the air stripping unit effluent to the carbon adsorption unit, all interconnecting piping and ductwork, and a carbon adsorber to adsorb the pollutants from the stripper exhaust.

2.2 STRIPPING TOWER

2.2.1 Wastewater shall be introduced to the top of the stripping tower and air shall be blown into the bottom of the stripping tower.

2.2.2 Each tower shall be filled with high efficiency packing to enhance air to water contact.

2.2.3 The tower shall utilize an FRP shell, designed in accordance with ASTM-D3299 polypropylene packing and aluminum ladders.

2.2.4 Towers shall be 20-foot high, maximum, 2-foot diameter minimum with a minimum packing depth of 15 feet.

2.2.5 The packing support shall be constructed of the same material as the tower and shall be constructed with a minimum of 80-percent free space.

2.2.6 The packing shall be designed for maximum air to water contact and shall be of the Pall ring design. The packing shall be constructed of polypropylene or an approved equal.

2.2.7 The inlet distributor shall either be a single full cone spray type or an orifice type distributor.

2.2.8 A mist eliminator shall be provided at the top of the tower. The unit eliminator shall be a 6-inch thick porous mesh pad constructed of monofilament polypropylene.

2.3 BLOWERS

2.3.1 Two blowers shall be included for each stripping tower to supply air to remove the materials from the wastewater.

2.3.2 The quantity of air required shall be determined by the air stripping column manufacturer based on the influent and effluent data in this section;

but, at a minimum, the air quantity listed in the air stripper schedule shall be used.

2.3.3 Two blowers shall be provided for each stripping tower. Each blower shall be sized to provide 100 percent of the air required for the stripping tower.

2.3.3.1 Blowers shall either be direct or V-belt drive.

2.3.4 Blowers shall be constructed in accordance with ASTM B15.1-72 and will be powered by TEFC 460V 3-phase 60 Hz motors.

2.4 TRANSFER PUMPS

2.4.1 Two transfer pumps shall be included with each stripping tower to pump the effluent from the sump in the base of the stripping tower to the top of the carbon adsorption units.

2.4.2 Wastewater flow rates shall be as shown.

2.4.3 Pipe size shall be as shown.

2.4.4 Pump capacity shall be determined by the air stripper manufacturer.

2.4.5 Each pump shall be designed for 100 percent capacity.

2.4.6 Pumps shall be designed in accordance with Section 11130 - "Pumps."

2.4.7 Pumps shall be started and stopped automatically by level controls in the stripping tower sumps.

2.5 CARBON ADSORBER

2.5.1 Each stripping tower shall include one carbon adsorber to remove the materials from the air stream that were stripped from the wastewater stream.

2.5.2 At least 90 percent of the pollutants in the air stream shall be removed by the carbon.

2.5.3 The carbon adsorber will be designed in accordance with the applicable portions of Section 11150, "Carbon Adsorbers."

2.5.4 The size of the carbon adsorber shall be as shown in the Carbon Column Schedule.

2.5.5 Carbon type shall be as recommended by the carbon manufacturer.

2.6 CONTROLS

2.6.1 The air stripping units shall include all wiring, controls, motor starters and control panels, in accordance with Division 16 - ELECTRICAL, needed for complete operation.

2.6.2 The control panel shall include hand-off-auto switches for the blowers and pump and blower operating lights and alarm condition lights (blower or pump shut-down).

2.6.3 The control panel shall include contacts to send unit operating and alarm signals back to the main control panel.

2.7 Each air stripping unit shall be factory assembled on a steel skid and shall include all necessary piping, valves, controls and ducts.

2.7.1 Piping and valves shall be as specified in Section 15401, "Process Piping."

2.8 AIR DRYER

2.8.1 An air dryer system consisting of a chiller, with condensate removal, and a heater, designed to reduce the relative humidity of the air below 50 percent shall be included with each air stripping unit.

2.9 PAINTING

See Section 11000, "Process Equipment General Requirements."

2.10 SPARE PARTS

2.10.1 The air stripping unit manufacturer shall furnish a recommended spare parts list.

PART 3 - EXECUTION

3.1 INSTALLATION

System shall be installed in accordance with manufacturer's recommendations.

3.2 INSPECTION

Examine each component of system for compliance with requirements specified in Part 2, Products. Redesign or modification of equipment to comply with specified requirements, or necessary redesign or modification following failure to meet specified requirements, shall receive particular attention for adequacy and suitability. This element of inspection shall encompass visual examinations and dimensional measurements. Noncompliance with specified requirements, or presence of one or more defects preventing or lessening maximum efficiency of air stripper system operation shall constitute cause for rejection.

3.3 FIELD QUALITY CONTROL

3.3.1 Field Hydrostatic Test
After system has been leveled and secured, hydrostatically test unit (for no leakage) for an additional 8 hours by filling with potable water.

3.4 TESTS

After hydrostatic test has been successfully completed and unit has been properly connected to influent and effluent piping, allow influent mixture previously described in paragraph titled "Quality Assurance" to flow into the system filled with potable water. Optimize the unit within five working days.

3.4.1 Test for Contaminants

Test effluents for contaminants described in paragraph "Performance." Test shall be performed by an independent Certified Testing Laboratory.

3.4.2 Analytical Method

Test and sample preservation methods for test contaminants shall be in accordance with the latest revisions of APHA AWWA, WPCF Standard Method for Examination of Water and Wastewater, EPA MCAWW, EPA Methods for Chemical Analysis of Water and Wastes or those substitute methods approved by the governing regulatory agencies having jurisdiction.

3.5 TEST CRITERIA

If the system does not meet requirements of this specification, the unit may be rejected. If the unit is not operating at design efficiency five days after installation, Government may reject system. In the event Government rejects unit, Contractor shall remove and replace defective component(s) or system with acceptable system or component(s).

3.6 PREPARATIONAL TEST

A services representative from company manufacturing or supplying system shall inspect, operate and test system before it is operated.

--End of Section--

SECTION 11150

ACTIVATED CARBON FILTERS

PART 1 - GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

B16.5 1988 Pipe Flanges and Flanged Fittings

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A36 1988 Structural Steel

A53 1988 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

A181 1987 Forgings, Carbon Steel for General Purpose Piping

A285 1982 (1987) Low and Intermediate Steel Plates for Pressure Vessels

AMERICAN WELDING SOCIETY (AWS)

D1.1 1989 Structural Welding Code, Steel

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

SP-1 1985 Solvent Cleaning

SP-5 1985 White Metal Blast Cleaning

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

1989 Boiler and Pressure Vessel Code Section VIII.

1.2 SUBMITTALS

Submit the following to the Contracting Officer as specified in Section 01300, "Submittals."

1.2.1 SD-13 - Design Data

Provide under drain design showing ability to move water across the entire absorber cross-section at a uniform velocity and demonstrating that the design will allow all of the carbon to be easily removed in a timely manner during carbon transfer operations.

1.2.2 SD-15 - Equipment and Performance Data

- a. Provide information on the head loss through the system.
- b. Provide information on the granular activated carbon (GAC) supplied with the system to demonstrate the GAC's ability to remove contaminants.

1.2.3 SD-34 - Shop Drawings

Shop drawings for activated carbon filter and accessory equipment including principal dimensions and location of fittings. Data shall include weight and distribution of weight with the unit empty and filled with water.

1.2.4 SD-66 - Verification

Written verification on the fabricator's letterhead that surface preparation and coating application were performed in accordance with the coating system manufacturer's printed recommendations.

1.2.5 SD-70 - Certified Test Results

Submit test results, signed by the manufacturer, which indicate activated carbon filter is capable of specified pH, and concentration. Test on this model shall have been done within the last three years.

1.2.6 SD-77 - Manufacturer's Service Representative's Report and Certificate

Submit service representative's complete signed report of results of the inspection, operation, adjustments, and tests. Report shall include detailed descriptions of points inspected, tests and adjustments made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance. Include the manufacturer's certificate that equipment conforms to specified requirements and is ready for permanent operation and that nothing in installation will render manufacturer's warranty null and void.

1.2.7 SD-80 - Operation and Maintenance Manuals

Provide five complete sets of Data Package 4, Operation and Maintenance Manuals in accordance with Section 01730, "Operation and Maintenance Data."

1.2.8 The Contracting Officer will review and approve submittals.

1.3 ACTIVATED CARBON ADSORBER CRITERIA

1.3.1 Application

The carbon adsorbers shall be used to remove toxic organics that may be present in the wastewater.

1.3.2 Wastewater Characteristics

The wastewater will have been pretreated by equalization and 25 um bag filters prior to being pumped to the carbon adsorbers. Estimated wastewater characteristics are as follows:

1.3.2.1 Treatment Plant No. 1

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	*
Phenol	*
Xylene	*
1,1 - Dichloroethylene	*
Toluene	*
1,1,1 - Trichloroethylene	*
Methyl Ethyl Ketone	2,000
Flow	25(gpm)
pH	5.0-10.0 (SU)

* Also suspected as being present.

1.3.2.2 Treatment Plant No. 2

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1-Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3-Dichlorobenzene	680
1,2-Dichlorobenzene	4,900
Flow	60 (gpm)
Phenol	146,000
pH	5.0-10.0 (su)

1.3.2.3 Treatment Plant No. 3

<u>Material</u>	<u>Concentration (ug/l)</u>
Toluene	5,500
1,1-Dichloroethylene	2,500
Methylene Chloride	85,000
1,1,1-Trichloroethane	68,000
Trichloroethylene	830
1,2-Dichloroethane	1,800
Flow	50 (gpm)
pH	5.0-10.0 (su)

1.3.3 Performance

The carbon filters shall be designed in conjunction with the air strippers (Treatment Plant Nos. 2 and 3) to remove 90 percent of the listed pollutants, see Section 11145 - "Air Stripping Columns."

1.4 DELIVERY, STORAGE, AND HANDLING MATERIALS

1.4.1 Delivery and Storage

Inspect materials delivered to site for damage; unload and store with minimum handling. Store materials on-site in enclosures or under protective coverings. Protect materials not suitable for outdoor storage to prevent damage during periods of inclement weather, including subfreezing temperatures, precipitation, and high winds. Store materials susceptible to deterioration by direct sunlight under cover and avoid damage due to high temperatures. Do not store materials directly on ground. If special precautions are required, prominently and legibly stencil instructions for such precautions on outside of equipment or its crating. Store and protect materials according to manufacturer recommendations.

1.4.2 Handling

Handle carbon filters in such a manner as to ensure delivery to final location in sound, undamaged condition. Take special care not to damage interior and exterior surfaces of carbon filters, and associated supports and pipe coatings or linings. Make satisfactory repairs to damaged material(s) at no cost to Government. Carry and do not drag materials. Handle carbon filters according to manufacturers information.

1.5 QUALITY ASSURANCE

1.5.1 Inspection

Examine each component of carbon filters for compliance with requirements specified in PART 2 - PRODUCTS. Redesign or modification of equipment to comply with specified requirements, or necessary redesign or modification following failure to meet specified requirements, shall receive particular attention for adequacy and suitability. This element of inspection shall encompass visual examinations and dimensional measurements. Noncompliance with specified requirements, or presence of one or more defects preventing or lessening maximum efficiency of separator operation, shall constitute cause for rejection.

PART 2 - PRODUCTS

2.1 Three carbon adsorption systems will be supplied as shown. All three systems will be by the same manufacturer. Each activated carbon filter system shall comprise a complete operating system, including, but not limited to the following:

2.1.1 Two downflow carbon filters, all required piping and valves and the initial supply of carbon for each adsorber.

2.1.1.1 The carbon filters shall be factory assembled and shipped attached to a prefabricated skid with all piping and controls.

2.1.1.2 Each adsorber unit shall be designed to hold 10,000 to 20,000 pounds of granular activated carbon as shown in the Carbon Column Schedules.

2.1.1.3 The internal under drain system shall be conically shaped with side slopes of a minimum of 45 degrees to aid in removal of spent carbon, and shall be designed to evenly distribute water flow without "Tunneling" occurring within the adsorber.

2.1.1.3.1 The under drain system shall be perforated and designed to retain the granular activated carbon while allowing the passage of water at a minimal head loss.

2.1.1.3.2 The under drain system shall be designed to evenly distribute the water flow to ensure complete use of all of the carbon.

2.1.1.4 Adsorber tanks shall include a manway for maintenance and inspection access.

2.1.1.5 Adsorber tanks shall include sampling ports on the influent and effluent sides of the tanks for ease of monitoring the performance of the carbon.

2.1.1.6 The under drain system shall be designed so that >99 percent of the spent carbon can be removed without requiring the tank to be opened.

2.1.1.7 The maximum pressure drop with the adsorbers operated in series shall be 20 psi.

2.1.2 All piping shall be provided, including:

2.1.2.1 Carbon discharge and fill piping, valves and fittings.

2.1.2.2 Vent and safety relief piping, vent piping shall be separated from other piping.

2.1.2.3 Piping, valves and fittings to operate the two carbon absorbers either independently, in series with the option of having either absorber as the lead absorber in the series, or in parallel.

2.1.2.4 Air distribution piping, valves, fittings, filters, pressure regulators and water piping, etc., for use of compressed air and water to transfer carbon from vessel to a standard truck trailer.

2.1.2.5 All piping shall be factory installed on a prefabricated skid prior to being shipped.

2.1.2.6 All piping supplied with the Activated Carbon Filter system shall be constructed of carbon steel. The piping, valves and fittings used in transferring carbon shall be polypropylene lined.

2.1.3 10,000 to 20,000 pounds of granular activated carbon shall be provided and installed with each absorber as shown on the equipment schedule. Carbon type shall be as specified below. A different type of carbon may be used upon approval.

2.1.3.1 Granular Activated Carbon Description

The liquid phase activated carbon shall be virgin, granular and manufactured from bituminous coal. The liquid phase activated carbon shall conform to the following specifications:

Iodine No. (minimum)	900
Abrasion No. (minimum)	75
Effective Size	0.8 - 0.9 mm
Screen Analysis	
on 8 mesh (maximum %)	15
through 30 mesh (maximum %)	4
Water Soluble Ash (maximum %)	1
Moisture, as packed (maximum %)	2
Phosphate (maximum %)	1

The vapor phase activated carbon shall be virgin, granular and manufactured from bituminous coal. The vapor phase carbon shall conform to the following specifications:

Iodine No. (minimum)	1,050
Carbon Tetrachloride Adsorption, Minimum, Weight %	60
Ash, Maximum %	8
Moisture (as packed), Maximum, %	2
Hardness Number, Minimum	90
Apparent Density (Bulk Density, Dense Packing), g/cc, Minimum	0.47
Screen Analysis	
on 6 mesh (maximum % retained)	5.0
on 16 mesh (maximum % retained)	5.0

The delivered activated carbon must be accompanied by an analysis sheet certifying compliance with the specifications.

2.2 Carbon transfer shall be by pneumatic slurry truck.

2.2.1 Water piping, valves, fittings, and an eductor, suitable for connection to the nonpotable water supply must be supplied with the carbon adsorbers for use during loading and unloading.

2.2.2 Carbon transfer piping shall be fitted with four inch quick-disconnect coupling to facilitate loading and unloading of carbon from standard truck trailers.

2.3 The manufacturer of the carbon adsorption system must also manufacture the specified carbon and must be able to remove and reactivate the spent carbon from the adsorber and supply and load fresh carbon into the adsorber on a fee basis. The manufacturer shall provide an estimated price, with their equipment bid, for the removal, transport and reactivation of the spent carbon. Separate prices shall be provided for the liquid phase and vapor phase carbons.

2.3.1 The manufacturer's carbon reactivation facility must have a fully authorized RCRA Part B Permit.

2.3.2 The manufacturer of the carbon adsorption systems must also manufacture and supply the air stripping systems specified in Section 11145, "Air Stripping Columns."

2.4 PAINTING

2.4.1 For exterior coating see Section 11000, "Process Equipment General Requirements."

2.4.2 Vessel interiors shall be shop coated as follows:

2.4.2.1 All welds and any other sharp edges shall be ground smooth, and all imperfections such as skip welds, delaminations, scabs, silvers and slag corrected prior to abrasive blasting. All surfaces are to be degreased prior to sandblasting. The adsorber internal surface shall be blasted to a white metal surface (SSPC-SP5) to provide an anchor pattern in the metal corresponding to approximately 20 to 25 percent of the film thickness of the coating.

2.4.2.2 Immediately after sandblasting, the interior surface shall be coated with the first multi-pass spray coat of light gray Plasite 7156 HAR Abrasion-Resistant Protective Coating per manufacturer's instructions to produce a 5 to 6 mil dry film thickness. Similar coatings may be used with Engineer's approval.

2.4.2.3 The second multi-pass spray coat shall be applied per manufacturer's instructions to produce a finished coating of 10 to 12 mil dry film thickness for immersion service.

PART 3 - EXECUTION

3.1 INSTALLATION

3.1.1 The activated carbon filters and accessory equipment shall be installed as indicated and as recommended by the manufacturer.

3.1.2 Equipment delivered to the site in advance of installation shall be stored per the manufacturer's requirements.

3.1.3 Make all connections required to make the Activated Carbon Filter system fully operational.

3.2 FIELD INSPECTION SERVICES

3.2.1 As specified in Section 01400, "Contractor Quality Control (CQC) System."

3.2.2 Inspection

See Article 1.5.1 of this Section.

3.2.3 Field Representatives

Provide manufacturers field representative for technical direction of start-up and testing of activated carbon columns and for training of operating personnel.

3.2.4 Start-Up and Testing

Manufacturer's field representative shall inspect and test unit and certify that the installation has been performed in accordance with manufacturer's recommendations and that the system is ready for operation by others. Inspection shall consider, but not be limited to, the following:

- a. Soundness (without cracked or otherwise damaged parts).
- b. Completeness in all details, as specified.
- c. Correctness of settling alignment, set points and relative arrangement of each component.

3.2.5 Hydraulically test all tanks and fittings both before shipping the carbon filters and after installing the carbon filters to ensure that no leakage occurs.

3.2.6 Test under operating conditions to ensure that the carbon filters operate as specified.

-- End of Section --

DEPARTMENT OF HEALTH, WELFARE
& BIO-ENVIRONMENTAL SERVICES
Air Resources Division



ARD COMPLIANCE TESTING NOTICE

February 5, 1991

FACILITY: Naval Air Station, Jax.

SOURCE(S): Jet Engine Test Cells 11&12 and Kemen Test Cells A&B

PERMIT NUMBER(S): AO16-117126

TESTING ANNIVERSARY DATE: 03/01/86

Dear Mr. Wallmeyer:

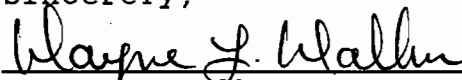
This is to inform you that according to our records, NAS, Jax. is due to conduct air pollution control compliance testing in the near future. Please review the referenced air pollution permit(s) for the pollutant type, methodology and special requirements for all the specified stack tests.

The Air Resources Division (ARD) must be notified by letter or telephone (904-630-3666), at least fifteen (15) calendar days prior to any required compliance testing.

If for any reason the required test(s) cannot be conducted within one month after the above captioned testing anniversary date, ARD must be contacted and advised of the situation.

Failure to schedule a required compliance test within one month after the source(s)' testing anniversary date may result in the assessment of a fine.

Sincerely,


Wayne L. Walker
Engineering Technician



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

\$200 pd.
2-21-91
Recpt. # 151248

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



AC 16-192 940

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES
Minor VOC's from Air Stripper/

SOURCE TYPE: Carboh Column ☒ New¹ ☐ Existing¹

APPLICATION TYPE: ☒ Construction ☐ Operation ☐ Modification

COMPANY NAME: US Navy (Naval Air Station, Jacksonville, FL) COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime vapor phase
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Bldg 3. carbon adsorber

SOURCE LOCATION: Street Wright Street (Naval Air Station) City Jacksonville

UTM: East 435.3 North 3344.1

Latitude 30 ° 13 ' 17 "N Longitude 81 ° 40 ' 12 "W

APPLICANT NAME AND TITLE: * NAVAL AIR STATION JACKSONVILLE

APPLICANT ADDRESS: JACKSONVILLE, FLORIDA

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT¹

I am the undersigned owner or ^{Commanding Officer} ~~authorized representative~~ of Naval Air Station, Jacksonville

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: Kevin F. Delaney

KEVIN F. DELANEY, CAPT, USN, COMMANDING OFFICER
Name and Title (Please type)

Date: 20 FEB 1991 Telephone No. 904-772-2334

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:

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

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

Signed Woodrow W. Allen

Woodrow W. Allen, P.E.

Name (Please Type)

Burns & McDonnell Engineering Company

Company Name (Please Type)

4800 E. 63rd St. PO Box 419173, Kansas City, Mo. 64141-6173

Mailing Address (Please Type)

Florida Registration No. 32381 Date: 10/31/90 Telephone No. 816-822-3169

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.

Wastewater from parts cleaning and plating operation is treated to oxidize cyanide,
remove oil, and transfer volatile organics from water phase to the vapor phase. The
vapor phase is passed through activated carbon to adsorb the organics.

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

Start of Construction 1/91 Completion of Construction 2/92

- 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.)

The estimated cost of the vapor phase carbon adsorber and carbon is \$50,000.

[Handwritten signature]

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

None associated with emissions.

DT16-158162 Domestic Wastewater Treatment Plant Temporary Operating Permit includes
a compliance schedule.

E. Requested permitted equipment operating time: hrs/day 8 ; days/wk 7 ; wks/yr 52 ;
if power plant, hrs/yr _____; if seasonal, describe: Not applicable

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

1. Is this source in a non-attainment area for a particular pollutant? Yes
 - a. If yes, has "offset" been applied? Not applicable
 - b. If yes, has "Lowest Achievable Emission Rate" been applied? Not applicable
 - c. If yes, list non-attainment pollutants. ozone
2. Does best available control technology (BACT) apply to this source? Not applicable
If yes, see Section VI.
3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. Not applicable
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Not applicable
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? Not applicable
- H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? Not applicable
 - a. If yes, for what pollutants? _____
 - b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

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

New source, does not fall into any specific categories under RACT. Therefore, 17-2.620 applies.

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		
Solvents*	Toluene	Varies	Unknown	Not on flow diagram
	aliphatic hydrocarbons		Varies considerably	Flow diagram starts with
	Isobutyl acetate			wastewater flow after
	Chlorinated aliphatics and	defins		generation

* Amount, constituents, and concentrations are variable.

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

1. Total Process Input Rate (lbs/hr): Cannot be determined

2. Product Weight (lbs/hr): varies

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

Name of Contaminant	Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Toluene	0.014	0.019		No specific	Not applicable		Out of
1,1-Dichloro- ethylene	0.006	0.009		standards			adsorption
Methylene chloride	0.204	0.299					column
1,1,1-Trichlo- roethane	0.167	0.244					
Trichloro- ethylene	0.002	0.003					

¹See Section V, Item 2.

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

³Calculated from operating rate and applicable standard.

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

Name of Contaminant	Emission ¹		Allowed ² Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
1,2-Dichloroethane	0.004	0.006					
Total (VOC)	0.397	0.580	1400T/yr*				

¹See Section V, Item 2.

* 17-2.510(5)(b) Table 510-1

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

³Calculated from operating rate and applicable standard.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Calgon-Vapor Poc 10 (equipment has not been purchased)	VOC	90%	Not applicable	Manufacturer's experience based on adsorptive capacity of carbon

Carbon reactor is monitored so that when contaminants are detected in the effluent,
E. Fuels the carbon is changed out. Size of reactor based on desired time between change outs.

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

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

Fuel Analysis:

Percent Sulfur: N/A 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.

Spent carbon will be reactivated at a RCRA permitted facility through a service contract
 Calgon company manufacturer of carbon, for example has such a facility in Pittsburgh, PA.
 Carbon will be reactivated rather than disposed

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

Stack Height: 11 ft. Stack Diameter: 7-inch **xx**
 Gas Flow Rate: 525 ACFM 500 DSCFM Gas Exit Temperature: 90 °F.
 Water Vapor Content: 70% % Velocity: 1800 FPM **FR**

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.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

Stack Height: _____ ft. Stack 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.): _____

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

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

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

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

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

☐ Yes ☒ No

Contaminant

Rate or Concentration

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

☐ Yes ☐ No

Contaminant

Rate or Concentration

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

Contaminant

Rate or Concentration

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

1. Control Device/System:

2. Operating Principles:

3. Efficiency:*

4. Capital Costs:

*Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

Contaminant

Rate or Concentration

10. Stack Parameters

a. Height: ft. b. Diameter: ft.
c. Flow Rate: ACFM d. Temperature: °F.
e. Velocity: FPS

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

1.

a. Control Device: b. Operating Principles:
c. Efficiency:¹ d. Capital Cost:
e. Useful Life: f. Operating Cost:
g. Energy:² h. Maintenance Cost:
i. Availability of construction materials and process chemicals:
j. Applicability to manufacturing processes:
k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device: b. Operating Principles:
c. Efficiency:¹ d. Capital Cost:
e. Useful Life: f. Operating Cost:
g. Energy:² h. Maintenance Cost:
i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

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

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

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

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

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

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no. sites _____ TSP _____ () SO₂* _____ Wind spd/dir

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

Other data recorded _____

Attach all data or statistical summaries to this application.

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

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? ☐ Yes ☐ No
- b. Was instrumentation calibrated in accordance with Department procedures?
☐ Yes ☐ No ☐ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year
2. Surface data obtained from (location) _____
3. Upper air (mixing height) data obtained from (location) _____
4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.
2. _____ Modified? If yes, attach description.
3. _____ Modified? If yes, attach description.
4. _____ Modified? If yes, attach description.

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

D. Applicants Maximum Allowable Emission Data

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

E. Emission Data Used in Modeling

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

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

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

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

SECTION V - SUPPLEMENTAL REQUIREMENTS

BUILDING 3

Wastewater Generation Description:

Plating, cleaning, and metal surfacing processes produce three separate wastewater streams: a cyanide rinse water, a chrome rinse water, and an acid/alkali stream. The cyanide is destroyed before reaching the equalization basin.

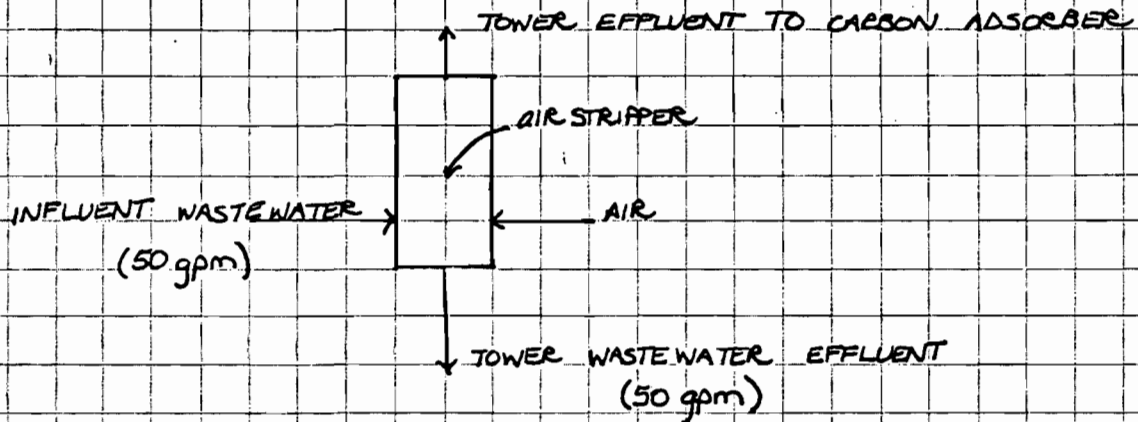
Influent Wastewater Characteristics:

<u>Material</u>	<u>Concentration (ug/l)</u>
Toluene	5,500
1,1 - Dichloroethylene	2,500
Methylene Chloride	85,000
1,1,1 - Trichloroethane	68,000
Trichloroethylene	830
1,2 - Dichloroethane	1,800
Flow	50 (gpm)
pH	3.0-10.0 (su)
Temperature	100 (°F)

* * * * *

SECTION V SUPPLEMENTAL REQUIREMENTS

BLDG 3



CONTAMINANT	STRIPPER INFLUENT (mg/min)	WATER EFFLUENT (mg/min)	AIR EFFLUENT (mg/min)
TOUENE	1,040	25	1017
1,2 DCE	475	5	468
MCCLZ	16,065	603	15462
1,1,1 TCA	12,852	206	12646
TCE	157	3	154
1,2 DCA	340	45	295
			<u>30,042</u>

WATER EFFLUENT CONCENTRATIONS PROVIDED BY CALCON WHO DESIGNED
AIR STRIPPER

CARBON ADSORBER TO REMOVE AT LEAST 90% OF VOLATILES

EMISSIONS = 3004 mg/min

EMISSIONS = $3004 \frac{\text{mg}}{\text{min}} \times 60 \frac{\text{min}}{\text{hr}} \times 8 \frac{\text{hr}}{\text{day}} \times 365 \frac{\text{day}}{\text{yr}} \div 453,593 \frac{\text{mg}}{\text{lb}}$

EMISSIONS = 1,160. lb
yr

BEST AVAILABLE COPY

→ Naval Aviation Depot, NAS ←
Jacksonville, Florida

WASTE TREATMENT BLDG. NO. 2

CONTRACTOR LAYDOWN

780 SHOP 0.3111 & 0.3113

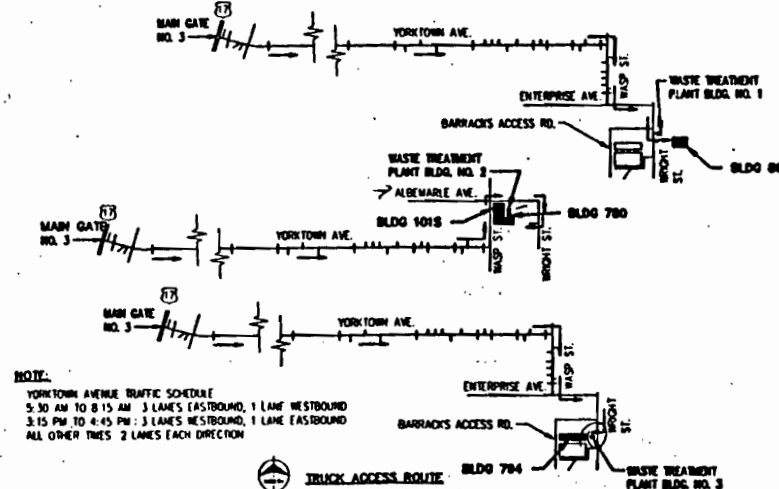
WASTE TREATMENT BLDG. NO. 1

CONTRACTOR LAYDOWN


WASTE TREATMENT BLDG. NO. 3

LOCATION MAP NOT TO SCALE

Compass rose indicating North (N) and South (S).

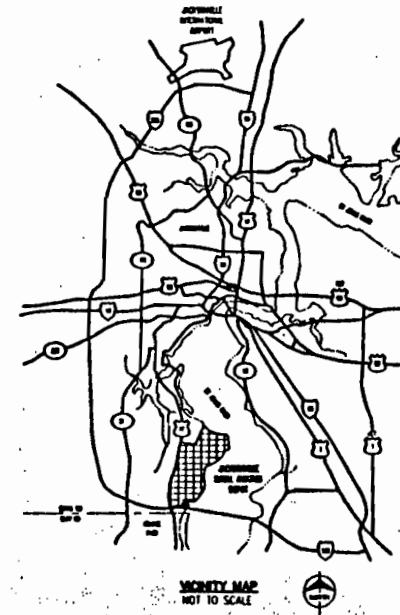


YORKTOWN AVENUE TRAFFIC SCHEDULE
5:30 AM TO 8:15 AM 3 LANES EASTBOUND, 1 LANE WESTBOUND
3:15 PM TO 4:45 PM 3 LANES WESTBOUND, 1 LANE EASTBOUND
ALL OTHER TIMES 2 LANES EACH DIRECTION



TRUCK ACCESS ROUTE
NOT TO SCALE

100% DESIGN

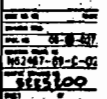


PROXIMITY MAP
NOT TO SCALE

[illegible]




INDEX
 HAZARDOUS WASTE MINIMIZATION
 WASTE TREATMENT PLANT BUILDING NO. 1 & WASTE MINIMIZATION IN BUILDING NO. 1
 P. 6 - SHEET NO. 1




09-11-1990 11:29

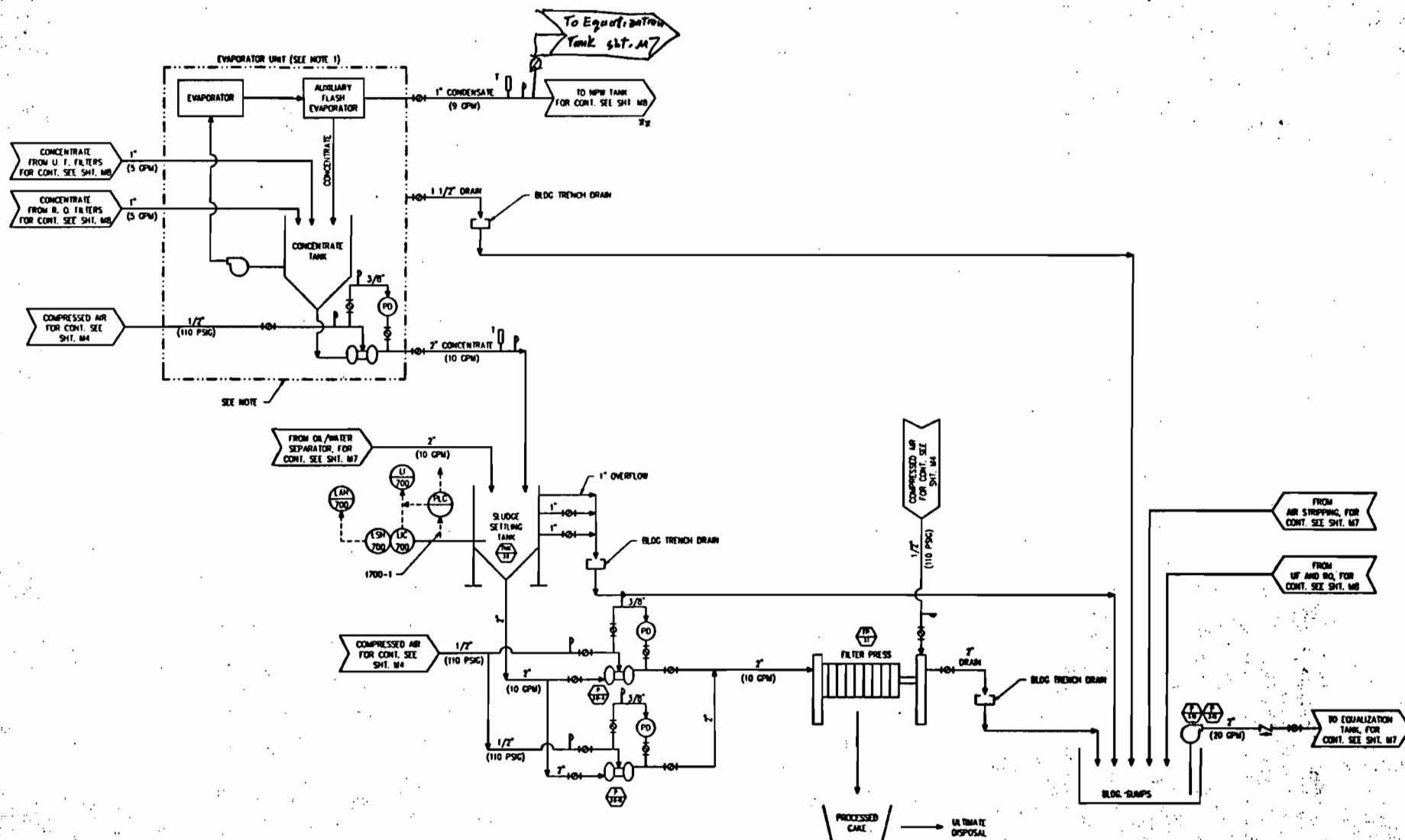


		DATE: 04-26-82 BY: 04-26-82 04-26-82 04-26-82	
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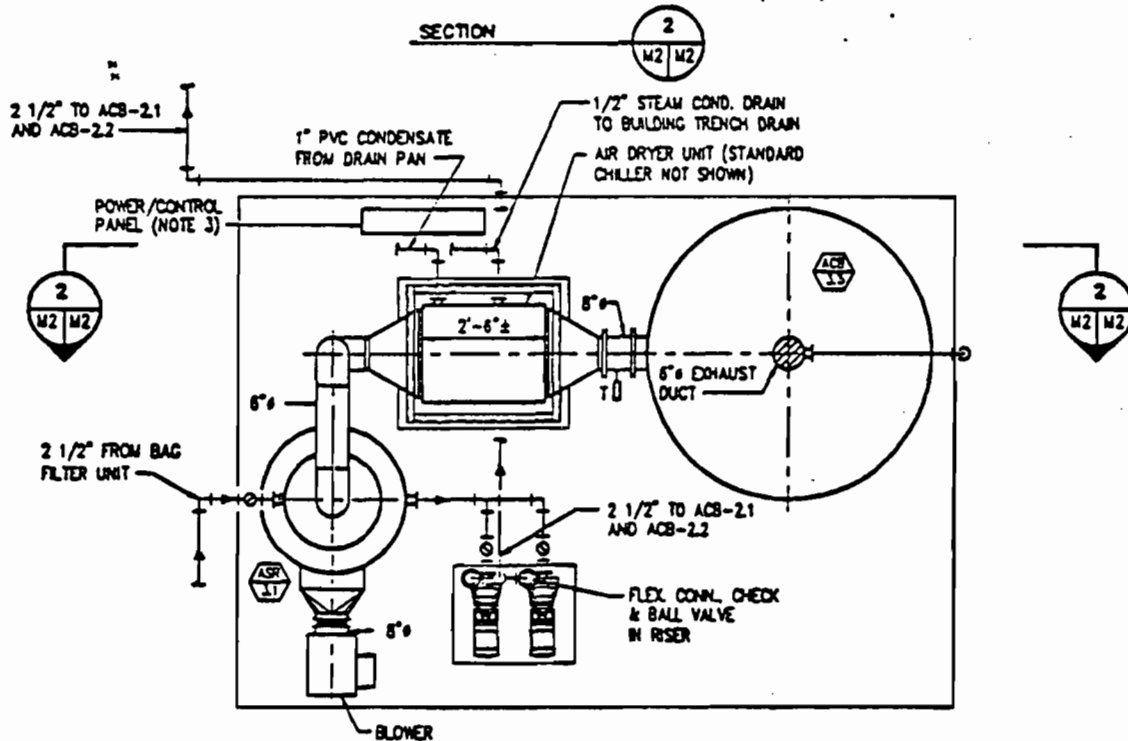
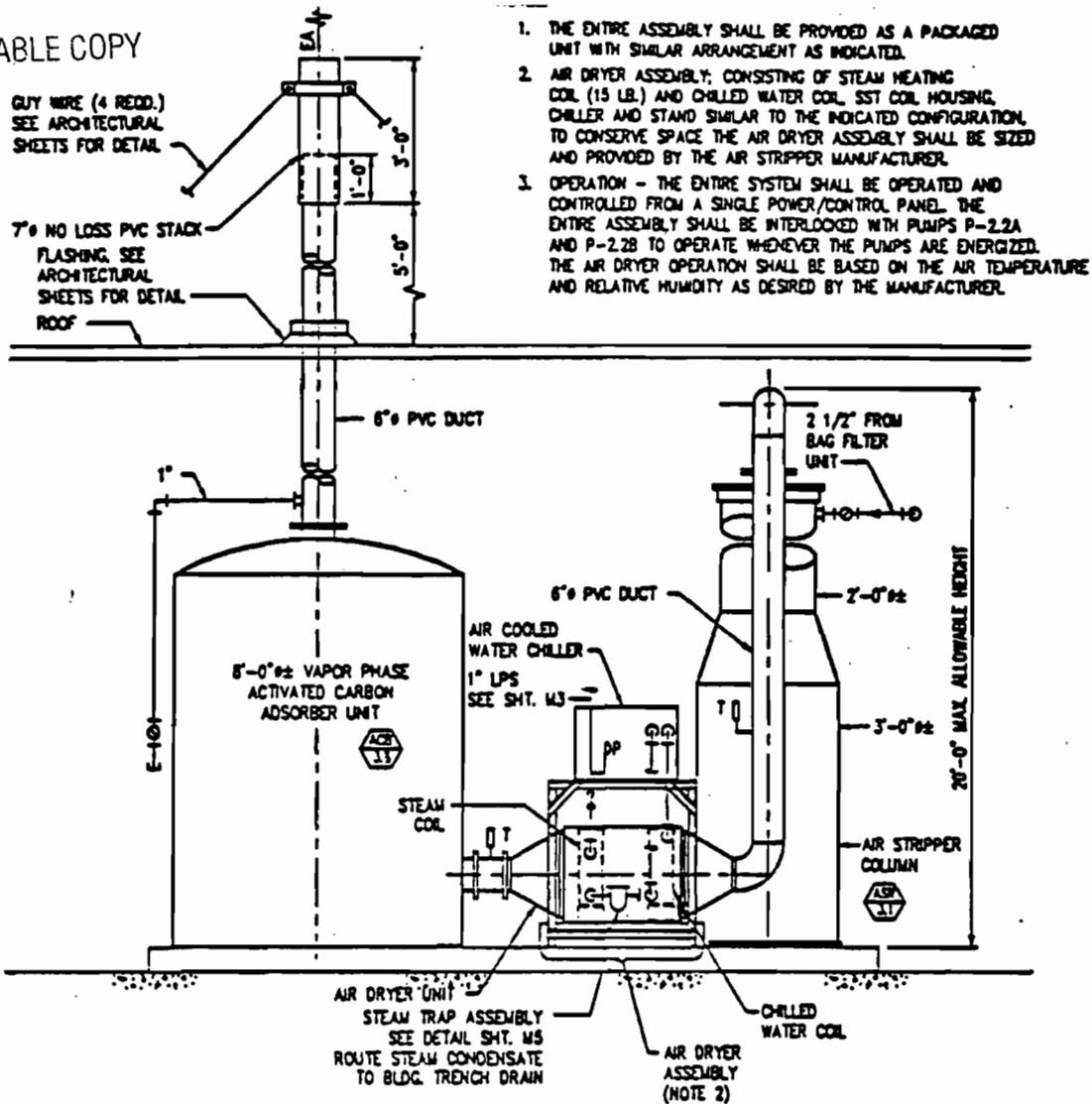
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WASTE TREATMENT PLANT BUILDING NO. 3 - P & ID - SHEET NO. 4

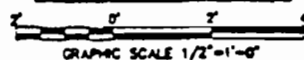
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CHECKED BY B. J. H. H. H.	DATE 11-11-1984	BY B. J. H. H. H.
APPROVED BY B. J. H. H. H.	DATE 11-11-1984	BY B. J. H. H. H.
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PLAN

AIR STRIPPING UNIT DETAIL





INDUSTRIAL AIR PURIFICATION SYSTEMS

Calgon Carbon Corporation's industrial air purification systems are pre-engineered granular activated carbon adsorption systems. Typical applications are found in many industries where there is a need to control volatile organic compound emissions, remove toxic compounds, control odors, protect personnel or minimize equipment corrosion. These modular units are designed to provide maximum economy, ease of installation and operation, and to be used in situations when the granular activated carbon is replaced rather than regenerated in place.

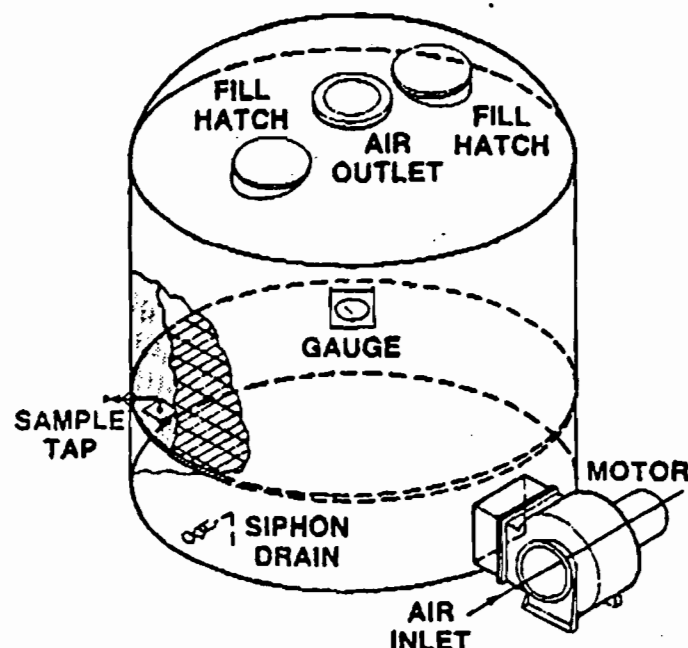
DESCRIPTION

Calgon Carbon Corporation air purification systems consist of carbon steel adsorbers, with fan and motor assembly optional. The systems can also be designed with protective linings and 316 stainless steel components for use in corrosive atmospheres. They are available in four different sizes to handle air flows up to 10,000 cfm operating at ambient conditions. To handle larger flows, multiple units may be installed in parallel. The adsorbers can accommodate carbon bed depths of up to five feet, typical bed depth is three to three and one-half feet.

The Calgon Carbon Corporation industrial air purification systems are delivered ready for quick and easy installation. The items required for operation are electrical connections to fan motor (if fan is provided with system), and appropriate foundations, and ductwork to deliver contaminated air to the adsorber inlet. During operation, the contaminated air is driven upflow through the carbon bed. The undesirable compounds are removed and the treated air is vented to the atmosphere. When the contaminant begins to appear in the treated air stream, spent carbon is removed and replaced with fresh carbon.

FEATURES AND BENEFITS

- Effective removal of contaminants
- Economical
- Pre-engineered
- Easy installation
- Low maintenance requirements
- Available in a wide range of flows
- Built in flow control provided with fan



STANDARD SIZING CHART

Nominal System Size, Diameter	6 ft	8 ft	10 ft	12 ft
Nominal Capacity, CFM	1860	3500	5680	8500
Bed Area, sq. ft.	28.3	50.3	78.5	113.1
Nominal Superficial Velocity, ft./min.	66	70	72	75
Nominal Carbon Amount, lbs.	3000	5000	8000	11000
Nominal Carbon Bed Depth, ft.	3.5	3.3	3.4	3.2
Nominal Fan HP	7.5	10	15	25

CAUTION

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low-oxygen spaces should be followed, including all applicable Federal and State requirements. For additional details see Calgon Carbon Bulletin No. 198, Safety Considerations for Air Purification Systems.

SECTION 11145

AIR STRIPPING COLUMNS

PART 1 - GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent required. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

B15.1 1984 Safety Standard for Mechanical Power
Transmission Apparatus

AMERICAN WELDING SOCIETY (AWS)

D1.1 1989 Structural Welding Code, Steel

ANTIFRICTION BEARING MANUFACTURERS ASSOCIATED (AFBMA)

AFBMA 9 1978 Load Ratings and Fatigue Life for Ball
Bearings

AFBMA 11 1978 Load Ratings and Fatigue Life for Roller
Bearings

"

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D-3299 1988 Filament-Wound Glass-Fiber-Reinforced
Thermoset Resin Chemical-Resistant Tanks

1.2 SUBMITTALS

Submit the following to the Contracting Officer in accordance with Section 01300, "Submittals."

1.2.1 SD-10 Design Data

Submit calculations required by paragraph entitled "Performance."

1.2.2 SD-31 Design Drawings

Submit drawings for the air stripping columns and accessory equipment including principal dimensions and locations of fittings, electrical connections and remote monitoring.

1.2.3 SD-70 Test Reports

Submit test results, signed by the manufacturer, which indicate the air stripping system is capable of meeting the specified effluent levels.

1.2.4 SD-77 Field Test Reports

Submit service representatives' complete signed report of results of the inspection, operation, adjustments and tests. Report shall include detailed descriptions of points inspected, tests and adjustments made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance. Report shall document whether inspections, operations and tests were acceptable or not. For unacceptable items, describe corrective action taken or recommended. Include the manufacturer's certificate that equipment is ready for permanent operation and that nothing in installation will render manufacturer's warranty null and void.

1.2.5 SD-80 Operation and Maintenance Manuals

Provide five complete sets of Data Package 4, Operation and Maintenance Manuals in accordance with Section 01730, "Operation and Maintenance Data."

1.3 DELIVERY, STORAGE, AND HANDLING MATERIALS

1.3.1 Delivery and Storage

Inspect materials delivered to site for damage; unload and store with minimum handling. Store materials on-site in enclosures or under protective coverings. Protect materials not suitable for outdoor storage to prevent damage during periods of inclement weather, including subfreezing temperatures, precipitation, and high winds. Store materials susceptible to deterioration by direct sunlight under cover and avoid damage due to high temperatures. Do not store materials directly on ground. If special precautions are required, prominently and legibly stencil instructions for such precautions on outside of equipment or its crating.

1.3.2 Handling

Handle equipment in such a manner as to ensure delivery to final location in sound, undamaged condition. Make satisfactory repairs to damaged material(s) at no cost to Government. Carry and do not drag materials.

1.4 QUALITY ASSURANCE

1.4.1 Guarantee

The Air Stripping Unit Manufacturer must guarantee that the installed air stripping system produces an effluent which meets the requirements of this specification. The effluent quality exiting the air stripping unit must be equal to or better than the specification requirement.

1.4.2 Qualification of Manufacturer

Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful installations acceptable to the Contracting Officer.

1.4.3 Influent Characteristics

The influent to be stripped shall possess the following minimum characteristics:

1.4.3.1 Treatment Plant No. 2:

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1 - Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3 - Dichlorobenzene	680
1,2 - Dichlorobenzene	4,900
Flow	60 (gpm)
pH	3.0-10.0 (su)
Temperature	100 (°F)

1.4.3.2 Treatment Plant No. 3:

<u>Material</u>	<u>Concentration (ug/l)</u>
Toluene	5,500
1,1 - Dichloroethylene	2,500
Methylene Chloride	85,000
1,1,1 - Trichloroethane	68,000
Trichloroethylene	830
1,2 - Dichloroethane	1,800
Flow	50 (gpm)
pH	3.0-10.0 (su)
Temperature	100 (°F)

1.4.4 Performance

The air stripping units shall, in conjunction with the carbon adsorption units specified in Section 11150, "Activated Carbon Filters" remove 90 percent of the listed materials.

1.5 FACTORY TESTS

1.5.1 Operate the air stripper under simulated factory conditions for a minimum of one hour.

1.5.2 Insure that the air stripper operates as specified.

PART 2 - PRODUCTS

2.1 GENERAL

2.1.1 Provide two air stripping units, one each for Treatment Plant No. 2 and Treatment Plant No. 3.

2.1.2 The air stripping units shall be manufactured by the same manufacturer that manufactures the activated carbon adsorbers specified in Section 11150, "Activated Carbon Filters."

2.1.3 Each of the air stripping units shall include a stripping tower filled with high efficiency packing, mist eliminator, pumping sump, blowers, controls, transfer pumps to transfer the air stripping unit effluent to the carbon adsorption unit, all interconnecting piping and ductwork, and a carbon adsorber to adsorb the pollutants from the stripper exhaust.

2.2 STRIPPING TOWER

2.2.1 Wastewater shall be introduced to the top of the stripping tower and air shall be blown into the bottom of the stripping tower.

2.2.2 Each tower shall be filled with high efficiency packing to enhance air to water contact.

2.2.3 The tower shall utilize an FRP shell, designed in accordance with ASTM-D3299 polypropylene packing and aluminum ladders.

2.2.4 Towers shall be 20-foot high, maximum, 2-foot diameter minimum with a minimum packing depth of 15 feet.

2.2.5 The packing support shall be constructed of the same material as the tower and shall be constructed with a minimum of 80-percent free space.

2.2.6 The packing shall be designed for maximum air to water contact and shall be of the Pall ring design. The packing shall be constructed of polypropylene or an approved equal.

2.2.7 The inlet distributor shall either be a single full cone spray type or an orifice type distributor.

2.2.8 A mist eliminator shall be provided at the top of the tower. The unit eliminator shall be a 6-inch thick porous mesh pad constructed of monofilament polypropylene.

2.3 BLOWERS

2.3.1 Two blowers shall be included for each stripping tower to supply air to remove the materials from the wastewater.

2.3.2 The quantity of air required shall be determined by the air stripping column manufacturer based on the influent and effluent data in this section;

but, at a minimum, the air quantity listed in the air stripper schedule shall be used.

2.3.3 Two blowers shall be provided for each stripping tower. Each blower shall be sized to provide 100 percent of the air required for the stripping tower.

2.3.3.1 Blowers shall either be direct or V-belt drive.

2.3.4 Blowers shall be constructed in accordance with ASTM B15.1-72 and will be powered by TEFC 460V 3-phase 60 Hz motors.

2.4 TRANSFER PUMPS

2.4.1 Two transfer pumps shall be included with each stripping tower to pump the effluent from the sump in the base of the stripping tower to the top of the carbon adsorption units.

2.4.2 Wastewater flow rates shall be as shown.

2.4.3 Pipe size shall be as shown.

2.4.4 Pump capacity shall be determined by the air stripper manufacturer.

2.4.5 Each pump shall be designed for 100 percent capacity.

2.4.6 Pumps shall be designed in accordance with Section 11130 - "Pumps."

2.4.7 Pumps shall be started and stopped automatically by level controls in the stripping tower sumps.

2.5 CARBON ADSORBER

2.5.1 Each stripping tower shall include one carbon adsorber to remove the materials from the air stream that were stripped from the wastewater stream.

2.5.2 At least 90 percent of the pollutants in the air stream shall be removed by the carbon.

2.5.3 The carbon adsorber will be designed in accordance with the applicable portions of Section 11150, "Carbon Adsorbers."

2.5.4 The size of the carbon adsorber shall be as shown in the Carbon Column Schedule.

2.5.5 Carbon type shall be as recommended by the carbon manufacturer.

2.6 CONTROLS

2.6.1 The air stripping units shall include all wiring, controls, motor starters and control panels, in accordance with Division 16 - ELECTRICAL, needed for complete operation.

2.6.2 The control panel shall include hand-off-auto switches for the blowers and pump and blower operating lights and alarm condition lights (blower or pump shut-down).

2.6.3 The control panel shall include contacts to send unit operating and alarm signals back to the main control panel.

2.7 Each air stripping unit shall be factory assembled on a steel skid and shall include all necessary piping, valves, controls and ducts.

2.7.1 Piping and valves shall be as specified in Section 15401, "Process Piping."

2.8 AIR DRYER

2.8.1 An air dryer system consisting of a chiller, with condensate removal, and a heater, designed to reduce the relative humidity of the air below 50 percent shall be included with each air stripping unit.

2.9 PAINTING

See Section 11000, "Process Equipment General Requirements."

2.10 SPARE PARTS

2.10.1 The air stripping unit manufacturer shall furnish a recommended spare parts list.

PART 3 - EXECUTION

3.1 INSTALLATION

System shall be installed in accordance with manufacturer's recommendations.

3.2 INSPECTION

Examine each component of system for compliance with requirements specified in Part 2, Products. Redesign or modification of equipment to comply with specified requirements, or necessary redesign or modification following failure to meet specified requirements, shall receive particular attention for adequacy and suitability. This element of inspection shall encompass visual examinations and dimensional measurements. Noncompliance with specified requirements, or presence of one or more defects preventing or lessening maximum efficiency of air stripper system operation shall constitute cause for rejection.

3.3 FIELD QUALITY CONTROL

3.3.1 Field Hydrostatic Test

After system has been leveled and secured, hydrostatically test unit (for no leakage) for an additional 8 hours by filling with potable water.

3.4 TESTS

After hydrostatic test has been successfully completed and unit has been properly connected to influent and effluent piping, allow influent mixture previously described in paragraph titled "Quality Assurance" to flow into the system filled with potable water. Optimize the unit within five working days.

3.4.1 Test for Contaminants

Test effluents for contaminants described in paragraph "Performance." Test shall be performed by an independent Certified Testing Laboratory.

3.4.2 Analytical Method

Test and sample preservation methods for test contaminants shall be in accordance with the latest revisions of APHA AWWA, WPCF Standard Method for Examination of Water and Wastewater, EPA MCAWW, EPA Methods for Chemical Analysis of Water and Wastes or those substitute methods approved by the governing regulatory agencies having jurisdiction.

3.5 TEST CRITERIA

If the system does not meet requirements of this specification, the unit may be rejected. If the unit is not operating at design efficiency five days after installation, Government may reject system. In the event Government rejects unit, Contractor shall remove and replace defective component(s) or system with acceptable system or component(s).

3.6 PREPARATIONAL TEST

A services representative from company manufacturing or supplying system shall inspect, operate and test system before it is operated.

--End of Section--

SECTION 11150

ACTIVATED CARBON FILTERS

PART 1 - GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

B16.5 1988 Pipe Flanges and Flanged Fittings

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A36 1988 Structural Steel

A53 1988 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

A181 1987 Forgings, Carbon Steel for General Purpose Piping

A285 1982 (1987) Low and Intermediate Steel Plates for Pressure Vessels

AMERICAN WELDING SOCIETY (AWS)

D1.1 1989 Structural Welding Code, Steel

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

SP-1 1985 Solvent Cleaning

SP-5 1985 White Metal Blast Cleaning

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

1989 Boiler and Pressure Vessel Code Section VIII.

1.2 SUBMITTALS

Submit the following to the Contracting Officer as specified in Section 01300, "Submittals."

1.2.1 SD-13 - Design Data

Provide under drain design showing ability to move water across the entire absorber cross-section at a uniform velocity and demonstrating that the design will allow all of the carbon to be easily removed in a timely manner during carbon transfer operations.

1.2.2 SD-15 - Equipment and Performance Data

- a. Provide information on the head loss through the system.
- b. Provide information on the granular activated carbon (GAC) supplied with the system to demonstrate the GAC's ability to remove contaminants.

1.2.3 SD-34 - Shop Drawings

Shop drawings for activated carbon filter and accessory equipment including principal dimensions and location of fittings. Data shall include weight and distribution of weight with the unit empty and filled with water.

1.2.4 SD-66 - Verification

Written verification on the fabricator's letterhead that surface preparation and coating application were performed in accordance with the coating system manufacturer's printed recommendations.

1.2.5 SD-70 - Certified Test Results

Submit test results, signed by the manufacturer, which indicate activated carbon filter is capable of specified pH, and concentration. Test on this model shall have been done within the last three years.

1.2.6 SD-77 - Manufacturer's Service Representative's Report and Certificate

Submit service representative's complete signed report of results of the inspection, operation, adjustments, and tests. Report shall include detailed descriptions of points inspected, tests and adjustments made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance. Include the manufacturer's certificate that equipment conforms to specified requirements and is ready for permanent operation and that nothing in installation will render manufacturer's warranty null and void.

1.2.7 SD-80 - Operation and Maintenance Manuals

Provide five complete sets of Data Package 4, Operation and Maintenance Manuals in accordance with Section 01730, "Operation and Maintenance Data."

1.2.8 The Contracting Officer will review and approve submittals.

1.3 ACTIVATED CARBON ADSORBER CRITERIA

1.3.1 Application

The carbon adsorbers shall be used to remove toxic organics that may be present in the wastewater.

1.3.2 Wastewater Characteristics

The wastewater will have been pretreated by equalization and 25 um bag filters prior to being pumped to the carbon adsorbers. Estimated wastewater characteristics are as follows:

1.3.2.1 Treatment Plant No. 1

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	*
Phenol	*
Xylene	*
1,1 - Dichloroethylene	*
Toluene	*
1,1,1 - Trichloroethylene	*
Methyl Ethyl Ketone	2,000
Flow	25(gpm)
pH	5.0-10.0 (SU)

* Also suspected as being present.

1.3.2.2 Treatment Plant No. 2

<u>Material</u>	<u>Concentration (ug/l)</u>
Methylene Chloride	170,000
Methyl Ethyl Ketone	46,000
1,1,1-Trichloroethane	24,000
Carbon Tetrachloride	24,000
Trichloroethene	730
Toluene	860
1,3-Dichlorobenzene	680
1,2-Dichlorobenzene	4,900
Flow	60 (gpm)
Phenol	146,000
pH	5.0-10.0 (su)

1.3.2.3 Treatment Plant No. 3

<u>Material</u>	<u>Concentration (ug/l)</u>
Toluene	5,500
1,1-Dichloroethylene	2,500
Methylene Chloride	85,000
1,1,1-Trichloroethane	68,000
Trichloroethylene	830
1,2-Dichloroethane	1,800
Flow	50 (gpm)
pH	5.0-10.0 (su)

1.3.3 Performance

The carbon filters shall be designed in conjunction with the air strippers (Treatment Plant Nos. 2 and 3) to remove 90 percent of the listed pollutants, see Section 11145 - "Air Stripping Columns."

1.4 DELIVERY, STORAGE, AND HANDLING MATERIALS

1.4.1 Delivery and Storage

Inspect materials delivered to site for damage; unload and store with minimum handling. Store materials on-site in enclosures or under protective coverings. Protect materials not suitable for outdoor storage to prevent damage during periods of inclement weather, including subfreezing temperatures, precipitation, and high winds. Store materials susceptible to deterioration by direct sunlight under cover and avoid damage due to high temperatures. Do not store materials directly on ground. If special precautions are required, prominently and legibly stencil instructions for such precautions on outside of equipment or its crating. Store and protect materials according to manufacturer recommendations.

1.4.2 Handling

Handle carbon filters in such a manner as to ensure delivery to final location in sound, undamaged condition. Take special care not to damage interior and exterior surfaces of carbon filters, and associated supports and pipe coatings or linings. Make satisfactory repairs to damaged material(s) at no cost to Government. Carry and do not drag materials. Handle carbon filters according to manufacturers information.

1.5 QUALITY ASSURANCE

1.5.1 Inspection

Examine each component of carbon filters for compliance with requirements specified in PART 2 - PRODUCTS. Redesign or modification of equipment to comply with specified requirements, or necessary redesign or modification following failure to meet specified requirements, shall receive particular attention for adequacy and suitability. This element of inspection shall encompass visual examinations and dimensional measurements. Noncompliance with specified requirements, or presence of one or more defects preventing or lessening maximum efficiency of separator operation, shall constitute cause for rejection.

PART 2 - PRODUCTS

2.1 Three carbon adsorption systems will be supplied as shown. All three systems will be by the same manufacturer. Each activated carbon filter system shall comprise a complete operating system, including, but not limited to the following:

2.1.1 Two downflow carbon filters, all required piping and valves and the initial supply of carbon for each adsorber.

2.1.1.1 The carbon filters shall be factory assembled and shipped attached to a prefabricated skid with all piping and controls.

2.1.1.2 Each adsorber unit shall be designed to hold 10,000 to 20,000 pounds of granular activated carbon as shown in the Carbon Column Schedules.

2.1.1.3 The internal under drain system shall be conically shaped with side slopes of a minimum of 45 degrees to aid in removal of spent carbon, and shall be designed to evenly distribute water flow without "Tunneling" occurring within the adsorber.

2.1.1.3.1 The under drain system shall be perforated and designed to retain the granular activated carbon while allowing the passage of water at a minimal head loss.

2.1.1.3.2 The under drain system shall be designed to evenly distribute the water flow to ensure complete use of all of the carbon.

2.1.1.4 Adsorber tanks shall include a manway for maintenance and inspection access.

2.1.1.5 Adsorber tanks shall include sampling ports on the influent and effluent sides of the tanks for ease of monitoring the performance of the carbon.

2.1.1.6 The under drain system shall be designed so that >99 percent of the spent carbon can be removed without requiring the tank to be opened.

2.1.1.7 The maximum pressure drop with the adsorbers operated in series shall be 20 psi.

2.1.2 All piping shall be provided, including:

2.1.2.1 Carbon discharge and fill piping, valves and fittings.

2.1.2.2 Vent and safety relief piping, vent piping shall be separated from other piping.

2.1.2.3 Piping, valves and fittings to operate the two carbon absorbers either independently, in series with the option of having either absorber as the lead absorber in the series, or in parallel.

2.1.2.4 Air distribution piping, valves, fittings, filters, pressure regulators and water piping, etc., for use of compressed air and water to transfer carbon from vessel to a standard truck trailer.

2.1.2.5 All piping shall be factory installed on a prefabricated skid prior to being shipped.

2.1.2.6 All piping supplied with the Activated Carbon Filter system shall be constructed of carbon steel. The piping, valves and fittings used in transferring carbon shall be polypropylene lined.

2.1.3 10,000 to 20,000 pounds of granular activated carbon shall be provided and installed with each absorber as shown on the equipment schedule. Carbon type shall be as specified below. A different type of carbon may be used upon approval.

2.1.3.1 Granular Activated Carbon Description

The liquid phase activated carbon shall be virgin, granular and manufactured from bituminous coal. The liquid phase activated carbon shall conform to the following specifications:

Iodine No. (minimum)	900
Abrasion No. (minimum)	75
Effective Size	0.8 - 0.9 mm
Screen Analysis	
on 8 mesh (maximum %)	15
through 30 mesh (maximum %)	4
Water Soluble Ash (maximum %)	1
Moisture, as packed (maximum %)	2
Phosphate (maximum %)	1

The vapor phase activated carbon shall be virgin, granular and manufactured from bituminous coal. The vapor phase carbon shall conform to the following specifications:

Iodine No. (minimum)	1,050
Carbon Tetrachloride Adsorption, Minimum, Weight %	60
Ash, Maximum %	8
Moisture (as packed), Maximum, %	2
Hardness Number, Minimum	90
Apparent Density (Bulk Density, Dense Packing), g/cc, Minimum	0.47
Screen Analysis	
on 6 mesh (maximum % retained)	5.0
on 16 mesh (maximum % retained)	5.0

The delivered activated carbon must be accompanied by an analysis sheet certifying compliance with the specifications.

2.2 Carbon transfer shall be by pneumatic slurry truck.

2.2.1 Water piping, valves, fittings, and an eductor, suitable for connection to the nonpotable water supply must be supplied with the carbon adsorbers for use during loading and unloading.

2.2.2 Carbon transfer piping shall be fitted with four inch quick-disconnect coupling to facilitate loading and unloading of carbon from standard truck trailers.

2.3 The manufacturer of the carbon adsorption system must also manufacture the specified carbon and must be able to remove and reactivate the spent carbon from the adsorber and supply and load fresh carbon into the adsorber on a fee basis. The manufacturer shall provide an estimated price, with their equipment bid, for the removal, transport and reactivation of the spent carbon. Separate prices shall be provided for the liquid phase and vapor phase carbons.

2.3.1 The manufacturer's carbon reactivation facility must have a fully authorized RCRA Part B Permit.

2.3.2 The manufacturer of the carbon adsorption systems must also manufacture and supply the air stripping systems specified in Section 11145, "Air Stripping Columns."

2.4 PAINTING

2.4.1 For exterior coating see Section 11000, "Process Equipment General Requirements."

2.4.2 Vessel interiors shall be shop coated as follows:

2.4.2.1 All welds and any other sharp edges shall be ground smooth, and all imperfections such as skip welds, delaminations, scabs, silvers and slag corrected prior to abrasive blasting. All surfaces are to be degreased prior to sandblasting. The adsorber internal surface shall be blasted to a white metal surface (SSPC-SP5) to provide an anchor pattern in the metal corresponding to approximately 20 to 25 percent of the film thickness of the coating.

2.4.2.2 Immediately after sandblasting, the interior surface shall be coated with the first multi-pass spray coat of light gray Plasite 7156 HAR Abrasion-Resistant Protective Coating per manufacturer's instructions to produce a 5 to 6 mil dry film thickness. Similar coatings may be used with Engineer's approval.

2.4.2.3 The second multi-pass spray coat shall be applied per manufacturer's instructions to produce a finished coating of 10 to 12 mil dry film thickness for immersion service.

PART 3 - EXECUTION

3.1 INSTALLATION

3.1.1 The activated carbon filters and accessory equipment shall be installed as indicated and as recommended by the manufacturer.

3.1.2 Equipment delivered to the site in advance of installation shall be stored per the manufacturer's requirements.

3.1.3 Make all connections required to make the Activated Carbon Filter system fully operational.

3.2 FIELD INSPECTION SERVICES

3.2.1 As specified in Section 01400, "Contractor Quality Control (CQC) System."

3.2.2 Inspection

See Article 1.5.1 of this Section.

3.2.3 Field Representatives

Provide manufacturers field representative for technical direction of start-up and testing of activated carbon columns and for training of operating personnel.

3.2.4 Start-Up and Testing

Manufacturer's field representative shall inspect and test unit and certify that the installation has been performed in accordance with manufacturer's recommendations and that the system is ready for operation by others. Inspection shall consider, but not be limited to, the following:

- a. Soundness (without cracked or otherwise damaged parts).
- b. Completeness in all details, as specified.
- c. Correctness of settling alignment, set points and relative arrangement of each component.

3.2.5 Hydraulically test all tanks and fittings both before shipping the carbon filters and after installing the carbon filters to ensure that no leakage occurs.

3.2.6 Test under operating conditions to ensure that the carbon filters operate as specified.

-- End of Section --