SW1-A.34

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Natale S. Richiardi, General Manager
Pfizer Pharmaceuticals, Inc.
P.O. Box 628
Barceloneta, P.R. 00617

Re: Notice of Issuance of Final Permit Decision
RCRA Permit No. **PRD090346909**

Dear Mr. Richiardi:

Pursuant to authority granted by **Section 3005 of the Resource Conservation and Recovery Act (RCRA)**, as amended by the **Hazardous and Solid Waste Amendments (HSWA)** of 1984, you are hereby served with this Notice of Issuance of a Final RCRA Permit for the above referenced facility.

Please read the final permit carefully, since it may contain changes from the draft permit which you received. If comments were submitted in a timely manner as a result of EPA's Public Notice of its preparation of a draft permit, they have been considered in making this final permit decision. A copy of a memorandum is enclosed which explains EPA's position on issues raised by any comments submitted.

EPA will not subject the changes from the draft to the final RCRA permit to another public review. However, these changes may be challenged under the Consolidated Permit Regulations, codified at 40 CFR Part 124 (45 FR 33405) which apply to the EPA processing of this final permit. Specifically, Title 40 Section 124.19 established the following procedures for administrative appeal of final RCRA decisions. Any person who filed comments on the draft permit or participated in the public hearing may petition the EPA Administrator in Washington, D.C., to review any conditions of the permit decision. In addition, any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. Any petition for review under this part must be made within thirty (30) days of service of notice of the final permit decision by the Regional Administrator. The petition for review shall include a statement of the reasons supporting that review, including:

(1) A demonstration that any issues being raised were raised during the public comment period and the public hearing, as required; and when appropriate,

(2) A showing that the contested portion of the permit is based on:

(a) A finding of fact or conclusion of law which is clearly erroneous; or

(b) An exercise of discretion or an important policy consideration which the Administrator should, in his or her discretion, review.

All requests for administrative review must be addressed to:

Office of the Administrator
United States Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460
Attention: Mr. Ronald McCallum
Chief Judicial Officer, A101, Rm. 1139
(202) 382 - 4076

A copy of the request must be sent to:

Ms. Laura J. Livingston, Chief
Permits Administration Branch
United States Environmental Protection Agency
Region II
26 Federal Plaza
New York, New York 10278
(212) 264 - 9880

This final permit, a copy of which is enclosed, becomes effective in its entirety on the date indicated on the first page of the permit unless any interested party files a petition for review to the Administrator within those 30 days. In the event that administrative appeal is sought, the final permit decision will become effective:

(i) When the Administrator issues notice to the parties that review has been denied;

(ii) When the Administrator issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings;

(iii) Upon the completion of remand proceedings if the proceedings are remanded, unless the Administrator's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

Once it has become effective, the final permit decision will be final Agency action. Under Section 7006(b) of RCRA, judicial review of this final action is available by the filing of a petition for review in the United States Court of Appeals for the appropriate circuit within 90 days of the date of final Agency action. The 90-day judicial review period is available only when the administrative appeal procedures have been exhausted. This final action shall not be subject to later judicial review in civil or criminal proceedings for enforcement.

Please be advised that violation of any of the conditions of the enclosed permit may subject you and your facility to the civil and criminal penalties provided for in **Section 3008 of the Resource Conservation and Recovery Act.**

Your cooperation in the RCRA program is appreciated.

Sincerely yours,

Laura Livingston

Laura J. Livingston, Chief
Permits Administration Branch

Enclosures

cc: Mr. Pedro Gelabert, Director
US EPA Region II -- Caribbean Field Office

Flor del Valle, Director
Land Pollution Control Area
P.R. Environmental Quality Board

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

NOTICE OF ISSUANCE OF A FINAL RCRA PERMIT TO PFIZER PHARMACEUTICALS, INC., BARCELONETA, PUERTO RICO

The Regional Administrator of the United States Environmental Protection Agency (EPA) Region II has decided to issue a permit under the authority of the Solid Wastes Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments (HSWA) of 1984, to the Pfizer Pharmaceuticals, Inc. facility in Barceloneta, Puerto Rico. Enclosed is a copy of the final RCRA Permit and EPA's Responsiveness Summary. The Responsiveness Summary provides EPA's responses to the comments on the draft permit. The public comment period for providing comments on the draft permit ended on November 10, 1989.

Anyone wishing to appeal the Regional Administrator's decision should refer to the procedures set forth in 40 C.F.R. § 124.19. That Section states that, within thirty (30) days after service of this notice, any person who filed comments on the draft permit may petition the Administrator to review any condition of the permit decision. Any person who failed to file comments on the Draft RCRA permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision.

The 30 day period to request review of this final permit decision shall begin with the service of this notice by the EPA. (Note, for those parties receiving this notice by mail, three additional days will be added to the prescribed 30 day period as is provided for at 40 C.F.R. § 124.20(d).)

1/30/90
Date

Constantine Sidamon-Eristoff
Regional Administrator
Region II
U.S. Environmental Protection Agency

RESPONSIVENESS SUMMARY
PFIZER PHARMACEUTICALS, INC.
BARCELONETA, PUERTO RICO
EPA I.D. NUMBER PRD090346909

PFIZER'S COMMENTS ON THE DRAFT RCRA PERMIT

For the sake of clarity and to help expedite any permit changes which may result from Pfizer's comments, each comment will contain three sections consisting of the location, revision, and reason.

Location: States where the statement is located in the original draft permit.

Revision: Describes the change Pfizer is requesting to the original draft permit.

Reason: States Pfizer's justification for wanting each change.

1. Location

Statement of Basis, C. Description of Facility, Page 3, Paragraph 4.

Revision

The tank system is a horizontal stainless steel tank and is used as the incinerator feed tank. The tank has a capacity of 5,000 gallons and is equipped with overfill control and level indicator.

Liquid wastes from the container storage areas and organic synthesis area are pumped to the tank system prior to incineration. The tank is located within a sloped concrete secondary containment system.

Reason

The tank system also accepts waste from the organic synthesis area.

Although this fact is indicated in Attachment H, it is omitted in this section.

EPA RESPONSE

1. Requested revisions were reviewed and approved. Changes were made as requested.

2. Location

Statement of Basis, D. Basis for Permit Conditions, Page 5, Paragraph 3.

Revision

Closure Plan and Estimate of Closure Costs - It was estimated that the closure of the hazardous waste tank systems and the incineration unit will cost approximately $546,716. The permit requires the Permittee to establish a financial test in accordance with 40 CFR Part 264 Subpart H that ensures that funds are available for closure of this facility.

Reason

Closure cost was updated after the September 15, 1989 part B permit application submittal. An error was found in the piping volume calculation and maximum potential drums on one storage area.

These changed the estimated amount of wash water required for rinsing the pipe, the estimated volume of piping to be disposed, and the estimated amount of off site incineration of 240 drums versus 268.

These changes reflect a new closure cost of $546,716.

2. Requested revisions were reviewed and approved. Changes were made as requested. In the final permit, Attachment E of the draft permit is replaced by the revised Attachment E provided by Pfizer.

3. Location

Statement of Basis, E. Permit Organization, Page 6

Revision

Module IV Storage in Containers

Reason

Permit should not indicate storage in containers as non-applicable to facility. The facility has a permitted drum storage area.

3. Requested revisions were reviewed and approved. Changes were made as requested.

4. Location

Draft Permit, Table of contents, Line 21, Page -vi-

Revision

MODULE IV - CONTAINER STORAGE

Reason

The table of contents should not indicate container storage as non-applicable to the facility. The facility has a permitted drum storage area.

4. Requested revisions were reviewed and approved. Changes were made as requested.

5. Location

Module II, Page 1, Paragraph 3

Revision

B. Required Notice. (NOT APPLICABLE)

1. Hazardous Waste Imports--(NOT APPLICABLE--The Permittee is prohibited from importing hazardous wastes.)

2. Hazardous Waste from Off-site Sources--The Permittee manages hazardous wastes generated on-site and from other Pfizer, Inc. facilities and facilities which manufacture products for Pfizer.

Reason

PPI proposes to accept waste from facilities which produce products for Pfizer. Note that only waste generated while producing a Pfizer product would be accepted, and PPI will follow waste analysis plan prior to shipment.

5. Requested revisions were reviewed. Condition B of Module II is revised as follows:

"B. Required Notice.

1. Hazardous Waste Imports--(NOT APPLICABLE--The Permittee is prohibited from importing hazardous wastes.)

2. Hazardous Wastes from Off-site Sources.

When the Permittee is to receive hazardous waste from an off-site source, the Permittee must inform the generator in writing that he has the appropriate permits, and will accept the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the operating record. 40 C.F.R. § 264.12(b).

3. Within at least fourteen (14) calendar days prior to receiving hazardous wastes from off-site generators, the Permittee must notify EPA in writing. The notification must include, at a minimum, the identification and location of the generator, the EPA hazardous waste codes of the wastes, a description of the process(es) which generated the wastes, the maximum volume of hazardous wastes expected to be received, and the compatibility of the wastes with the Permittee's operation."

Pfizer's request to receive off-site wastes generated by facilities which produce products for Pfizer is acceptable, provided that Pfizer complies with the revised Condition B described above.

6. Location

Module III, Page 3, Paragraph 3.

Revision

Based on the RFA, EPA has determined the following:

1. A RCRA Facility Investigation (RFI) is warranted for SWMUs #11 and possibly #3 because EPA has determined that a release of hazardous waste and/or hazardous constituents may have occurred in these areas. If PPI can demonstrate that the phthalate concentration at SWMU #11 is below recommended action levels, a RCRA facility investigation would not be required for SWMU #3.

2. No further action is recommended for SWMUs #1, 2, 4, 5, 6, 7, 8, 9, and 10 because EPA has made a present determination that there is no evidence of a release having occurred or is occurring from these units and areas.

Reason

In our comments on the Versar RFA report, we stated that phthalates have never been used or stored in the facility. In fact, we were disappointed that the valid comments that were made by PPI were not appended to or referred to in the draft permit. In their report, Versar had determined that the only constituent of concern near SW #3 were phthalates, namely, bis - (2-ethyl hexyl) phthalate. This was an estimated value and below health based limits. Versar also stated that the presence of these phthalates may have been due to laboratory error or sample contamination. Phthalate compounds are used as plasticizers in materials that are commonly found in an industrial plant, such as plastic bottles, plastic drums and plastic bags.

Therefore, it should not be unusual to find phthalate compounds in soil samples. If phthalates were definitely found at SWMU #3, they positively were not the result of a release. We believe they were the result of either laboratory contamination, sample contamination, or from the operations of the prior owners of the property.

A pineapple plantation had been located at the site prior to PPI. As part of the plantations production procedures much of the site was once covered with plastic sheathing. Even today many areas of the plant still contain remnant pieces of this sheathing on the ground. It is possible that the presence of phthalates in Versar's sample may be due to this material. PPI accepts Versar's findings that the presence of phenol in one of the samples near SWMU #11 requires further investigation of SWMU #11, but does not accept Versar's finding that the phthalates in the vicinity of SWMU #11 are due to a release from

6. Requested revisions were reviewed and approved. Changes were made as requested. EPA has reconsidered the findings of the RCRA Facility Assessment (RFA) and Pfizer's contention. EPA agrees that investigation for phthalate contamination at SWMU #3 should be conducted after it has been demonstrated that phthalate contamination has been determined at SWMU #11 to be at concentration levels which cannot be attributed to the plastic sheathing residues.

that SWMU. If phthalates are found near SWMU #11 in amounts which cannot be justified, PPI will investigate SWMU #3 to determine the presence and extent of phthalate contamination in the area.

In addition, PPI requests that before the Draft RFA Report becomes final, EPA re-evaluates our original valid comments on Versar RFA Draft Report.

7. Location

Module III, Page 5, Paragraph 2

Revision

1. The Permittee shall submit, to the Regional Administrator, signed progress reports of all activities (i.e., SWMU Assessment, Interim Measures, RFI Workplan, RFI Report, Corrective Measures Study) conducted pursuant to the provisions of this Corrective Action Schedule of Compliance, beginning no later that one hundred and twenty (120) calendar days after date upon which the Permit becomes effective. All subsequent reports will be sent as per the schedule set out in the RFI workplan. These reports shall contain

ALSO:

Location

Module III, Page 23

Task VII - Progress Reports on Task I through V	As stated in RFI workplan.

Module III, Page 23

Progress Reports on Tasks VI, VIII, IX, and X	As Stated in CMS workplan.

Reason

Since Pfizer needs additional time to select and retain qualified consultants to complete the RFI, we request that the number of days to begin bi-monthly progress reporting to be changed from 60 to 120 days from the effective date of the permit. The RFI workplan will contain a schedule for progress reporting of all corrective action activities.

7. Requested revisions were reviewed and approved. Changes were made as requested.

8. Location

Module III Page 8 (1)(a) Paragraph 2

Revision

F. RCRA FACILITY INVESTIGATION (RFI)

1. RFI WORKPLAN

a. Within one hundred and eighty (180) calendar days after the effective date of this Permit, the Permittee shall submit a RFI Workplan to the Regional Administrator to address those units or areas of concern, releases of hazardous waste including hazardous constituents, and media of concern which require the further investigations as specified in Condition B of this Module.

Also Module III, Page 10 2(c), Paragraph 5

c. Task III--RFI Workplan Requirements: Within one hundred and eighty (180) calendar days from the effective date of this Permit, the Permittee shall submit a RFI Workplan which addresses Task III and designed to obtain data and information described in Task IV, in Attachment K to this Permit.

Also Module III, Page 23, Line 15

Task III - RFI Workplan - 180 days of permit effective date.

Reason

We request the number of days required from the effective date of the permit to submit the RFI workplan to be changed from 120 days to 180 days in order for us to select and retain qualified consultants.

8. Requested revisions were reviewed and approved. Changes were made as requested.

9. Location

Module III. Page 10, Paragraph 7

Revision

3. RCRA FACILITY INVESTIGATION WORKPLAN IMPLEMENTATION

a. No later than ninety (90) calendar days after the Permittee has received written approval from the Regional Administrator for the RFI Workplan, the Permittee shall begin implementation of the RCRA Facility Investigation according to the schedules specified in the RFI Workplan. Pursuant to Permit Condition F.3, the RFI shall be conducted in accordance with the approved RFI Workplan.

Reason

We require additional time (90 days) to coordinate with contractors and facility personnel the implementation of the RCRA Facility Investigation.

9. Requested revisions were reviewed and disapproved. The RFI Workplan will include a schedule of RFI activities. It is EPA's position that upon approval of the RFI Workplan, which includes the schedule proposed by the Permittee, the RFI can be conducted in accordance to the proposed plan within 30 calendar days. An extension of any deadline can be made through a permit modification, in accordance with the permit.

10. Location

Module III, Page 11, Paragraph 4

Revision

4. RCRA FACILITY INVESTIGATION FINAL REPORT AND SUMMARY REPORT

a. Within sixty (60) calendar days after sampling data has been reviewed and validated after the completion of the RFI, the Permittee shall submit a RFI Final Report and a RFI Summary Report.

Reason

Pfizer has experience delays with many analytical laboratories used for environmental analysis. We believe that the 60 day deadline for the RFI reports may be exceeded with delays on laboratory deliverance experience.

10. Requested revisions were reviewed. Revised version shall be as follows:

"4. RCRA FACILITY INVESTIGATION FINAL REPORT AND SUMMARY REPORT

a. Within one hundred and twenty (120) calendar days after completion of the RFI sampling activity, the Permittee shall submit a RFI Final Report and a RFI Summary Report."

It is EPA's position that 120 calendar days from the completion of the RFI sampling activity is adequate time to allow for completion of analysis and data validation by contract laboratory. An extension of the deadline can be made through a permit modification, in accordance with the permit.

11. Location

Module III, Page 21, Paragraph 4

Revision

K. OTHER HSWA REQUIREMENTS

1. WASTE MINIMIZATION

a. Pursuant to 40 CFR $ 264.73(b) (9), and Section 3005 (h) of RCRA, 42 U.S.C. § 6925 (h), the Permittee must submit to the Regional Administrator, at least annually, a waste minimization certification by the owner or operator. This certification and all accompanying documentation will be submitted annually with the first routine RCRA permit reports which will begin each January.

Reason

Presently, our waste minimization certificates are prepared annually and takes approximately three months to finalize it. Because of the degree of effort required in reviewing all plant projects to prepare these certificates, PPI request to remain to the same schedule rather than be bound to an uncertain permit effective date.

11. Requested revisions were reviewed and approved with a minor change which indicates a specific submission date. Condition K.1.a is revised as follows:

"a. Pursuant to 40 C.F.R. § 264.73(b)(9), and Section 3005(h) of RCRA, as amended by HSWA, 42 U.S.C. § 6925(h), the Permittee must submit to the Regional Administrator, at least annually, a waste minimization certification by the owner or operator. This certification and all accompanying documentation will be submitted by January 31st each year after the permit effective date."

In addition, for the purpose of clarification and elaboration Condition K of Module III shall be revised as follows:

"K. OTHER HSWA REQUIREMENTS

c. The Permittee shall submit a Waste Reduction Impact Statement within one hundred and fifty (150) calendar days of the effective date of this permit. The Permittee shall include the following information in the Waste Reduction Impact Statement:

(1) An identification of the annual amount and types of hazardous wastes that are generated;

(2) For each waste stream, an identification of the source of generation of these hazardous wastes;

(3) An analysis of technically and economically feasible hazardous waste reduction techniques for the facility, including a description of any techniques that were implemented since 1984, at a minimum; and

(4) A program and schedule for implementing the feasible hazardous waste reduction techniques.

d. In conjunction with the annual certification required by Conditions K.1.a and K.1.b above, the Permittee must submit an annual report to EPA on the status of waste reduction techniques, including those which have been implemented during the previous year and those specified in the Waste Reduction Impact Statement required by Condition K.1.c."

12. Location

Module IV, Page 1, A. Unit Identification, Paragraph 2.

Revision

Hazardous wastes are stored in DOT approved 55-gallon drums and in containers which meet the requirements of 40 CFR 264.172.

Reason

PPI does not want to restrict itself to only two types of drums and not be able on occasion to store waste in containers which are less than 55 gallons in size. All drums and containers used for storage will meet the compatibility requirements of 40 CFR 264.172.

12. Requested revisions were reviewed and approved. Changes were made as requested.

13. Location

Module IV, Page 1, Paragraph 4

Revision

B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

1. The Permittee may store and treat the following wastes in containers at the facility, subject to the terms of this Permit and as follows:

   - EPA Hazardous Waste Nos.: D001, F003, F005, F002, U002, U044, U112, U138, U154, U188, U202, U213, U220, U239, U080
   - Maximum Volume of 55,000 gallons or 1000 55-gallon containers

Reason

This appears to be an oversight since U138 is included in the part A application.

13. Requested revisions were reviewed and approved. Changes were made as requested.

14. Location

Module IV, Page 2, Paragraph 9

Revision

F. CONTAINMENT SYSTEMS

1. The Permittee shall maintain the containment system in accordance with the attached plan and specifications in Attachment G to this permit. (40 CFR 264.175)

2. The Permittee shall maintain the container storage area free of cracks and gaps.

3. The Permittee shall maintain the concrete floor and trench/sump system in a manner which would be protective of the environment.

Reason

Presently, the slab in the container storage area is not coated. Through discussions with EPA we stated that we would coat this floor even though there was no regulatory requirement to do so. However, we do not believe that a requirement to coat the slab should be a permit condition.

14. Requested revisions were reviewed. Condition F.3, as proposed by Pfizer, is too general. The condition shall be revised as follows to provide for the submittal of an implementation plan to apply the coating on the secondary containment system:

"3.a. Within ninety (90) calendar days, the Permittee shall submit to EPA, for review and approval, a plan to install/apply a liner/coating on the secondary containment system for the container storage area. The plan must include, at a minimum, the specification of the liner or coating, areal coverage, and a schedule for implementing the plan.

b. Upon approval of the plan, the Permittee shall implement the plan in accordance with the schedule in the plan."

15. Location

Module V, Page 1, Paragraph 2

Revision

B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

1. The Permittee may store a maximum total volume of 5,000 gallons of liquid hazardous waste in one tank system, subject to the terms of this Permit and as follows:

Hazardous Tank	Maximum Capacity (Gallons)	Dimens. of Tank	Secondary Containment Required	Description of Waste
	5,000	11'3" L 8'6" D	Yes	F002 F003, F005 D001, U002, U044, U112, U154, U213, U220, U239, U080, U138, U188, U202

2. a. The Permittee may store the following hazardous wastes identified by EPA Hazardous Waste Nos. F002, F003, F005, D001, U002, U044, U112, U154, U213, U220, U239, U080, U138, U188, U202 in the tank system.

Reason

This appears to be an oversight since these waste are also included in the Part A application. F001 was deleted because it is not included in the part A application.

15. Requested revisions were reviewed and approved. Changes were made as requested.

16. Location

Module V, Page 2, Paragraph 2

Revision

C. SECONDARY CONTAINMENT AND TANK ASSESSMENT (40 CFR 264.191 and 264.193)

1. Within ninety (90) calendar days from the permit effective date, the Permittee shall submit a plan to EPA, for review and approval, for upgrading the existing secondary containment system for the hazardous waste tank to comply with 40 CFR 264.193 and 53 Fed. Reg. 34084.

Reason

We require 90 days as opposed to 30 days to select and retain qualified consultants.

16. Requested revisions were reviewed and approved. Changes were made as requested.

17. Location

Module V, Page 3, 3(b), Paragraph 1 and 2

Revision

b. EPA will review and approve the action plan to upgrade the existing the secondary containment system. If EPA disapproves the plan, the permittee must comply with the requirements of 40 CFR 264.193. After ninety (90) days of the denial of the action plan, the permittee shall submit to EPA the following

Location (also)

Module V, Page 3, 4(a),

a. Within ninety (90) calendar days after EPA disapproves the action plan to coat the secondary containment structure, the Permittee shall submit to EPA the procedures to conduct, at least

Reason

PPI plans to coat the secondary containment area as soon as approval is obtained from EPA. Once the coating is applied, the secondary containment will meet the requirements of 40 CFR 264.13 and the submittal of above items will no longer be required.

17. Requested revisions were reviewed and Condition C.3.a, paragraph 1 of Condition C.3.b, and Condition C.4.a of the permit were changed to reflect EPA's approval as follow:

"3.a. The Permittee shall implement the approved plan prepared pursuant to Condition C.1 of this Module and provide documentation to EPA, for review and approval, in accordance with the schedule in the plan, showing that the hazardous waste tank system has a secondary containment system which meets the requirements of 40 C.F.R. § 264.193.

b. If EPA disapproves the plan, the Permittee shall comply with the following tank system assessment condition until such time as the concrete secondary containment for each tank system meets the requirement of 40 C.F.R. § 264.193:

Within ninety (90) calendar days from the date of EPA's written disapproval, the Permittee shall submit to EPA the following:"

"4.a. Within ninety (90) calendar days from the date of EPA's written disapproval of the plan prepared pursuant to Condition C.1.a of this Module, the Permittee shall submit to EPA the procedures to conduct, at least annually, a leak test that meets the requirements of 40 C.F.R. § 264.191(b)(5) or other tank integrity method. 40 C.F.R. § 264.193(i)(3)."

18. Location

Module VI, Page 2, Paragraph 4

Revisions

C. LIMITATION ON WASTES

1. Permittee shall incinerate only hazardous wastes generated on-site at the Pfizer Barceloneta facility or from other Pfizer, Inc. facilities and facilities which manufacture products for Pfizer.

Reason

PPI proposes to accept waste from facilities which produce products for Pfizer. Note that only waste generated while producing a Pfizer product would be accepted and PPI will follow waste analysis plan prior to shipment.

18. Requested revisions were reviewed and approved. The revised version will be as follows:

"C. LIMITATION ON WASTES

1. Permittee shall incinerate hazardous wastes generated on-site at the Pfizer Barceloneta facility, other Pfizer, Inc. facilities, and facilities which manufacture pharmaceutical products for Pfizer."

19. Location

Module VI, Page 2, Limitation on Waste, Paragraph 7

Revision

4. a. The Permittee shall not incinerate any combination of wastes, as fed into the secondary combustion chamber (afterburner), which have a combined heating value of less than 6,700 BTU/lb.

b. The Permittee shall not incinerate any waste such that the heat input of the waste is greater than 3.3 MMBTU/hr.

Reason

Clarity

19. Requested revisions were reviewed and approved. Changes were made as requested.

20. Location

Module VI, Page 3, Limitation on Waste, Paragraph 2

Revision

7. The Permittee shall not incinerate any combined liquid waste feed which has an ash content greater than 0.08% ash content.

Reason

Clarity.

20. Requested revisions were reviewed and approved. Changes were made as requested.

21. Location

Module VI, Page 3, Limitation on Waste, Paragraph 3

Revision

8. The Permittee shall not burn any combination of wastes with a viscosity greater than 12 cp (centipose).

Reason

The maximum viscosity for the waste has been changed from 3 cp to 12 cp. We have discussed atomization issues with our incineration consultant. He advised that we could handle waste with a viscosity up to 25 cp with the existing burners without atomization concerns.

21. Requested revisions were reviewed and disapproved, but EPA will revise the 3 cp viscosity limitation to 8 cp. Based on information provided by the Permittee, the requested 12 cp approaches the maximum manufacturer's recommended viscosity of the fluid that the burner can use. It is EPA's position that a viscosity limitation of 8 cp is sufficient to allow for operating flexibility and efficient operation of the burner.

22. Location

Module VI, Page 3, Limitation on Waste, Paragraph 7

Revision

12. Prior to incinerating wastes which are ignitable by characteristic or listed in Subpart D of 40 CFR Part 261 solely for its ignitable characteristic and the wastes contain an insignificant concentration (less than or equal to 100 ppm) of hazardous constituents listed in Appendix VIII of 40 CFR Part 261, the Permittee shall perform the following

Reason

"Non hazardous wastes or hazardous" was omitted for clarity.

22. Requested revisions were reviewed and disapproved. The proposed change does not ameliorate the lack of clarity of the version in the draft permit. EPA will revise paragraph 1 in Condition C.12 of Module VI as follows:

"12. Prior to switching from incinerating hazardous wastes (other than hazardous wastes described below in this paragraph) to incinerating nonhazardous wastes or hazardous wastes which are ignitable by characteristic or listed in Subpart D of 40 CFR Part 261 solely for its ignitable characteristic and also contain an insignificant concentration (less than or equal to 100 ppm) of hazardous constituents listed in Appendix VIII of 40 CFR Part 261, the Permittee shall perform the following"

(Note: Condition 12 of Module VI does not apply in the case when the Permittee is switching from incineration of nonhazardous wastes to incineration of hazardous wastes which are ignitable by characteristic or listed solely for its ignitable characteristic and also contain an insignificant concentration of hazardous constituents. This permit condition also does not apply for the reverse.)

23. Location

Module VI, Page 4, Operating Conditions, Paragraph 2

Revision

1. a. DELETE paragraph

Reason

We deleted this requirement due to the fact that we don't have to maintain the primary chamber temperature at 1240°F to assure that the secondary chamber temperature be 2140°F or greater. There is an auxiliary burner in the secondary chamber for temperature control.

23. Requested revisions were reviewed and approved. Changes were made as requested. (All affected enumerations shall be modified accordingly.)

24. Location

Module VI, Page 4, Operating Conditions, Paragraph 4

Revision

2. The indicator for combustion gas velocity shall be the concentration of oxygen in the afterburner flue gas, as measured at AI-710 and recorded at UR-711 and shall be no greater than 12% by volume, dry at the maximum heat release of 3.3 MMBTU/hr. At lower heat input, the oxygen level may exceed 12%. Under these conditions the waste feed rate, secondary chamber temperature and CO level will be the principal control to ensure destruction efficiency.

Reason

PPI understands that at a lower heat input when the flow rate is lowered, the oxygen level may exceed the 12%. This increases the cut-off incidents since the heat input will not always be 3.3 MMBTU/hr and would reduce the frequency of reporting.

24. Requested revisions were reviewed and disapproved, but EPA will revise the 12% stack gas oxygen concentration to 12.4%. The 12.4% stack gas oxygen concentration limitation is consistent with the trial burn results with the associated standard deviation considered. The trial burn test condition is considered a "worst case" condition chosen by Pfizer and the permit cannot allow operation of the incinerator beyond this test condition. If Pfizer wants a higher stack gas oxygen concentration limit, Pfizer may request a permit modification to conduct a trial burn at the desired test condition.

25. Location

Module VI, Page 4, Operating Conditions, Paragraph 5

Revision

3. The afterburner flue gas concentration of carbon monoxide (CO), as measured at AI-710 and recorded at UR-711. The values must be corrected to 7% oxygen, dry volume in the stack, shall not exceed 100 ppmv on a 60-minute rolling average, 500 ppmv on a 10-minute rolling average.

Reason

Note that we only record the actual uncorrected CO concentration at UR-711. The corrected CO concentrations and rolling average values are only indicated.

25. Requested revisions were reviewed and disapproved. It is EPA's position that Pfizer can duplicate the recording effort implemented during the trial burn, where Pfizer brought a portable recorder on-site. This recorder requirement is necessary to determine compliance with the permit limits.

26. Location

Module VI, Page 4, Operating Conditions, Paragraph 10

Revision

5. a. The packed tower pH, as measured at AE-514 and recorded at UR-711, shall be maintained at no less than 1.5.

Reason

During our trial burn there were exceeded periods where the packed tower pH was equal to 1.5. The HCl removal efficiencies during these periods were excellent.

26. Requested revisions were reviewed and approved--not for the rationale presented by Pfizer--but because the minimum pH limit of 1.5 is within the error range of the trial burn results.

27. Location

Module VI, Page 5, Operating Conditions, Paragraph 1

Revision

5. c. The total solids and total dissolved solids concentration in the packed tower blowdown, as measured at AT-516 and recorded at UR-714, shall not exceed 5.0% by weight.

Reason

During our trial burn, excess freshwater makeup (45 GPM) was used. Since the facility must conserve water, the solids concentration in the blowdown will increase. It is common for blowdowns to have a solids content in the range of 5 to 10 percent by weight.

27. Requested revisions were reviewed and disapproved, but EPA will revise the 2% total solids and total dissolved solids limitation in Condition 5.c of Module VI to 3% to be consistent with Table I. It is EPA's position that efficient operation of the packed tower can be maintained at 3% total solids and total dissolved solids concentration.

28. Location

Module VI, Page 5, Operating Conditions, Paragraph 6

Revision

9. After allowing 5 minutes for corrective action, the Permittee must cease waste feed when changes in waste feed or operating conditions exceed limits designated in Conditions VI.C and VI.D of this module, as required by 40 CFR 264.345 (f).

Reason

Allowing a lagtime of 5 minutes prior to initiating the waste feed cutoff provides sufficient time for corrective action without upsetting the operation. This is extremely important during start-up and would reduce the frequency of reporting.

28. Requested revisions were reviewed and disapproved. It is EPA's position that the objective of the permit condition is to minimize emission of hazardous constituents when established limits, which are based on a "worst case" test condition, are exceeded. Allowing the operation of the incinerator for 5 minutes for "corrective action" after changes in waste feed or operating conditions exceed the limits established in the permit contradicts this objective.

29. Location

Module VI, Page 5, Operating Conditions, Paragraph 8

Revision

11. The Permittee shall construct, maintain and calibrate the monitoring systems and the automatic waste feed cut-off system specified in Table I to automatically cut-off the hazardous waste feed to the incinerator at specified levels after allowing 5 minutes for corrective action.

Reason

To be consistent with operating condition number 9 which allows 5 minutes for corrective action without upsetting the operation.

29. Requested revisions were reviewed and disapproved for the same rationale provided in EPA's response to comment 28, above.

30. Location

Module VI, Page 6, F. Control of Metals and Hydrogen Chloride Emissions, Paragraph 6

Revision

1. The Permittee shall provide, within ninety (90) calendar days of the permit effective date, the following:

Reason

We require additional time (90 days) to review some of our non-typical waste. For example, our sump bottoms may contain higher metal levels.

30. Requested revisions were reviewed and approved. Changes were made as requested.

31. Location

Module VI, Page 6, F. Control of Metals and Hydrogen Chloride emissions, Paragraph 9.

Revision

2. The Permittee shall submit, within one hundred and twenty (120) calendar days from the permit effective date, a Waste Characterization Plan to EPA for review. The Waste Characterization Plan shall address the ...

Reason

We require an additional 30 days to review some of our non-typical waste because these wastes may have higher metal levels.

31. Requested revisions were reviewed and approved. Changes were made as requested.

32. Location

Module VI, Page 7, F. Control of Metals and Hydrogen Chloride emissions, Paragraph 5.

Revision

3. The Permittee shall implement the Waste Characterization Plan, within a calendar year from the date EPA approves the plan.

Reason

Some waste may not be available 30 days after EPA approves the plan. These waste must be generated and analyzed prior to initiating the plan.

32. Requested revisions were reviewed and disapproved. The intent of the condition is to implement the Waste Characterization Plan--not conduct all necessary sampling of waste streams. The plan will contain a schedule for sampling the waste streams when generated. EPA expects Pfizer to design the Waste Characterization Plan to suit Pfizer's operation.

33. Location

Module VI, Page 9, Paragraph 3

Revision

G. REPORTING

1. The operator must indicate in the operating log whenever the waste feed is shut-off because of an emergency situation or because of concern that a permit condition may be exceeded. The log must include a statement of the problem or situation that caused the shut-off and the action, if any, the operator took or plans to take to address the problem. The permittee shall report in writing to the administrative authority if in any calendar month these are more than:

(a) Thirty (30) cut-off related to high carbon monoxide concentration in the combustion gases:

(b) Thirty (30) cut-off related to low oxygen concentration in the combustion gases:

(c) Ten (10) cut-off related to the remaining critical environmental up-set controls.

.Draft in the afterburner
.Low temperature afterburner
.High O2 max waste heat input
.Low differential pressure venturi
.Low scrubber pH

The Permittee shall notify the EPA in writing within seven (7) calendar days of the thirtieth shut-off. The notice must include the dates and circumstances of each shut-off and the action the operator took to address each problem.

Reason

After reviewing Module VI with our incinerator consultant, he has recommended the following modifications to this reporting section based on experience. Details will be discussed at meeting with EPA.

33. Requested revisions were reviewed and disapproved. The revised condition proposed by Pfizer will allow 70 waste feed cut-offs. It is EPA's position that waste feed cut-offs should be minimized and that Pfizer must operate the incinerator accordingly. (This may require Pfizer to have early-warning alarm systems to trigger when approaching the permit limits to allow "corrective action" to be performed to avoid cut-off of the waste feed.)

It is EPA's position that 30 or more waste feed cut-offs caused by exceedence of the permit limitations may present a significant potential risk to human health and environment. Pfizer must evaluate the causes of waste feed shut-offs and implement corrective and preventive measures to minimize (or eliminate) exceedence of the permit limitations.

Condition G.1 shall be revised as follows to clarify that waste feed cut-off events caused by exceedence of the permitted operating conditions are to be considered in the reporting requirements:

"1. The operator must indicate in the operating log whenever the waste feed is shut-off because of an emergency situation or because of concern that a permit condition may be exceeded. The log must include a statement of the problem or situation that caused the shut-off and the action, if any, the operator took or plans to take to address the problem. If the waste feed is shut-off more than thirty (30) times in a calendar month, caused by the exceedence of the operating conditions in this Module, the Permittee shall notify the EPA in writing within seven (7) calendar days of the thirtieth shut-off. The notice must include the dates and circumstances of each shut-off and the action the operator took to address each problem."

34. Location

Module VI, page 9, G(2) Reporting

Revision

2. The reports shall be submitted no later than thirty (30) calendar days from the beginning of the quarter. (The beginning of each quarter shall be January 1, April 1, July 1, and October 1.)

Reason

We believe fourteen days to be insufficient to prepare these reports.

34. Requested revisions were reviewed and approved. Changes were made as requested.

35. Location

Module VI, Page 9, G. Reporting, Paragraph 5

Revision

3. During the first year that the permit is effective the Permittee shall notify EPA, at least fourteen (14) calendar days in advance, in writing, of its intent to incinerate hazardous wastes which are hazardous by characteristic for ignitability or listed in 40, CFR Part 261 Subpart D, solely for its ignitability and contains insignificant amounts of hazardous constituents (less than or equal to 100 ppm).

Reason

PPI understands that these notifications would allow EPA to review and oversee the incinerator operation to assure that the amounts of hazardous constituents in the ignitable waste are below 100 ppm. PPI believes that it is not in the facility's best interest to have the burden of notifying EPA of service changes for the life of the permit, especially after a satisfactory service change has been demonstrated to EPA. We consider it adequate to provide notification only for the first year to allow EPA sufficient time to review and oversee the operation.

35. Requested revisions were reviewed and disapproved. It is EPA's position that this notification requirement is not an unreasonable burden on Pfizer. To allow flexibility in the event that Pfizer needs to cancel or post-pone the schedule, the following sentence is added to Condition G.2 of Module VI: "The Permittee must inform EPA, in writing, of any revision to this notification within ten (10) calendar days from the notification."

36. Location

Module VI, Table I - Automatic Waste Feed Interlock System, page 1

Revision

Adjust table with requested changes. Revised Table I is at the end of report.

Reason

Rationale for table changes is discussed on various specific sections of this report and we want consistency. Module VI was discussed with incinerator consultant and he recommended changes based on field experience. Details of proposed changes will be further discussed at EPA meeting.

36. Table I shall be revised in accordance with the revisions granted in the above EPA responses to Comments #23, #26, and #27. The Revised Table I, as proposed by Pfizer, is included in Attachment 1A to this Responsiveness Summary. Attachment 1B contains the final version of Table I of Module VI of the permit and the rationale for the changes.

37. Location

Module VI, Table I - Automatic Waste Feed Interlock System, Page 2

Revision

Table Page 2 of 2

The feed streams shall terminate after a 5 minute delay upon triggering the set point. B1: primary kerosene burner; B2: hazardous waste burner; B3: sec. kerosene burner.

Reason

After allowing 5 minutes for corrective action, the Permittee must cease waste feed when changes in waste feed or operating conditions exceed limits designated in Conditions VI.C and VI.D of this module, as required by 40 CFR 264.345 (f).

37. Requested revision was reviewed and disapproved for similar rationale presented in EPA's response to Comment #28.

38. Location

Attachment A - Waste Analysis Plan

Bottom of Page C-4
Table C-4
Top of Page C-5

Revision

The following procedure will be instituted to ensure that there is no mixing of ignitable and toxic wastes. The hazardous waste storage tank and incinerator feed piping will be cleaned prior to staring a campaign to incinerate ignitable waste. The pipeline will be purged with nitrogen. The residues will be sent back to the hazardous waste storage tank. After the tank is drained, the pipeline and tank will be purged with steam for a time sufficient enough to remove residue toxic waste from the system. The tank would then be charged with ignitable wastes. All of the ignitable wastes would be incinerated before starting a campaign to incinerate wastes containing hazardous constituents.

Reason

We believe that the steam cleaning of the pipeline and tank would be sufficient to meet the 100 ppm hazardous constituent limit for our ignitable waste. If after analysis we discover this is not the case, we will amend the procedure.

38. Requested revisions were reviewed and approved. Changes were made as requested. Attachment A, page C-4, paragraph starting at the bottom of page C-4 and ending at top of page C-5 is replaced by Pfizer's paragraph. (The word "staring" in Pfizer's second sentence is corrected to be "starting.")

Upon issuance of the final permit to Pfizer, any additional changes to the permit must be made pursuant to the appropriate permit modification procedures in the permit.

39. Location

Attachment N, Constituents of Concern, Paragraph 2

Revision

II. Parameters to be Monitored at SWMU #11 (Solvent Recovery Area)

Soil: Semi-Volatiles
Metals (Cr, Arsenic, Ni)
Phthalates Phenol
Benzo(a)pyrene

Reason

Although PPI had four PCB transformers, they were located within an enclosed structure. Note that these transformers have been removed and have never leaked. We can state unequivocally that the tentatively identified PCB compounds are not related to a leak from any of these PCB transformers. PPI has determined that the PCB's were contained in the plastic sheathing used by the former owner of the site in his plantation operations. This is further confirmed by the fact that when PPI collected its sample, the sampler made sure that a small piece of this plastic was in the sample for analysis. Versar initiated no such procedure.

39. Requested revisions were reviewed and disapproved. It is EPA's position that, unless the presence of PCB can be proven to be from the plastic sheathing formerly placed on the ground, the RFI sampling should include PCBs as a parameter.

OTHER REVISIONS MADE TO THE DRAFT PERMIT

(The revisions described below were made to correct typographic errors, clarify certain conditions, and eliminate ambiguities. Note that all page references refer to the draft permit.)

REVISIONS	RATIONALE
Module I	
1. In Condition B, insert "(3)" after "Section 3005(c)" of the citation at the end of the paragraph.	1. Correction of citation.
2. Condition C, page 1: The phrase ", as amended by" is inserted after "§ 6925(c)(3)" and "(" and ")" is deleted from the phrase "(Section 212 of HSWA)". The article "a" is inserted before "regulation" in the third line.	2. Correction of grammar.
3. Condition F.1, page 2, second sentence: The phrase "other than noncompliance authorized by the Regional Administrator" is replaced by "except" and "of the appropriate law" is inserted after "violation".	3. Clarification of permit condition.
4. Condition F.3, page 3: The second sentence is deleted. In the third sentence, replace "§§ 270.152, 270.29" with "§§ 270.15 to 270.23".	4. The second sentence does not apply to incinerator permits and the citations are corrected.

5. Condition F.9, page 4: The term "(1)" is inserted after "270.30(j)".	5. Correction to citation.
6. Condition F.9(c), end, page 5: The term "(3)" is inserted after "270.30(j)" and the entire citation is separated from the text.	6. Correction to citation.
7. Condition F.9(d), page 6: The citation "40 C.F.R. §§ 270.6 and 270.30(e)." is added to the end of the paragraph.	7. Clarification of permit condition.
8. Condition F.14, page 6: The following is added: "No later than fourteen (14) days following each interim date and final date of compliance, the Permittee must notify the Regional Administrator in writing, of its compliance or noncompliance with the interim or final requirements. 40 C.F.R. § 270.33(a)(3) and 270.30(l)(5).	8. Clarification of permit condition.
9. Condition F.13, page 6: The term "minor" is deleted from the term "minor modification".	9. A clarification of current regulations pertaining to permit modifications.
10. Condition F.15(a)(ii), page 7: The citation is corrected to read "40 C.F.R. § 264.56(a)(1) and (2)."	10. Correction to citation.
11. Condition F.15(b)(ii), page 7: The citation at the end of the condition is corrected to be "40 C.F.R. § 264.56(d)" and is separated from the text.	11. Correction to citation.
12. Condition F.16(c), page 8: The citation is separated from the text and "(ii)" is inserted after "(6)".	12. Correction to citation.
13. Condition F.16, page 8: The citation "40 C.F.R. § 270.30(l)(6)(i)." is inserted after "...circumstances." The citation "[40 C.F.R. § 270.30(l)(6)(i)(A)]" is inserted after Condition F.16(a). The citation "[40 C.F.R. § 270.30(l)(6)(i)(B)]" is inserted after Condition F.16(b). Condition F.16(d), paragraph 1 at page 9: The term "(iii)" is inserted after the citation.	13. Citations are made to clarify permit condition.
14. Condition F.19, page 9 of 13: In the first sentence, the phrase "during odd numbered calendar years" is inserted after "activities". In the second sentence, the phrase "to the Regional Administrator" is inserted after "submitted".	14. Clarification of requirement.
15. Condition F.20, page 9, last sentence: The term "(c)(i-vii)" is deleted.	15. Correction to citation.
16. Condition G, page 10: The term "applications," is inserted after "All" and the phrase "requested by" is replaced with "submitted to". The phrase "and 270.30(k)" is replaced with ". 40 C.F.R. § 270.30(k)."	16. Clarification of requirement and correction to citation.
17. Condition H, page 10: The citation "40 C.F.R. § 270.12(a)." is added at the end of the condition.	17. Clarification of permit condition.

18. Condition K, page 11: The phrase ", as modified by 53 Fed. Reg. 37912" is deleted.	18. The additional citation is not needed.
19. Condition M, page 12: The definition of the term "EPA" is added before "Facility": "EPA" means the United States Environmental Protection Agency.	19. The definition is included to avoid any ambiguity that may arise.
20. Condition M, page 13: In the definition of "Release", the phrase "unless exempt under 40 C.F.R. § 262.4(a)(2)," is inserted before "but is not limited to". The entire definition for "Release" is place before the definition for "Solid Waste Management Unit".	20. Clarification of definition.

Module II

1. Condition C.4, page 2 and 3: The citation "40 C.F.R. § 268.7(a)(1)." is added to the end of the Condition C.4(a). The citation "40 C.F.R. § 268.7(a)(2)." is inserted after Condition C.4(b). The citation "40 C.F.R. § 268.7(a)(4)." is inserted after Condition C.4(c).	1. Clarification of permit condition by use of citation.
2. Condition E, page 5: The sentence "The Permittee must keep the inspection schedule at the facility as required by 40 C.F.R. § 264.15(b)(2)." is inserted after the first sentence. In Condition E.3, the phrase ". At a minimum, the inspection schedule must include the terms and frequencies as required in 40 C.F.R. § 264.15(b)(4)" is inserted after "...when in use".	2. Clarification of permit condition.
3. Condition M.6, page 13: The phrase "as required by" is replaced with a period ".".	3. Correct use of citation.
4. Condition M.8, page 14: The term ".1" is deleted from "Attachment E.1". The term "264.197" is inserted after "264.178".	4. Correction to referenced regulation.
5. Condition C.4.b.(ii), page 2: Delete commas (",") in lines 1, 3, and 8 of the certification. Replace "and that" in line 5 of the certification with "to". Insert "and all applicable prohibitions set forth in 40 C.F.R. 268.32 or RCRA Section 3004(d)".	5. Corrections to conform with regulation.

Module III

1. Condition C.2 and 3, page 4 and Condition J, page 21: The phrase ", 53 Fed. Reg. 37912" is deleted.	1. The specific citation is not needed.
2. Condition K, page 22: The phrase ", as amended by HSWA" is inserted after "of RCRA" in Condition K.1.a and after "6924(d)-(g)" in Condition K.2.a., page 23.	2. Correction to regulatory reference.

Module V

1. Condition B.3, page 2: The phrase ",in accordance with Module I, Condition K" is inserted after "under this permit".	1. Clarification of permit condition.
2. Condition C: The phrase "and 53 Fed. Reg. 34084" is deleted from Conditions C.1 and C.3. The citation "[40 C.F.R. § 264.193(i)(1)]" is inserted after Condition C.3.b.i in page 3. The citation "40 C.F.R. § 264.193(i)(4)." is inserted after Condition C.5, first sentence. In Condition C.6, the citation "§ 264.193(i)(4)" is corrected to "§ 264.193(i)(5)".	2. Clarification of permit condition and correction to citations.

Module VI

1. Condition E, page 5: The citation "264.347(e)" at the end of Condition E.4 is corrected to be "264.347(d)". The citation "40 C.F.R. § 264.347(a)(3)." is added to the end of Condition E.5.	1. Corrections to error in citation and clarification of permit condition by using citation.
2. Condition D.8, page 5: The phrase "(corrected to 7% oxygen, dry volume)" is inserted after "instantaneous CO level".	2. Clarification of the permit condition.

Attachment A

1. Page C-6, paragraph 5: The sentence "The Seta Flash Closed Cup Tester (SW-846 Method 1020) may also be used." is added. Page C-7 and C-8, end of partial paragraph at the top of both pages: The sentence "SW-846 Method 8240, which is a GC/MS method, may also be used." is added. Page C-7 and C-8, first whole paragraph on both pages: The sentence "SW-846 Method 8270, which uses a capillary column, may also be used." is added to the end of the paragraphs.	1. The alternate methods are acceptable test methods.and are included to provide flexibility in the waste analysis plan.
2. Page C-8, first whole paragraph: The phrase "and Methyl Iodide" is deleted. A new paragraph is added after the first whole paragraph: "Methyl Iodide - SW-846 Method 8240."	2. Methyl iodide is classified as a volatile. The appropriate SW-846 method is 8240.
3. Table C-5: The Seta Flash Closed Cup Tester (SW-846, Method 1020) is added to the "Test Methods" column corresponding to the "Flashpoint" parameter. Method 8240 is added to the "Test Methods" column corresponding to the following parameters: methylene chloride, toluene, and chloroform. Method 8240 replaces Method 8250 in the column corresponding to Methyl Iodide. Method 8270 is added to the "Test Methods" column corresponding to the following parameters: phenol and sodium saccharin.	3. Changes were made to reflect the above inclusion of alternate SW-846 methods and correction.

4. Page C-21, table at bottom of page: Method 8270 is added to the column corresponding to saccharin and phenol. Method 8240 replaces Method 8250 in the column corresponding to Methyl Iodide.	4. Changes were made to be consistent with the above inclusion of alternate SW-846 methods and correction.
5. Page C-21, table at the bottom: Method 8240 is added to the column corresponding to methanol.	5. Method 8240 is an acceptable alternate method for analyzing for methanol.
6. Table C-6: Method 8240 is added to the "EPA Analytical Method" column corresponding to methylene chloride, chloroform, and toluene. Method 8240 replaces 8250 in the column corresponding to methyl iodide.	6. Changes were made to be consistent with the above inclusion of alternate SW-846 methods and correction.
Attachment G	
1. Pfizer's revised Figures D-1 and D-2 depicting the new container storage layout replaces Figures D-1 and D-2 of the draft permit.	1. EPA has reviewed and approves the revision to the container storage layout.

ATTACHMENT 1

A: Pfizer's proposed revisions to Table I of Module VI of the permit.

B: Final version of Table I of Module VI of the permit.

TABLE I - AUTOMATIC WASTE FEED INTERLOCK SYSTEM

CONDITION	INST. ID	LIMIT	FEED STREAM TO BE CUT OFF[1]	Proposed Change
Primary comb. chamb. temp:				
High	TSH-200	1900°F	B1	Delete: Not necessary
Low	TSL-200	1247°F	B2	Delete: See comment #
Second. comb. chamb. temp:				
High	TSH-300	2400°F	B2	Delete: Not necessary
Low	TSL-300	2140°F	B2	
High prim. chamb. pressure	PSH-209	-0.05"wc	B1,B2,B3	
Low comb. air blower press.	PSL-201A	4.0"wc	B1,B2,B3	Delete: Not Necessary
Kerosene nozzle pressure: (primary)				
High	PSH-201B	80 psi	B1	Delete. Not
Low	PSL-201B	10 psi	B1	Delete. Necessary.
Liquid waste nozzle press:				
High	PSH-301	80 psi	B2	Delete. Not
Low	PSL-301	10 psi	B2	Delete. Necessary
Kerosene nozzle pressure: (secondary)				
High	PSH-351	80 psi	B3	Delete. Not
Low	PSL-351	10 psi	B3	Delete. Necessary
Liquid waste flowrate:				
High	FI-702	60 gph	B2	55 gph: Permit condition
Low	FI-702	0 gph		Delete: Not Necessary 0 gph.
Flame failure		No flame	B1,B2,B3	Delete: Safety Feat
Power failure		No power	B1,B2,B3	Delete: Safety Feat
Low venturi pressure drop	DPI-511	32" W.G.	B2	
Low total water to venturi	FI-516	49 gpm	B2	
Low packed tower recycle H_2O	FI-517	49 gpm	B2.	
High venturi flue gas temp.	TSH-512	210°F	B1,B2,B3	
High CO in sec. chamber:				
10-min rolling avg.	AI-710	500 ppmv	B2	
60-min rolling avg.	AI-710	100 ppmv		add B2.
Sec. chamb. oxygen conc.:				
High	AI-710	12% by vol.	B2	
Low	AI-710	3.0% by vol.		add B2.

The feed streams shall terminate immediately upon triggering the set point. B1: primary kerosene burner; B2: hazardous waste burner; B3: sec. kerosene burner

ALARM SYSTEM

CONDITION	INST. ID	SET POINT LIMIT	Propo Char
Low packed tower blowdown pH	AIC-514C	2.0	1.5 See Comm #26
High TS/TDS in packed tower blowdown	Conductivity meter	3% by weight	5.0% weight See com #27

TABLE I

AUTOMATIC WASTE FEED INTERLOCK SYSTEM

CONDITION	INST. ID	SET POINT LIMIT	FEED STREAM TO BE CUT OFF[1]	CALIBRATION FREQUENCY
Second. comb. chamb. temp: Low	TSL-300	2140°F	B2	Manufacturer's Specification
Liquid waste flowrate: High	FI-702	55.7 gph	B2	"
Flame failure		No flame	B1,B2,B3	"
Low venturi pressure drop	DPI-511	32" W.G.	B2	"
Low total water to venturi	FI-516	49 gpm	B2	"
Low packed tower recycle H_2O	FI-517	49 gpm	B2	"
High venturi flue gas temp.	TSH-512	210°F	B1,B2,B3	"
Sec. chamb. oxygen conc.: High	AI-710	12.4% by vol.	B2	"
Low packed tower blowdown pH	AIC-514C	1.5	B2	"
High CO in sec. chamber:				Daily
10-min rolling avg.	AI-710	500 ppmv	B2	
60-min rolling avg.	AI-710	100 ppmv	B2	

ALARM SYSTEM

CONDITION	INST. ID.	SET POINT LIMIT	CALIBRATION FREQUENCY
High TS/TDS in packed tower blowdown	Conductivity meter	3% by weight	Maunfacturer's Specification

---

1 The feed streams shall terminate immediately upon triggering the set point. B1: primary kerosene burner; B2: hazardous waste burner; B3: sec. kerosene burner

REVISIONS TO TABLE I OF MODULE VI	RATIONALE
1. Deleted waste feed cut-off interlock requirement for high and low primary combustion chamber temperature condition.	1. Pfizer is permitted to feed liquid hazardous wastes into the secondary chamber (afterburner) only. Temperature limitations on the primary chamber is unnecessary as long as a minimum temperature of the secondary chamber is maintained.
2. Deleted waste feed cut-off interlock requirement for high secondary combustion chamber temperature.	2. The purpose for a maximum temperature limitation in the secondary chamber is to protect downstream air pollution control equipment from damage. The high venturi flue gas temperature condition also serves the same purpose, therefore, the high secondary chamber temperature limit may be eliminated.
3. Deleted waste feed cut-off interlock requirement for high primary chamber pressure.	3. Pfizer is permitted to feed liquid hazardous wastes into the secondary chamber (afterburner) only. The waste feed cut-off interlock requirement for this parameter in the primary chamber is unnecessary.
4. Deleted waste feed cut-off interlock requirement for low combustion air blower pressure.	4. This requirement is redundant because low combustion air pressure will result in inefficient combustion due to low oxygen concentration and will result in elevated carbon monoxide (CO) concentration. High CO concentration is required to be interlocked to waste feed cut-off.
5. Deleted waste feed cut-off interlock requirement for liquid waste nozzle pressure.	5. This requirement is redundant because high waste flow will be interlocked to waste feed cut-off.
6. Deleted waste feed cut-off interlock requirement for the kerosene nozzle pressure for the primary and secondary chamber.	6. This requirement does not need to be interlocked to waste feed cut-off.
7. Revised the high liquid waste flow limit from 60 gph to 55.7 gph.	7. Revision is made to be consistent with Condition C.6 in Module VI of the permit.
8. Deleted waste feed cut-off interlock requirement for the low waste flow rate limit.	8. This requirement is unnecessary.
9. Deleted waste feed cut-off interlock requirement for power failure. The waste feed cut-off interlock for flame failure will be retained.	9. During power failure the waste feed will be cut-off. In the event of flame failure, it is EPA's position that hazardous wastes must not be fed into the secondary chamber.
10. Revised the high secondary chamber oxygen concentration limit from 12.0% to 12.4%.	10. Revision is made to be consistent with EPA's response to Comment #24.

11. Deleted waste feed interlock requirement for low secondary chamber oxygen concentration.	11. This requirement is unnecessary because low oxygen concentration will result in elevated CO concentration. High CO concentration is required to be interlocked to waste feed cut-off.
12. Revised the low packed tower blowdown pH from 2.0 to 1.5.	12. See EPA's response to Comment #26.
13. "B2" is added to the "Feed Stream to be Cut-off" column for the "60-minute rolling average" line.	13. For purpose of clarification.
14. The term "SET POINT" is added to the "LIMIT" column.	14. For purpose of clarification.
15. The low packed tower blowdown pH condition will be required to be interlocked to waste feed cut-off instead of to alarm.	15. This requirement will ensure that the organic chlorides source is cut-off when the permitted operating condition for the packed tower is reached.
16. A "CALIBRATION FREQUENCY" column is added.	16. The requirement was inadvertently left out in the draft permit. Condition D.11 of Module VI requires the Permittee to calibrate the monitoring systems specified in Table I.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

FINAL PERMIT

EPA I.D. Number: PRD090346909

Effective Date: May 14, 1990
Expiration Date: May 14, 1995

Permittee: Pfizer Pharmaceuticals, Inc.
P.O. Box 628
Route #2, KM. 58.2
Barceloneta, P.R. 00617

This permit is issued by the United States Environmental Protection Agency ("EPA" or "Agency") under the authority of the Solid Waste Disposal Act ("the Act"), as amended by the Resource Conservation and Recovery Act of 1976 ("RCRA"), Subtitle C, and the Hazardous and Solid Waste Amendments of 1984 ("HSWA"), 42 U.S.C. §§ 6901-6991i, and EPA regulations promulgated pursuant thereto, to Pfizer Pharmaceuticals, Inc. (hereafter called the "Permittee") to store hazardous wastes three container storage areas and a tank system and treatment of liquid hazardous wastes in a rotary-kiln incinerator. In accordance with this permit, the Permittee is required to:

1) Comply with the incineration standards for destruction and removal efficiency (DRE) of at least 99.99% for designated principal organic hazardous constituents (POHCs), hydrogen chloride (HCl) emission such that the rate is no greater than 4 pounds/hour or 1% of the HCl in the stack gas, prior to entering any pollution control equipment, and particulate matter emission of less than 180 milligrams per dry standard cubic meter, corrected for the amount of oxygen in the stack gas;

2) Certify annually that the generation of hazardous waste is minimized to the extent practicable;

3) Comply with the RCRA tank standards; and

4) Comply with the land disposal restrictions.

The Permittee must comply with all the terms and conditions of this permit. This permit consists of the conditions contained herein (Modules I through VI), including those in Attachments A through N, and the applicable regulations contained in 40 C.F.R. Parts 124, 260 through 264, 268, and 270 as specified in the

permit. Applicable regulations are those which are in effect on the date of issuance of this permit, except as provided in 40 C.F.R. § 124.86(c) for RCRA permits being processed under Subparts E or F of Part 124. A permit may be modified, however, to incorporate new regulations pursuant to 40 C.F.R. § 270.41(a)(3) and 40 C.F.R. § 270.32(c). All documents referred to in the permit are incorporated into the permit by reference.

The issuance of this permit is based on the assumption that the information provided in the Permittee's Part B permit application (hereafter referred to as the "application"), submitted on June 20, 1986, 1987 and all succeeding revisions and data submissions, is accurate and that the facility will be constructed and/or operated as specified in the application.

This permit is also based, in part, on the provisions of Sections 206, 207, 212 and 224 of HSWA which modify Sections 3002, 3004 and 3005 of RCRA. The Permittee's failure in the application or during the permit issuance process to disclose any fully relevant fact, or the Permittee's misrepresentation of any relevant fact at any time may be grounds for the termination, revocation and reissuance, or modification of this permit (see 40 C.F.R. §§ 270.41, 270.42 and 270.43) and potential enforcement action. The Permittee must inform EPA of any deviation from or changes in any information submitted which would affect the Permittee's ability to comply with the applicable statutes, regulations or permit conditions.

The permit is effective as of May 14, 1990 and shall remain in effect until May 14, 1995, unless revoked and reissued, modified, or terminated in accordance with 40 C.F.R. §§ 270.41, 270.42, or 270.43, or Section 212 of HSWA, or continued in accordance with 40 C.F.R. § 270.51(a).

Constantine Sidamon-Eristoff
Regional Administrator
U. S. Environmental Protection Agency
Region II

1/30/90
Date

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MODULE I - STANDARD CONDITIONS

A. EFFECT OF PERMIT. This permit authorizes only the management of hazardous wastes expressly described in this permit and does not authorize any other hazardous management activities. Compliance with the terms of this permit constitutes compliance, for purposes of enforcement, with the requirements of Subtitle C ("Hazardous Waste Management") of RCRA, as amended by HSWA, except for those requirements not included in the permit which become effective by statute, or which are promulgated under 40 C.F.R. Part 268 restricting the placement of hazardous waste in or on the land. Issuance of this permit does not convey any property rights of any sort, or any exclusive privilege; nor does it authorize any injury to persons or property, or invasion of other private rights, or any infringement of Commonwealth of Puerto Rico (hereafter referred to as the "Commonwealth") or local laws or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under Sections 3013 and/or Section 7003 of RCRA, 42 U.S.C. §§ 6934 and/or 6973, Sections 104, 106(a), 107 and/or 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), as amended, 42 U.S.C. 9601(a) et seq., or any other law, and applicable regulations, governing protection of public health or the environment. 40 C.F.R. §§ 270.4 and 270.30(g).

B. PERMIT ACTIONS. This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 C.F.R. §§ 270.41-270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. Review of any application for a permit renewal shall involve consideration of improvements in the state of control and measurement technology, as well as changes in applicable regulations. Section 3005(c)(3) of RCRA, 42 U.S.C. § 6925(c)(3).

C. PERMIT CONDITIONS. Pursuant to Section 3005(c)(3) of RCRA, 42 U.S.C. § 6925(c)(3), as amended by Section 212 of HSWA, promulgated as a regulation at 40 C.F.R. § 270.32(b), this permit contains those terms and conditions the Administrator determines necessary to protect human health and the environment. If not otherwise specified in this permit, all

the requirements of 40 C.F.R. §§ 270.30, 270.31, 270.32 and 270.33 are hereby incorporated into this permit.

D. PERMIT SUBMITTALS. All plans, reports and schedules required by the terms of this permit are unless otherwise specified, upon approval by EPA, incorporated into this permit. Any noncompliance with such approved studies, reports or schedules shall constitute a violation of this permit.

Unless otherwise specified, the Permittee shall revise all submittals as specified by EPA, and in accordance with RCRA, as amended by HSWA. EPA shall make all final determinations as to administrative and technical completeness of all submitted documents.

E. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. 40 C.F.R. § 124.16(a).

F. Duties and Requirements.

1. Duty to Comply. The Permittee shall comply with all conditions of this permit, except that the Permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized by an emergency permit (see 40 C.F.R. § 270.61). Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of the appropriate law and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. 40 C.F.R. § 270.30(a).

2. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 calendar days before this permit expires, unless the Regional Administrator grants permission for a later date which is not later than the expiration date of the existing permit, and obtains a new permit. 40 C.F.R. §§ 270.10(h) and 270.30(b).

3. Permit Expiration and Continuation. Unless modified pursuant to Condition K of this module, this permit

will be in effect for the time period stated on page i, which must not exceed five (5) years. However, as set forth in 40 C.F.R. § 270.51, as long as EPA is the permit issuing authority, this permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (under 40 C.F.R. § 270.14 and the applicable sections in §§ 270.15 to 270.23, and 270.10) and through no fault of the Permittee, the Regional Administrator has not issued a new permit as set forth in 40 C.F.R. Part 124.

If the Commonwealth, at the time of permit renewal, has permitting authority under 40 C.F.R. Part 271 and if the Permittee has submitted a timely and complete application under Commonwealth law and regulations, the terms and conditions of this permit continue in force beyond the expiration date of the permit, but only until the effective date of the Commonwealth's issuance or denial of a Commonwealth permit which includes measures pursuant to HSWA. 40 C.F.R. § 270.51(d).

4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. 40 C.F.R. § 270.30(c).

5. Duty to Mitigate. In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. 40 C.F.R. § 270.30(d).

6. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate sampling, laboratory and process controls, including appropriate quality assurance/quality control ("QA/QC") procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. 40 C.F.R. § 270.30(e).

7. Duty to Provide Information. The Permittee shall furnish to the Regional Administrator, within a reasonable time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit. 40 C.F.R. §§ 270.30(h) and 264.74(a).

8. Inspection and Entry. The Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   (a) Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   (c) Inspect at reasonable times any facilities, equipment(including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   (d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, as amended, any substances or parameters at any location. 40 C.F.R. §§ 270.30(i) and 264.74(a).

9. Monitoring and Records.

   (a) Representativeness of Samples and Measurements. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. 40 C.F.R. § 270.30(j)(1). The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 C.F.R. Part 261 or an equivalent sampling method approved by the Regional Administrator. 40 C.F.R. § 261.20(c). Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA Publication SW-846, Third Edition, 1986, as currently amended), and Standard Methods for the Examination

of Water and Waste Water (16th Edition, 1985, as currently amended), or an equivalent method approved by the Regional Administrator, as specified in the waste analysis plan in Attachment A to this Permit. 40 C.F.R. § 270.6.

(b) Retention of Records. The Permittee shall retain until closure of the facility, all records and data used to complete the application for this permit. The Permittee shall also retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and the certification required by 40 C.F.R. § 264.73(b)(9).

(c) Content of Monitoring Records. Records of monitoring information shall specify:

(i) The date(s), exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The sampling techniques or methods used;

(vi) The analytical techniques or methods used; and

(vii) The results of such analyses.

40 C.F.R. § 270.30(j)(3).

(d) Quality Assurance Program. The Permittee shall conduct a quality assurance program to ensure that the monitoring data are technically accurate and statistically valid. The quality assurance program shall be in accordance with Section 10 of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA Publication SW-846, Third Edition, 1987, as currently amended), and "Laboratory Data Validation, Functional Guidelines for Evaluating Organics Analyses" and "Evaluation of Metals Data for the Contract Laboratory

Program" established by the Regiona
Administrator, or an EPA-approved q
assurance program. 40 C.F.R. §§ 27
270.30(e).

(e) Monitoring Reports. Monitoring res
reported at the intervals specified
this permit. 40 C.F.R. § 270.30 (l

10. Reporting Planned Changes. The Permitte
notice to the Regional Administrator, as
possible, of any planned physical altera
additions to the permitted facility. 40
§ 270.30(l)(1).

11. Certification of Construction or Modific
APPLICABLE]

12. Anticipated Noncompliance. The Permitte
advance notice to the Regional Administr
planned changes in the permitted facilit
which may result in noncompliance with p
requirements. This notice must include a description of all incidents of noncompliance reasonably expected to result from the proposed changes. 40 C.F.R. § 270.30(l)(1) and (2).

13. Transfer of Permit. This permit is not transferable to any person unless notice has been given to the Regional Administrator and the permit has been modified, or revoked and reissued, or a modification made to identify the new permittee and to incorporate such other requirements as may be necessary. 40 C.F.R. §§ 270.30(l)(3) and 270.40.

14. Compliance Schedules. [SEE SPECIFIC MODULES II, III, IV, V, and VI]

No later than fourteen (14) days following each interim date and final date of compliance, the Permittee must notify the Regional Administrator in writing, of its compliance or noncompliance with the interim or final requirements. 40 C.F.R. § 270.33(a)(3) and 270.30(l)(5).

15. Immediate Reporting of Releases.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

Post-it™ telephone
BRAND
To
Date
WHILE YOU
M
of
Phone No.
TELEPHONED
WAS IN TO SEE YOU
WANTS TO SEE YOU
RETURNED YOUR CAI
Message

(i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(ii) Notify appropriate Commonwealth or local agencies with designated response roles if their help is needed. 40 C.F.R. § 264.56(a)(1) and (2).

(b) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(i) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(ii) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

a. Name and telephone number of reporter;

b. Name and address of facility;

c. Time and type of incident (e.g., release, fire);

d. Name and quantity of material(s) involved, to the extent known;

e. The extent of injuries, if any; and

f. The possible hazards to human health, or the environment, outside the facility.

40 C.F.R. § 264.56(d).

16. Twenty-four Hour Reporting. The Permittee shall verbally report to the Regional Administrator any noncompliance with the permit which may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances.

40 C.F.R. § 270.30(l)(6)(i). This report shall include the following:

(a) Information concerning the release of any hazardous waste which may cause an endangerment to public drinking water supply sources [40 C.F.R. § 270.30(l)(6)(i)(A)];

(b) Any information of a release or discharge of hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility [40 C.F.R. § 270.30(l)(6)(i)(B)];

(c) The description of the occurrence and its cause, as reported in Module I, Condition F.16(a) or (b) shall include:

(i) Name, address and telephone number of the owner or operator;

(ii) Name, address, and telephone number of the facility;

(iii) Date, time, and type of incident;

(iv) Name and quantity of material(s) involved;

(v) The extent of injuries, if any;

(vi) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

(vii) Estimated quantity and disposition of recovered material that resulted from the incident.

40 C.F.R. § 270.30(l)(6)(ii).

(d) A written submission shall also be provided to the Regional Administrator within five (5) calendar days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause;the period of noncompliance (including exact dates and times);whether the noncompliance has been corrected; and if the noncompliance has not been corrected, the anticipated time it is

expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee need not comply with the five day written notice requirement if the Regional Administrator waives that requirement and the Permittee submits a written report within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. 40 C.F.R. § 270.30(l)(6)(iii).

The oral reports required above may be made by contacting the EPA Region II 24-hour Emergency Response Center, at (201) 548-8730, or any designated telephone number which may subsequently replace it.

17. Unmanifested Waste Report. [NOT APPLICABLE]

18. Manifest Discrepancy Report. If a significant discrepancy (as defined by 40 C.F.R. § 264.72(a)) in a manifest is discovered, the Permittee must attempt to reconcile the discrepancy. If not resolved within 15 calendar days, the Permittee must submit a letter report to the Regional Administrator. The report must include a copy of the manifest and must meet the information requirements of 40 C.F.R. § 264.72.

19. Biennial Report. The Permittee shall prepare and submit a biennial report covering facility activities during odd numbered calendar years. This report shall be submitted to the Regional Administrator by March 1 of each even numbered calendar years and shall contain all of the information required by 40 C.F.R. § 264.75. 40 C.F.R. § 270.30(l)(9).

20. Additional Noncompliance Reporting. The Permittee shall report all instances of noncompliance (including release of hazardous waste, fire, or explosion) not required to be reported under Module I, Conditions F.9, F.14 or F.16. Such noncompliance shall be reported for each calendar quarter (i.e., January through March and each subsequent quarter) by no later than 30 calendar days after the end of the quarter. The reports shall contain the information listed in Module I, Condition F.16.(c), and all other relevant information. 40 C.F.R. § 270.30(l)(10).

21. Other Information. Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application, or in any report

to the Regional Administrator, the Permittee shall promptly submit such facts or information to the Regional Administrator. 40 C.F.R. § 270.30(l)(11).

G. Signatory Requirement. All applications, reports or other information submitted to the Regional Administrator shall be signed and certified as required by 40 C.F.R. §§ 270.11(b). 40 C.F.R. § 270.30(k).

H. Confidential Information. The Permittee may claim confidential, any information required to be submitted by this permit in accordance with 40 C.F.R. § 270.12 and 40 C.F.R. Part 2, Subpart B. 40 C.F.R. § 270.12(a).

I. Documents To Be Submitted Prior to Operation. [NOT APPLICABLE]

J. Documents to be Maintained at the Facility. In addition to a copy of this permit and any amendments, revisions, or modifications to the permit and its attachments, the following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility, except as noted.

A copy of the written operating record that was prepared in accordance with 40 C.F.R. § 264.73. This operating record shall include, at a minimum, the following information:

1. The location of each hazardous waste within the facility and the quantity at each location.

2. A copy of the waste analysis plan that was prepared in accordance with 40 C.F.R. § 264.13(b).

3. Records and results of waste analyses performed as specified in 40 C.F.R. §§ 264.13, 264.17, 264.314, 264.341, 268.4(a), and 268.7.

4. Summary reports and details of all incidents that require implementation of the contingency plan as specified in 40 C.F.R. § 264.56(j).

5. A copy of the written inspection plan and schedule prepared in accordance with 40 C.F.R. § 264.15(b) must be kept for the duration of the permit.

6. Records and results of inspections as required by 40 C.F.R. §§ 264.15(d), 264.174, 264.195(d) and 264.347(d). These data must be kept for the duration of the permit.

7. Personnel training documents and records that demonstrate continuous compliance with the requirements of 40 C.F.R. § 264.16(d).

8. A current copy of the contingency plan and all revisions to the plan, as required by 40 C.F.R. § 264.53(a).

9. A written closure plan and post-closure plan (if necessary), as required by 40 C.F.R. § 264.112(a).

10. A copy of the latest closure cost estimate prepared in accordance with 40 C.F.R. § 264.142(a) and (c) and, when this estimate has been adjusted in accordance with 40 C.F.R. § 264.142(b), the latest adjusted closure cost estimate, as required by 40 C.F.R. § 264.142(d).

11. Monitoring, testing, or analytical data where required by 40 C.F.R. Part 264, Subparts F, J, and O.

12. Records and results of waste analyses required by other parts of this permit to demonstrate compliance with the requirements of 40 C.F.R. Part 268 (Land Disposal Restrictions), except these data must be kept for the duration of the permit.

K. Permit Modifications. The permit may be modified as allowed under 40 C.F.R. §§ 270.41 and 270.42. Modifications to this permit may be made by the Regional Administrator for cause in accordance with 40 C.F.R. § 270.41. Modifications to the permit may also be requested by the Permittee as is provided for in 40 C.F.R. § 270.42.

L. Reports, Notifications and Submittals to the Regional Administrator. All reports, notifications or other submittals required by this permit are to be submitted to the Regional Administrator and sent certified mail or hand delivered to:

Regional Administrator
U.S. Environmental Protection Agency, Region II
26 Federal Plaza
New York, New York 10278

Copies shall also be sent to the following addresses:

U.S. Environmental Protection Agency, Region II
Hazardous Waste Facilities Branch
Air and Waste Management Division
26 Federal Plaza
New York, New York 10278

U.S. Environmental Protection Agency, Region II
Permits Administration Branch
Office of Policy and Management
26 Federal Plaza
New York, New York 10278

Commonwealth of Puerto Rico
Environmental Quality Board
P.O. Box 11488
Santurce, Puerto Rico 00910-1488

Attn: Land Pollution Control Area

M. DEFINITIONS. For the purpose of this permit, terms used herein shall the same meaning as those set forth in Title 40 of the Code of Federal Regulations (40 C.F.R. Parts 260 through 270), at the time of issuance of this permit, unless this permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

"EPA" means the United States Environmental Protection Agency.

"Facility" means all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combination of them).

"Hazardous constituents" means those constituents listed in Appendix VIII to 40 C.F.R. Part 261.

"Hazardous waste" means a hazardous waste as defined in 40 C.F.R. § 261.3 of this chapter.

"Regional Administrator" is the Regional Administrator of the United States Environmental Protection Agency for Region II, his designee or authorized representative.

"Release" for purposes of this permit includes, unless exempt under 40 C.F.R. § 262.4(a)(2), but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituent.

A "Solid Waste Management Unit" ("SWMU") includes any discernible waste management unit from which hazardous constituents have migrated or may migrate, irrespective of whether the unit was intended for the management of hazardous or solid wastes (as those terms are defined in §§ 1004(5) and (27) of RCRA, 42 U.S.C. §§ 6903(5) and (27) and the regulations promulgated pursuant to RCRA, 40 C.F.R. §§ 261.2 and 261.3). These units include, but are not limited to: landfills, surface impoundments, waste piles, land treatment units, tanks, elementary neutralization units, transfer stations, container storage areas, incinerators, injection wells, recycling units, and closed and abandoned units. Certain areas associated with production processes which have become contaminated as a result of routine, and systematic releases of wastes, or hazardous constituents from wastes, are also considered SWMUs.

N. DISPUTE RESOLUTION. The Permittee shall use its best effort to informally and in good faith resolve all disputes or differences of opinion. If, however, disputes arise concerning this permit, including, but not limited to, implementation of any plans, approval of documents, scheduling of any work, selection, performances or completion of any corrective action or any other obligation required under this permit, the Permittee shall notify EPA immediately of such disputes and within thirty (30) calendar days of notification the Permittee shall submit a written statement to EPA that argues the Permittee's position. The written statement shall set forth the Permittee's specific points of contention, the Permittee's position and reasons for maintaining its position, and any additional matters that the Permittee considers necessary or relevant for the EPA's determination. If the dispute cannot be resolved informally within sixty (60) calendar days of receipt of the written argument, EPA will provide the Permittee its decision on the dispute which shall be incorporated into the permit.

MODULE II - GENERAL FACILITY CONDITIONS

A. Design and Operation of Facility. The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

The Permittee is authorized to store only the hazardous wastes identified in Module IV and V, Condition B and to incinerate those hazardous wastes under the limitations in Module VI, Condition B.

B. Required Notice.

1. Hazardous Waste Imports--(NOT APPLICABLE--The Permittee is prohibited from importing hazardous wastes.)

2. Hazardous Wastes from Off-site Sources.

   a. Hazardous wastes generated off-site that may be received by the Permittee must be hazardous wastes generated by the off-site facility as a result of producing pharmaceutical products for Pfizer.

   b. When the Permittee is to receive hazardous waste from an off-site source, the Permittee must inform the generator in writing that he has the appropriate permits, and will accept the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the operating record. 40 C.F.R. § 264.12(b).

3. Within at least fourteen (14) calendar days prior to receiving hazardous wastes from off-site generators, the Permittee must notify EPA in writing. The notification must include, at a minimum, the identification and location of the generator, the EPA hazardous waste codes of the wastes, a description of the process(es) which generated the wastes, the maximum volume of hazardous wastes expected to be received, and the compatibility of the wastes with the Permittee's operation.

C. General Waste Analysis.

1. The Permittee shall follow the procedures described in the waste analysis plan, included as Attachment A to this permit, and conduct a quality assurance program as specified in Module I, Condition F.9.(d).

2. The Permittee shall verify its waste analysis as part of the quality assurance program. The quality assurance program will be in accordance with current EPA practices (Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, 1987, as currently amended, and the data validation procedures as established by the Regional Administrator) or equivalent methods approved by the Regional Administrator, and at a minimum, ensure that the Permittee maintains properly functioning instruments, uses approved sampling and analytical methods, as specified in 40 C.F.R. Part 261, Appendices I, II and III, assures the validity of sampling and analytical procedures, and performs correct calculations.

3. At a minimum, the waste analysis plan must include the following:

   (a) The parameters to be analyzed for in each hazardous waste, and the rationale for the selection of these parameters, as required by 40 C.F.R. § 264.13(b)(1);

   (b) The test methods which will be used to test for these parameters, as required by 40 C.F.R. § 264.13(b)(2);

   (c) The sampling method(s) which will be used to obtain a representative sample of the waste to be analyzed, as required by 40 C.F.R. § 264.13(b)(3); and

   (d) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date, as required by 40 C.F.R. § 264.13(b)(4).

4. The Permittee shall comply with the land disposal restriction provisions of 40 C.F.R. Part 268 by testing its waste or an extract developed using the test method described in Appendix I of 40 C.F.R. Part 268, or by using knowledge, based on documentation in the

Permittee's records, of the waste to determine if the waste is restricted from land disposal:

(a) If the Permittee determines that it is managing a restricted waste and the waste exceeds the applicable treatment standards, for each shipment of the restricted waste the Permittee must notify the treatment facility in writing of the appropriate treatment standard set forth in Subpart D of 40 C.F.R. Part 268. The notice must include the following information:

(i) EPA Hazardous Waste Number;

(ii) The corresponding treatment standards;

(iii) The manifest number associated with the shipment of waste; and

(iv) Waste analysis data, where available.

40 C.F.R. § 268.7(a)(1).

(b) If the Permittee determines that it is managing a restricted waste, and determines that the waste can be land disposed without further treatment, for each shipment of the restricted waste it must submit, to the land disposal facility, a notice and a certification stating that the waste meets applicable treatment standards.

(i) The notice must include the following information:

(A) EPA Hazardous Waste Number;

(B) The corresponding treatment standards;

(C) The manifest number associated with the shipment of wastes.

(D) Waste analysis data, where available.

(ii) The certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 C.F.R. Part 268, Subpart D and all applicable prohibitions set forth in 40 C.F.R. 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

40 C.F.R. § 268.7(a)(2).

(c) If the Permittee determines whether the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be maintained on-site in the Permittee's files. 40 C.F.R. § 268.7(a)(4).

5. The Permittee shall also comply with the modifications that have been made to the submitted waste analysis plan. These modifications are included below:

(a) The Permittee shall comply with said Waste Analysis Plan. The Permittee shall review and amend said Waste Analysis Plan whenever the facility permit is revised or when changes in plant processes affect the manner in which a specific waste is managed.

(b) The Permittee shall maintain records that provide a detailed chemical and physical analysis of a representative sample of each waste. At a minimum, the analysis shall contain all the information which must be known to treat, store, or dispose of the waste pursuant to 40 C.F.R. Parts 124, 261, 262, 264, 268, and 270.

(c) The Permittee shall repeat the analysis as necessary to ensure that it is accurate and up to date. At a minimum, the analysis shall be repeated when the Permittee is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed, unless the change will not result in a change in

the chemical or physical makeup of the waste material.

(d) The Permittee shall keep a copy of the waste analysis plan at the facility in accordance with the requirements of Module I, Condition J. of this permit.

D. Security. The Permittee shall comply with the security provisions of 40 C.F.R. § 264.14(a), (b) and (c), and shall follow the security plan outlined in Attachment B. At a minimum, the Permittee shall:

1. Provide a 24-hour surveillance system which continuously monitors and controls entry onto the active portions of the facility; or

2. Provide the following controls:

(a) An artificial or natural barrier which completely surrounds the active portions of the facility; and

(b) A means to control entry, at all times, through the gates or other entrances to the facility. 40 C.F.R. § 264.14(b).

3. The Permittee shall post and maintain a warning sign with the legend, "DANGER--Unauthorized Personnel Keep Out," at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to the active portion. The legend must be written in both English and Spanish and be legible from a distance of at least 25 feet. Existing signs, at the time of permit issuance, with a different legend may be used only if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. 40 C.F.R. § 264.14(c).

E. General Inspection Requirements. The Permittee shall follow the inspection plan and schedule included as Attachment B to this permit and demonstrate continuous compliance with 40 C.F.R. § 264.15. The Permittee must keep the inspection schedule at the facility as required by 40 C.F.R. § 264.15(b)(2). The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 40 C.F.R. § 264.15(c). Records of inspections shall be kept as required by 40 C.F.R. § 264.15(d). At a minimum, this inspection schedule must include the following:

1. Inspecting monitoring equipment, safety and emergency equipment, security devices, loading and unloading areas, and operating and structural equipment that are important for preventing, detecting, or responding to environmental or human health hazards, as required by 40 C.F.R. § 264.15(b)(1);

2. The schedule must identify the types of problems which are to be looked for during the inspection, as required by 40 C.F.R. § 264.15(b)(3);

3. The frequency of inspection, which is based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies as required in 40 C.F.R. § 264.15(b)(4); and

4. The specific remedy to be implemented when inspections disclose problems.

F. Personnel Training. The Permittee shall conduct personnel training as required by 40 C.F.R. § 264.16(a), (b) and (c). This training program shall follow the attached outline in Attachment C to this Permit. The Permittee shall maintain training documents and records as required by 40 C.F.R. § 264.16(d) and (e). At a minimum, the training program must include the following:

1. The program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures relevant to the positions in which they are employed, as required by 40 C.F.R. § 264.16(a)(2);

2. As required by 40 C.F.R. § 264.16(a)(3), the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

   (a) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(b) Key parameters for automatic waste feed cut-off systems;

(c) Communications or alarm systems;

(d) Response to fires or explosions;

(e) Response to groundwater contamination incidents; and

(f) Shut-down of operations.

3. In accordance with 40 C.F.R. § 264.16(b) and (c), provisions to ensure that:

(a) Facility personnel must successfully complete the program required by 40 C.F.R. § 264.16(a) within six (6) months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later;

(b) Employees do not work in unsupervised positions until they have completed the training requirements of 40 C.F.R. § 264.16(a); and

(c) Facility personnel take part in an annual review of the initial training required by 40 C.F.R. § 264.16(a).

G. General Requirements for Ignitable, Reactive, or Incompatible Waste.

The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste as required by 40 C.F.R. § 264.17 and as described in Attachment F to this Permit. The Permittee shall also document this compliance, as required by 40 C.F.R. § 264.17(c).

H. Location Standards. [NOT APPLICABLE]

I. Preparedness and Prevention.

1. Required Equipment. At a minimum, the Permittee shall equip the facility with the equipment set forth in the contingency plan, Attachment D to this Permit as required by 40 C.F.R. § 264.32.

2. Testing and Maintenance of Equipment. The Permittee shall test and maintain the equipment specified in the previous permit condition as necessary to assure its proper operation in time of emergency, as set forth in the Inspection Schedule (Attachment B to this Permit) and Module VI of this permit. 40 C.F.R. § 264.33.

3. Access to Communications or Alarm System. The Permittee shall maintain immediate access to the communications or alarm system as required by 40 C.F.R. § 264.34, in accordance with Attachment B to this Permit.

4. Required Aisle Space. At a minimum, the Permittee shall, in accordance with Attachments F and H, maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency as required by 40 C.F.R. § 264.35, and to provide access for the at least weekly inspections required by 40 C.F.R. § 264.174.

5. Arrangements with Local Authorities. The Permittee shall attempt to make arrangements with Commonwealth and local authorities as required by 40 C.F.R. § 264.37. If Commonwealth or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

J. Contingency Plan.

1. Implementation of Plan. The Permittee shall immediately carry out the provisions of the contingency plan, Attachment D, and follow the emergency procedures described by 40 C.F.R. § 264.56 whenever there is a fire, explosion, or any release of hazardous waste or hazardous waste constituents which threatens or could threaten human health or the environment.

2. Resumption of Hazardous Waste Activity. After any event requiring implementation of the contingency plan, the Permittee shall not resume hazardous waste management in the affected area until all equipment used during the contingency has been cleaned, recharged, or replaced, as appropriate.

3. Copies of Plan. The Permittee shall comply with the requirements of 40 C.F.R. § 264.53 which require that a copy of the contingency plan and all revisions to the plan must be:

(a) Maintained at the facility; and

(b) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

4. Amendments to Plan. The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 40 C.F.R. § 264.54. The plan must be reviewed whenever:

(a) The facility permit is revised;

(b) The plan fails in an emergency;

(c) The facility changes in design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

5. Contents of Contingency Plan. The Permittee must ensure that the contingency plan contains the information required by 40 C.F.R. § 264.52.

6. Emergency Coordinator. The Permittee shall comply with 40 C.F.R. § 264.55 at all times.

7. Emergency Procedures. The Permittee's emergency coordinator (or his designee when the emergency coordinator is on call) shall immediately implement the emergency procedures required by 40 C.F.R. § 264.56 whenever there is an imminent or actual emergency situation.

K. Manifest System. The Permittee shall comply with the manifest requirements of 40 C.F.R. §§ 264.71 and 264.72.

L. Recordkeeping and Reporting.

1. Operating Record. The Permittee shall maintain a written operating record at the facility in accordance with the applicable portions of 40 C.F.R. § 264.73.

2. Availability, Retention, and Disposition of Records. All records, including plans, must be made available to EPA in accordance with 40 C.F.R. § 264.74(a). The retention period for all records is extended automatically during any unresolved enforcement action regarding the facility or as requested by the Regional Administrator, as required by 40 C.F.R. § 264.74(b). A copy of records of waste disposal locations and quantities under § 264.73(b)(2) must be submitted to the Regional Administrator and local land authority upon closure of the facility as required by § 264.74(c).

3. Biennial Report. The Permittee shall comply with the biennial report requirements of 40 C.F.R. § 264.75, by March 1 of each even numbered year.

4. Unmanifested Waste Report. [NOT APPLICABLE]

5. Additional Reports. The Permittee shall comply with the additional reporting requirements set forth in 40 C.F.R. § 264.77. At a minimum, the Permittee shall report to the Regional Administrator:

   (a) Releases, fires, and explosions as specified in 40 C.F.R. § 264.56(j);

   (b) Facility closures as specified in 40 C.F.R. § 264.115; and

   (c) As otherwise required by 40 C.F.R. Part 264, Subparts F and K through N.

M. Closure and Post-Closure.

1. Performance Standard. The Permittee shall close the facility as required by 40 C.F.R. § 264.111 and in accordance with the closure plan, Attachments E.1 and E.2 to this Permit.

2. Requirement for Written Plan. In accordance with 40 C.F.R. § 264.112(a) and Module I, Condition J.9, of this permit, the Permittee shall maintain a copy of the written closure plan and post-closure plan, in the facility operating record.

3. Content of Closure Plan. The closure plan must identify the steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include all of the

information required by 40 C.F.R. § 264.112(b). At a minimum, the closure plan must include the following:

(a) A description of how each hazardous waste management unit at the facility will be closed in accordance with 40 C.F.R. § 264.111;

(b) A description of how final closure of the facility will be conducted in accordance with 40 C.F.R. § 264.111. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility; and

(c) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type(s) of the off-site hazardous waste management units to be used, if applicable; and

(d) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard; and

(e) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, groundwater monitoring, leachate collection, and run-on and run-off control; and

(f) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities

which will allow tracking of the progress of partial and final closure.

4. Amendment to Closure Plan. The Permittee shall submit a written request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the procedures given at 40 C.F.R. Parts 124 and 270. The written request must include a copy of the amended closure plan for approval by the Regional Administrator.

(a) The Permittee may submit a written request to the Regional Administrator for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

(b) The Permittee must submit a written request for a permit modification to authorize a change in the approved closure plan whenever:

(i) Changes in operating plans or facility design affect the closure plan, or

(ii) There is a change in the expected year of closure, if applicable, or

(iii) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

(c) The Permittee must submit a written request for a permit modification including a copy of the amended closure plan for approval at least sixty (60) calendar days prior to the proposed change in facility design or operation, or no later than sixty (60) calendar days after an unexpected event has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the Permittee must request a permit modification no later than thirty (30) calendar days after the unexpected event.

The Regional Administrator will approve, disapprove, or modify the amended plan in accordance with the procedures in 40 C.F.R. Parts 124 and 270. The approved closure plan will become a condition of the issued RCRA

permit, in accordance with 40 C.F.R. § 270.32. 40 C.F.R. § 264.112(c)(3).

(d) If the Regional Administrator requests modifications to the plan under the conditions of 40 C.F.R. § 264.112(c)(2), the Permittee must submit the modified plan within sixty (60) calendar days of the Regional Administrator's request, or within thirty (30) calendar days if the change in facility conditions occurs during partial or final closure. 40 C.F.R. § 264.112(c)(4).

5. Notification of Partial Closure and Final Closure.

(a) The Permittee must notify the Regional Administrator in writing at least forty-five (45) calendar days prior to the date upon which the Permittee expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed.

(b) The date when the Permittee "expects to begin closure" must be either no later than thirty (30) calendar days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste.

(c) If this permit is terminated, or if the Permittee is otherwise ordered, by judicial decree or final order under Section 3008 of RCRA, to cease receiving hazardous waste or to close, then the requirements of Module II, Conditions M.5(a) and (b) do not apply. However, the Permittee must still close the facility in accordance with the deadlines established in 40 C.F.R. § 264.113 and Condition M.7 of this Module.

6. Removal of Wastes and Decontamination or Dismantling of Equipment. Nothing in this permit shall preclude the Permittee from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at anytime before or after notification of partial or final closure. 40 C.F.R. § 264.112(e).

7. Time Allowed for Closure. After receiving the final volume of hazardous waste, the Permittee shall treat, remove from the unit or facility, or dispose of on-site, all hazardous waste and shall complete closure activities in accordance with the schedule specified in the closure plan, Attachment E.1 and the requirements of 40 C.F.R. § 264.113. The Permittee shall:

   (a) Within ninety (90) calendar days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, treat, remove from the unit, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan; and

   (b) Complete partial and final closure activities in accordance with the approved closure plan and within one hundred and eighty (180) calendar days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility.

8. Disposal or Decontamination of Equipment. During all partial and final closure periods, the Permittee shall properly dispose of or decontaminate contaminated equipment, structures, and soils as required by 40 C.F.R. § 264.114 and as outlined in the closure plan, Attachment E, unless otherwise specified in 40 C.F.R. §§ 264.178, 264.197 and 264.351. By removing any hazardous waste or hazardous constituents during partial and final closure, the Permittee may become a generator of hazardous waste and must handle that waste in accordance with all applicable requirements of 40 C.F.R. Part 262.

9. Certification of Closure. As required by 40 C.F.R. § 264.115, within sixty (60) calendar days of completion of closure of each hazardous waste unit, and within sixty (60) calendar days of the completion of final closure, the Permittee shall submit to the Regional Administrator, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the Permittee and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Regional Administrator upon request, until he releases the Permittee from the

financial assurance requirements for closure under 40 C.F.R. § 264.143(i).

N. Cost Estimate for Facility Closure. The Permittee's closure cost estimate on the effective date of this permit, prepared in accordance with 40 C.F.R. § 264.142(a), is specified in Attachment E, which will be up-dated annually.

1. During the active life of the facility, the Permittee must adjust the closure cost estimate for inflation on or before March 29th of each year in accordance with the requirements of 40 C.F.R. § 264.143. The adjustment to the closure cost estimate must be made in accordance with the requirements of 40 C.F.R. § 264.142(b).

2. The Permittee must revise the closure cost estimate no later than thirty (30) calendar days after the Regional Administrator has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in 40 C.F.R. § 264.142(b).

3. The Permittee must keep at the facility the latest closure cost estimate as required by 40 C.F.R. § 264.142(d) and Module I, Condition J.10, of this permit.

O. Financial Assurance for Facility Closure. The Permittee shall demonstrate continuous compliance with 40 C.F.R. § 264.143, and/or, when applicable, with 40 C.F.R. §§ 264.145, 264.146, and 264.149, by providing documentation of financial assurance, as required by 40 C.F.R. § 264.151 or when applicable, § 264.149, in at least the amount of the cost estimates required by Condition N of Module II.

1. Within 30 calendar days, the Permittee shall submit to EPA for review and approval, documentation of financial assurance, as required by 40 C.F.R. § 264.151 or when applicable, § 264.149, in at least the amount of the cost estimates required by Condition N of Module II.

2. Changes in financial assurance mechanisms must be approved by the Regional Administrator pursuant to 40 C.F.R. § 264.143, and/or when applicable § 264.145, and/or § 264.149.

P. Liability Requirements. The Permittee shall demonstrate continuous compliance with the requirements of 40 C.F.R. § 264.147 and the documentation requirements of 40 C.F.R. § 264.151, including requirements to have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs.

Q. Incapacity of Owners or Operators, Guarantors, or Financial Institutions. The Permittee shall comply with 40 C.F.R. § 264.148 whenever necessary.

MODULE III
CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

A. SUMMARY OF CORRECTIVE ACTION PROCESS.

Section 3004(u) of RCRA, 42 U.S.C. § 6924(u), (Section 206 of HSWA) and its corresponding regulations published in Title 40 Code of Federal Regulations (40 C.F.R.) § 264.101 require corrective action for all releases of hazardous wastes, including hazardous constituents, from any solid waste management unit ("SWMU"), regardless of when wastes were placed in the unit. The corrective action implementation process, as described under Section 3004(u), consists of a RCRA Facility Assessment ("RFA"), and if necessary, a RCRA Facility Investigation ("RFI"), a Corrective Measures Study ("CMS"), and a Corrective Measures Implementation ("CMI") phase.

The RFA is a three phase study that includes a Preliminary Review ("PR"), a Visual Site Inspection ("VSI") and a Sampling Visit ("SV"). The Preliminary Review ("PR"), which must be conducted at all treatment, storage and disposal facilities seeking a RCRA permit, is a review of all available information on the individual SWMUs. During the PR, and in subsequent phases of the RFA, all of the media (i.e., soil, groundwater, surface water, air, and subsurface gas) that could be impacted by such potential releases of hazardous waste or hazardous constituents are evaluated. Based on this review, the SWMUs are characterized as to their release potentials.

Following this review, a Visual Site Inspection ("VSI") is conducted during which all of the SWMUs, either previously or newly discovered, are observed. While performing this reconnaissance, the inspector looks for any signs of spills or leakage, stained soil, stressed vegetation, unit deterioration, or any other conditions that may be indicative of a release. By means of these observations and the findings of the PR, the reviewer may recommend sampling at those areas where releases are suspected.

The Sampling Visit ("SV") can involve any or all of the previously described media at any given SWMU. For those units where releases are clearly demonstrated in the PR and/or VSI, the SV can be eliminated leaving the unit(s) to be addressed in the RFI.

The last aspect of the RFA involves preparing the RFA report. This report includes the findings of the various RFA activities and recommendations for further action at

those units with demonstrated releases of hazardous wastes, including hazardous constituents. In some cases, where an immediate threat to human health or the environment exists, interim corrective measures may be required.

If the RFA concludes that there is a need for further investigative work, the Permittee shall be required to perform a RCRA Facility Investigation ("RFI"). The purpose of the RFI is to determine the nature, extent and rate of migration of hazardous wastes, including hazardous constituents, in various media such as soils, groundwater, surface water, subsurface gas, and/or air. Based on these multimedia analyses, the types of contaminants present, the boundaries of any contamination (e.g., plumes), and the rate of contaminant movement can be determined. Once these analyses are reviewed, a RFI report is prepared that provides a summation of the data and recommendations for any needed remediation.

The next step in the corrective action process is the Corrective Measures Study ("CMS"). Initially, this study involves a comprehensive research effort aimed at determining the most environmentally beneficial corrective measure(s) for each contaminated SWMU. Once this research component of the CMS is completed, bench and pilot scale testing is performed to evaluate the field applicability of each proposed corrective measure. The results of this testing, a description of the research activities, and recommended corrective measures are presented in a CMS report submitted by the Permittee to EPA.

The culmination of the corrective action process is the Corrective Measures Implementation ("CMI") phase. In this phase, the EPA approved corrective measures recommendations of the CMS report are implemented through a permit modification.

The conditions of this Module apply to:

(1) All the SWMUs and areas of concern (AOCs) described in this Module and the RFA Report (Attachment G); and

(2) Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits or other means, subsequent to the issuance of the permit.

B. SUMMARY OF RFA FINDINGS AND INFORMATIONAL REQUIREMENTS

RFA Results

EPA conducted the RFA for Pfizer Pharmaceuticals, Inc. ("the Permittee"). The RFA Report is included as Attachment J to this Permit. This report is the result of a preliminary review (PR) of available information on the facility and a visual site inspection (VSI). This RFA identified the following solid waste management units and areas of concern:

SWMU #1: Waste Storage Tank/Fire Protection Tank
2: Waste Storage Tank/Fuel Oil Tank
3: 47,000-Gallon Waste Storage Tank Area
4: 5,000-Gallon Spent Solvents Tank
5: Evaporator/Incinerator
6: Thermal Research & Engineering Co. Liquid Waste Incinerator
7: Solid Waste Incinerator
8: Rotary Kiln Incinerator (Regulated)
9: Three 38,000-Gallon Waste Equalization and Neutralization Tanks
10: Drum Storage Areas
11: Solvent Recovery Facilities

Based on the RFA, EPA has determined the following:

1. A RCRA Facility Investigation (RFI) is warranted for SWMUs #11 and possibly #3 because EPA has determined that a release of hazardous waste and/or hazardous constituents has occurred in these areas. If PPI can demonstrate that the phthalate concentration at SWMU #11 is below recommended action levels, a RCRA facility investigation would not be required for SWMU #3.

2. no further action is recommended for SWMUs #1, 2, 4, 5, 6, 7, 8, 9, and 10 because EPA has made a present determination that there is no evidence of a release having occurred or is occurring from these units and areas.

C. STANDARD CONDITIONS

1. Failure to submit the information required in this Corrective Action Schedule of Compliance, or falsification of any submitted information, is grounds for termination of this Permit (40 C.F.R. § 270.43). The Permittee shall ensure that all plans, reports, notifications, and other submissions to the Regional

Administrator required in this Corrective Action Schedule of Compliance are signed and certified in accordance with 40 C.F.R. § 270.11. Copies of these plans, reports, notifications or other submissions shall be submitted to the Regional Administrator and sent by certified mail or hand delivered to:

Regional Administrator
U.S. Environmental Protection Agency, Region II
26 Federal Plaza
New York, N.Y. 10278

U.S. Environmental Protection Agency, Region II
Chief of the Hazardous Waste Facilities Branch
Air and Waste Management Division
26 Federal Plaza
New York, N.Y. 10278

U.S. Environmental Protection Agency, Region II
Permit Administration Branch
Office of Policy and Management
26 Federal Plaza
New York, N.Y. 10278

Commonwealth of Puerto Rico
Environmental Quality Board
Land Pollution Control Area
P.O. Box 11488
Santurce, Puerto Rico 00910-1488

2. All plans and schedules required by the conditions of this Corrective Action Schedule of Compliance are, upon approval of the Regional Administrator, incorporated into this Corrective Action Schedule of Compliance by reference and become an enforceable part of this Permit. Any noncompliance with such approved plans and schedules shall be termed noncompliance with this Permit. Extensions of the due dates for submittals may be granted by the Regional Administrator in accordance with the permit modification processes under 40 C.F.R. § 270.41.

3. If the Regional Administrator determines that further actions beyond those provided in this Corrective Action Schedule of Compliance, or changes to that which is stated herein, are warranted, the Regional Administrator shall modify the Corrective Action Schedule of Compliance accordingto the permit modification processes under 40 C.F.R. § 270.41.

4. All raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to this Corrective Action Schedule of Compliance, including any reissued Permits, shall be maintained at the facility (or other location approved by the Regional Administrator) during the term of this Permit.

D. REPORTING REQUIREMENTS

1. The Permittee shall submit, to the Regional Administrator, signed bi-monthly progress reports of all activities (i.e., SWMU Assessment, Interim Measures, RFI Workplan, RFI Report, Corrective Measures Study) conducted pursuant to the provisions of this Corrective Action Schedule of Compliance, beginning no later than one hundred and twenty (120) calendar days after date upon which the Permit becomes effective. All subsequent reports will be sent as per the schedule set out in the RFI workplan. These reports shall contain:

   a. A description of the work completed;

   b. Summaries of all findings, including summaries of laboratory data;

   c. Summaries of deviations from plans implemented;

   d. Summaries of all contacts made with representatives of local community and public interest groups during the reporting period;

   e. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems; and

   f. Projected work for the next reporting period and proposed modifications to plans.

2. Upon request, copies of other reports (e.g., inspection reports), drilling logs and laboratory data shall be made available to the Regional Administrator upon request.

3. As specified under Permit Condition C.3, as needed, the Regional Administrator may require the Permittee to conduct new or more extensive assessments, investigations, or studies, as needed, based upon

information provided in the progress reports or upon other supporting information.

E. NEWLY-IDENTIFIED SOLID WASTE MANAGEMENT UNIT(S) AND NEWLY-DISCOVERED RELEASES

1. Notification Requirements.

The Permittee shall notify the Regional Administrator in writing of any newly-identified SWMU(s) (i.e., a unit not specifically identified during the RFA), discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after discovery.

2. Within forty-five (45) calendar days after notification of the discovery of newly-identified SWMU(s), the Permittee shall prepare a SWMU Assessment Plan for determining past and present operations at the unit, as well as any sampling and analysis of groundwater, land surface and subsurface strata, surface water or air, as necessary to determine whether a release of hazardous waste, including hazardous constituents, from such unit(s) has occurred, is likely to have occurred, or is likely to occur. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste, including hazardous constituents, from the newly-discovered SWMU(s) to the environment.

3. After the Permittee submits the SWMU Assessment Plan, the Regional Administrator shall either approve or disapprove of the SWMU Assessment Plan in writing.

If the Regional Administrator approves the SWMU Assessment Plan, the Permittee shall begin to implement the approved SWMU Assessment Plan within thirty (30) calendar days of receiving such written notification.

If the Regional Administrator disapproves the SWMU Assessment Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the SWMU Assessment Plan's deficiencies and specify a due date for submittal of a revised SWMU Assessment Plan, or (2) revise the SWMU Assessment Plan and notify the Permittee of the revisions. This SWMU Assessment Plan, as revised by the Regional Administrator, becomes the approved SWMU Assessment Plan. The Permittee shall

implement the SWMU Assessment Plan within fifteen (15) calendar days of receiving written approval.

4. The Permittee shall submit a SWMU Assessment Report to the Regional Administrator no later than thirty (30) calendar days from completion of the work specified in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan. At a minimum, the Report shall provide the following information for each newly-identified SWMU:

   a. The location of the newly-identified SWMU in relation to other SWMUs;

   b. The type and function of the unit;

   c. The general dimensions, capacities, and structural description of the unit (supply any available drawings);

   d. The period during which the unit was operated;

   e. The specifics on all wastes that have been or are being managed at the SWMU, to the extent available; and

   f. The results of any sampling and analysis required for the purpose of determining whether releases of hazardous wastes, including hazardous constituents, have occurred, are occurring, or are likely to occur from the unit.

5. Based on the results of this SWMU Assessment Report, the Regional Administrator shall determine the need for further investigations at specific unit(s) covered in the SWMU Assessment. If the Regional Administrator determines that such investigations are needed, the Regional Administrator may require the Permittee to prepare a plan for such investigations. This plan will be subject to EPA review for approval as part of the RFI Workplan under Permit Condition F.1.d of this Corrective Action Schedule of Compliance.

6. <u>Notification Requirements For Newly discovered Releases at SWMUs</u>

   The Permittee shall notify the Regional Administrator, in writing, of any release(s) of hazardous waste, including hazardous constituents, discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken

after the commencement of the RFI, no later than fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified units, from units for which, based on the findings of the RFA, the Regional Administrator had previously determined that no further investigation was necessary, or from units investigated as part of the RFI. The Regional Administrator may require further investigation of the newly-identified release(s). A plan for such investigation will be reviewed for approval as part of the RFI Workplan under Permit Condition F.1.d.

F. RCRA FACILITY INVESTIGATION (RFI)

1. RFI WORKPLAN

a. Within one hundred and eighty (180) calendar days after the effective date of this Permit, the Permittee shall submit a RFI Workplan to the Regional Administrator to address those units or areas of concern, releases of hazardous waste including hazardous constituents, and media of concern which require the further investigations as specified in Condition B of this Module.

i. The RFI Workplan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste including hazardous constituents from specific units or groups of units, and their actual or potential receptors. The RFI Workplan shall detail all proposed activities and procedures to be conducted at the facility, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI.

ii. The RFI Workplan shall discuss sampling and data collection quality assurance and data management procedures, including formats for documenting and tracking data and other results of investigations, and health and safety procedures.

iii. The RFI Workplan must, at a minimum, address all necessary activities or include descriptions to meet the requirements specified in Tasks III through Task V of the Scope of Work for a RCRA Facility Investigation included in this Permit as Attachment K. If any of the items required by Task III through V of the Scope of Work have already been submitted or completed, the Permittee, for those items, may instead provide the following in the RFI workplan: (i) description of the items and/or summary of findings; and (ii) description of investigations addressing the items, documents/reports of the investigations with dates, and summary of the findings. The Permittee must provide copies of any document/report to the Regional Administrator upon request. EPA will determine the adequacy and/or the extent to which prior submissions or completions may satisfy specific items required by this Permit.

b. After the Permittee submits the RFI Workplan, the Regional Administrator will either approve or disapprove of the RFI Workplan in writing.

If the Regional Administrator disapproves the RFI Workplan, the Regional Administrator shall either (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submittal of a revised Plan, or (2) revise the RFI Workplan and notify the Permittee of the revisions. This modified RFI Workplan becomes the approved RFI Workplan.

c. The Regional Administrator shall review for approval as part of the RFI Workplan any plans developed pursuant to Permit Condition E.5, addressing further investigations of newly-identified SWMUs, or Condition E.6, addressing new releases from previously identified units. The Regional Administrator shall modify the Corrective Action Schedule of Compliance either according to procedures in Section J of this Permit, or according to the permit modification procedures under 40 C.F.R. § 270.41, to incorporate these units and releases into the RFI Workplan.

2. Scope of Work.

General Requirements. The RFI Workplan required by Conditions E.5, E.6, and F.1 shall, at a minimum, address the requirements of the Scope of Work included as Attachment K to this permit. The RFI shall be conducted in accordance with the approved RFI Workplan and Attachment K. The Permittee shall provide written justification for any omissions or deviations from the minimum requirements of Attachment K.

The Permittee shall perform the following Tasks for the SWMUs (or AOCs) identified in Condition B of this Module to require a RFI:

a. Task I--Description of Current Conditions: The Permittee shall perform this task for the SWMUs identified at Condition A of this module. If applicable, this task shall be completed and submitted along with the RFI Workplan described in Task III.

b. Task II--Pre-Investigation Evaluation of Corrective Measure Technologies: Where applicable, the Permittee shall address Task II in accordance with Attachment K in preparing the RFI workplan. This output shall be submitted along with the RFI Workplan of Task III.

c. Task III--RFI Workplan Requirements: Within one hundred and eighty (180) calendar days from the effective date of this Permit, the Permittee shall submit a RFI Workplan which addresses Task III and designed to obtain data and information described in Task IV, in Attachment K to this Permit.

d. Task VII--Reports to be submitted during the RFI phase: The Permittee shall comply with the requirements of Task VII of Attachment K to this Permit.

3. RCRA FACILITY INVESTIGATION WORKPLAN IMPLEMENTATION

a. No later than thirty (30) calendar days after the Permittee has received written approval from the Regional Administrator for the RFI Workplan, the Permittee shall begin implementation of the RCRA Facility Investigation according to the schedules specified in the RFI Workplan. Pursuant to Permit Condition F.3, the RFI shall be conducted in accordance with the approved RFI Workplan.

b. Specific Requirements.

The Permittee shall perform the following Tasks:

1) Task IV--Facility Investigation: The Permittee shall complete Task IV in Attachment K in accordance with the schedule in the approved RFI Workplan.

2) Task V--Investigation Analysis: Upon completion of Task IV the Permittee shall conduct an investigation analysis in accordance with Task V in Attachment K. Task V shall be completed in accordance with the schedule in the approved RFI Workplan.

3) Task VII--Reports to be submitted during the RFI phase: The Permittee shall comply with the requirements of Task VII of Attachment K.

4. RCRA FACILITY INVESTIGATION FINAL REPORT AND SUMMARY REPORT

a. Within one hundred and twenty (120) calendar days after completion of the RFI sampling activity, the Permittee shall submit a RFI Final Report and a RFI Summary Report.

i. The RFI Report shall describe the procedures, methods, and results of all facility investigations of SWMUs and their releases, including information on the type and extent of contamination at the facility, sources and migration pathways, and actual or potential receptors. The RFI Final Report shall present all information gathered under the approved RFI Workplan. The RFI Final Report must contain adequate information to support further corrective action decisions at the facility.

ii. The RFI Summary Report shall describe more briefly the procedures, methods, and results of the RFI.

b. After the Permittee submits the RFI Final Report and Summary Report, the Regional Administrator shall either approve or disapprove the Reports in writing.

If the Regional Administrator approves the RFI Final Report and Summary Report, the Permittee

shall mail the approved Summary Report to all individuals on the facility mailing list established pursuant to 40 C.F.R. § 124.10(c)(1)(viii), within fifteen (15) calendar days of receipt of approval.

If the Regional Administrator determines the RFI Final Report and Summary Report do not fully detail the objectives stated under Permit Condition F.1, the Regional Administrator may disapprove the RFI Final Report and Summary Report. If the Regional Administrator disapproves the Reports, the Regional Administrator shall notify the Permittee in writing of the RFI Final Report's deficiencies and specify a due date for submittal of a revised RFI Final Report and Summary Report forty-five (45) calendar days after notification. The Summary Report, once approved, shall be mailed to all individuals on the facility mailing list.

G. INTERIM MEASURES

1. The following specific interim measures have been identified by the Regional Administrator:

   [NOT APPLICABLE AT TIME OF PERMIT ISSUANCE]

2. If during the course of any activity initiated under this Corrective Action Schedule of Compliance, the Regional Administrator determines that a release or potential release of hazardous waste, including hazardous constituents, from a SWMU poses a threat to human health and the environment, the Regional Administrator may specify interim measures. The Regional Administrator shall determine the specific action(s) that must be taken to implement the interim measure, including potential permit modifications and the schedule for implementing the required measures. The Regional Administrator shall notify the Permittee, in writing, of the requirement to perform such interim measures. The Regional Administrator shall modify the Corrective Action Schedule of Compliance either according to procedures in Section J of this Permit, or according to the permit modification procedures under 40 C.F.R. § 270.41, to incorporate such interim measures into the Permit.

3. At a minimum, the following factors shall be considered by the Regional Administrator in determining the need for interim measures:

a. Time required to develop and implement a final remedy;

b. Actual and potential exposure of human and environmental receptors;

c. Actual and potential contamination of drinking water supplies and sensitive ecosystems;

d. The potential for further degradation of the medium absent interim measures;

e. Presence of hazardous waste and/or hazardous constituents in containers that may pose a threat of release;

f. Presence and concentration of hazardous waste and/or hazardous constituents, in soils that have the potential to migrate to groundwater or surface water;

g. Weather conditions that may affect the current levels of contamination;

h. Risks of fire, explosion, or accident; and

i. Other situations that may pose threats to human health and the environment.

4. Financial Assurance For Interim Measures.

The Permittee must submit to EPA, within thirty (30) calendar days of the effective date of this Permit, documents establishing financial assurance for conducting the Interim Measures specified at Condition G.1 of this module. The Permittee must continue to demonstrate financial assurance unless otherwise notified by EPA.

H. DETERMINATION OF NO FURTHER ACTION

1. Based on the results of the RFI and other relevant information, the Permittee may submit an application to the Regional Administrator for a Class III permit modification under 40 C.F.R. § 270.42(c) to terminate the Corrective Action Schedule of Compliance. See also 53 Fed. Reg. 37912. This permit modification application must contain information demonstrating that there are no releases of hazardous wastes, including hazardous constituents, from SWMUs at the facility that pose a threat to human health and the environment, as

well as information required in 40 C.F.R. § 270.42(c), which incorporates by reference 40 C.F.R. § 270.13 through §§ 270.21, 270.62, and 270.63.

If, based upon review of the Permittee's request for a permit modification, the results of the RFI, and other information, including comments received during the 60-day public comment period required for Class III permit modifications, the Regional Administrator determines that releases or suspected releases which were investigated either are nonexistent or do not pose a threat to human health and the environment, the Regional Administrator will grant the requested modification.

2. A determination of no further action shall not preclude the Regional Administrator from requiring continued or periodic monitoring of air, soil, groundwater, or surface water, when site-specific circumstances indicate that releases of hazardous wastes, including hazardous constituents, are likely to occur, if necessary to protect human health and the environment.

3. A determination of no further action shall not preclude the Regional Administrator from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU at the facility that is likely to pose a threat to human health or the environment. In such a case, the Regional Administrator shall initiate either a modification to the Corrective Action Schedule of Compliance according to procedures in Condition K of this Permit, or a major permit modification according to 40 C.F.R. § 270.41, to rescind the determination made in accordance with Permit Condition H.1 of this module.

I. CORRECTIVE MEASURES

1. The Regional Administrator may require a Corrective Measures Study ("CMS") under the following conditions:

   a. With respect to constituents listed in Attachment N:

      if there is reason to believe that there are released constituents with concentrations in excess of the action levels listed;

b. With respect to hazardous constituents discovered during the RFI and not listed in Attachment N:

i) the Regional Administrator shall develop action level(s) for the constituent(s), and

ii) if there is reason to believe that there are released constituents with concentrations in excess of the action level developed; and

c. With respect to constituents released below action levels listed in Attachment N or developed later:

if given the site-specific exposure conditions, the Regional Administrator determines that the contaminants present pose a threat to human health and the environment.

Should a CMS be required, the Regional Administrator shall notify the Permittee in writing. This notice shall identify the hazardous constituent(s) which have exceeded action levels as well as those which have been determined to threaten human health and the environment given site-specific conditions. The notification may also specify remedial alternatives to be evaluated by the Permittee during the CMS.

2. The Permittee shall submit a CMS Plan to the Regional Administrator within ninety (90) calendar days from notification of the requirement to conduct a CMS.

a. The CMS Plan shall include, at a minimum, the following:

i) a description of the general approach to investigating and evaluating potential remedies;

ii) a definition of the overall objectives of the study;

iii) the specific plans for evaluating remedies to ensure compliance with remedy standards;

iv) the schedule for conducting the study; and

v) the proposed format for the presentation of information.

b. If the Regional Administrator disapproves the CMS Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CMS Plan's

deficiencies and specify a due date for submittal of a revised Plan, or (2) modify the CMS Plan and notify the Permittee of the modifications. This modified CMS Plan becomes the approved CMS Plan.

3. CORRECTIVE MEASURES STUDY IMPLEMENTATION

a. No later than thirty (30) calendar days after the Permittee has received written approval from the Regional Administrator for the CMS Plan, the Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Plan. Pursuant to Permit Condition I.3, the CMS shall be conducted in accordance with the approved Plan.

b. The Permittee shall conduct the following Tasks:

i. Task VI--Laboratory and Bench Scale Studies: The Permittee shall conduct Task VI in accordance with Attachment K or provide justification why Task VI is not needed. Task VI shall be completed within sixty (60) calendar days of approval of the CMS Plan.

ii. Task VIII--Identification and Development of the Corrective Measure Alternative or Alternatives: The Permittee shall conduct Task VIII in accordance with Attachment L. This task shall be completed within one hundred and twenty (120) calendar days after approval of the CMS Plan.

iii. Task IX--Evaluation of the Corrective Measure Alternative or Alternatives: The Permittee shall conduct Task IX in accordance with Attachment L. This task shall be completed within one hundred and twenty (120) calendar days after approval of the CMS Plan.

iv. Task X--Justification and Recommendation of the Corrective Measures: The Permittee shall conduct Task X in accordance with Attachment L. This task shall be completed within one hundred and twenty (120) calendar days from approval of the CMS Plan.

v. Task XI--Corrective Measure Study Reports: The Permittee shall comply with the requirements of Task XI of Attachment L. A report of the corrective measure study shall be submitted within

one hundred and twenty (120) calendar days from approval of the CMS Plan. The report should be prepared in accordance with Task XV in Attachment L to this permit.

4. CORRECTIVE MEASURES STUDY FINAL REPORT

a. Within one hundred and twenty (120) calendar days after the completion of the CMS, the Permittee shall submit a CMS Report. The CMS Report shall summarize the results of the investigations for each remedy studied and of any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. The CMS Report shall present all information gathered under the approved CMS Plan. The report must contain adequate information to support the Regional Administrator in the remedy selection decision-making process, described under Condition I.5 of this module.

b. If the Regional Administrator determines that the CMS Report does not fully satisfy the information requirements specified under Permit Condition I.3, the Regional Administrator may disapprove the CMS Report. If the Regional Administrator disapproves the CMS Report, the Regional Administrator shall notify the Permittee in writing of deficiencies in the CMS Report and the Permittee shall submit a revised CMS Report within forty-five (45) calendar days after notification. The EPA-approved CMS Report shall be the CMS Final Report.

c. As specified under Permit Condition C.4, based on preliminary results and the CMS Final Report, the Regional Administrator may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

5. REMEDY SELECTION

a. Based on the results of the CMS and any further evaluations of additional remedies under this study, the Regional Administrator shall select a remedy from the remedial alternatives evaluated in the CMS that will

i. be protective of human health and the environment;

ii. meet the concentration levels of hazardous constituents in each medium that the remedy must achieve to be protective of human health and the environment;

iii. control the source(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases that might pose a threat to human health and the environment; and

iv. meet all applicable waste management requirements.

b. In selecting the remedy which meets the standards for remedies established under Permit Condition I.5.a, the Regional Administrator shall consider the following evaluation factors, as appropriate:

i. Long-term reliability and effectiveness. Any potential remedy(s) may be assessed for the long-term reliability and effectiveness it affords, along with the degree of certainty that the remedy will prove successful. Factors that shall be considered in this evaluation include:

a) Magnitude of residual risks in terms of amounts and concentrations of waste remaining following implementation of a remedy, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes, including hazardous constituents;

b) The type and degree of long-term management required, including monitoring and operation and maintenance;

c) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal or containment;

d) Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated wastes and residuals; and

e) Potential need for replacement of the remedy.

ii. Reduction of toxicity, mobility, and volume. A potential remedy(s) may be assessed as to the degree to which it employs treatment that reduces toxicity, mobility or volume of hazardous wastes, including hazardous constituents. Factors that shall be considered in such assessments include:

a) The treatment processes the remedy(s) employs and materials it would treat;

b) The amount of hazardous wastes, including hazardous constituents, that would be destroyed or treated;

c) The degree to which the treatment is irreversible; and

d) The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes, including hazardous constituents.

iii. The short-term effectiveness of a potential remedy(s) may be assessed considering the following:

a) Magnitude of reduction of existing risks;

b) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment; and

c) Time until full protection is achieved.

iv. Implementability. The ease or difficulty of implementing a potential remedy(s) may be assessed by considering the following types of factors:

a) Degree of difficulty associated with constructing the technology;

b) Expected operational reliability of the technologies;

c) Need to coordinate with and obtain necessary approvals and permits from other agencies;

d) Availability of necessary equipment and specialists; and

e) Available capacity and location of needed treatment, storage and disposal services.

v. Cost. The types of costs that may be assessed include the following:

a) Capital costs;

b) Operation and maintenance costs;

c) Net present value of capital and operation and maintenance costs; and

d) Potential future remedial action costs.

J. PERMIT MODIFICATION FOR REMEDY

1. Based on information the Permittee submits in the RFI Final and Summary Reports, the CMS Final Report, and other information, the Regional Administrator will select a remedy and initiate a Class III permit modification to this Permit, pursuant to 40 C.F.R. § 270.41.

The modification shall specify the selected remedy and include, at a minimum, the following:

a. Description of all technical features of the remedy that are necessary for achieving the standards for remedies established under Permit Condition I.5.a, including length of time for which compliance must be demonstrated at specified points of compliance;

b. All concentration levels of hazardous constituents in each medium that the remedy must achieve to be protective of human health and the environment;

c. All requirements for achieving compliance with these concentration levels;

d. All requirements for complying with the standards for management of wastes;

e. Requirements for removal, decontamination, closure, or post-closure of units, equipment,

devices or structures that will be used to implement the remedy;

f. A schedule for initiating and completing all major technical features and milestones of the remedy; and

g. Requirements for submission of reports and other information.

2. Within sixty (60) calendar days after this Permit has been modified, the Permittee shall demonstrate financial assurance for completing the approved remedy.

K. OTHER HSWA REQUIREMENTS

1. WASTE MINIMIZATION

a. Pursuant to 40 C.F.R. § 264.73(b)(9),and Section 3005(h) of RCRA, as amended by HSWA, 42 U.S.C. § 6925(h), the Permittee must submit to the Regional Administrator, at least annually, a waste minimization certification by the owner or operator. This certification and all accompanying documentation will be submitted by January 31st each year after the permit effective date.

b. The Permittee must certify that:

1) A program is in place to reduce the volume and toxicity of the hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

2) The proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

c. The Permittee shall submit a Waste Reduction Impact Statement within one hundred and fifty (150) calendar days of the effective date of this permit. The Permittee shall include the following information in the Waste Reduction Impact Statement:

(1) An identification of the annual amount and types of hazardous wastes that are generated;

(2) For each waste stream, an identification of the source of generation of these hazardous wastes;

(3) An analysis of technically and economically feasible hazardous waste reduction techniques for the facility, including a description of any techniques that were implemented since 1984, at a minimum; and

(4) A program and schedule for implementing the feasible hazardous waste reduction techniques.

d. In conjunction with the annual certification required by Conditions K.1.a and K.1.b above, the Permittee must submit an annual report to EPA on the status of waste reduction techniques, including those which have been implemented during the previous year and those specified in the Waste Reduction Impact Statement required by Condition K.1.c.

2. LAND DISPOSAL RESTRICTIONS

a. BACKGROUND. HSWA prohibits the continued land disposal of untreated restricted hazardous wastes beyond specified dates, "unless the Administrator determines that the prohibition...is not required in order to protect human health and the environment for as long as the wastes remain hazardous...,." RCRA §§ 3004(d)-(g), as amended by HSWA, 42 U.S.C. §§ 6924(d)-(g).

Pursuant to 40 C.F.R. § 264.13(a)(1), before an owner or operator treats, stores, or disposes of any hazardous waste, he must obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the conditions of a permit issued under 40 C.F.R. Parts 270 and 124, including 40 C.F.R. Parts 264 and 268.

The Permittee shall comply with the waste analysis, notification, certification, recordkeeping, and all other applicable requirements of 40 C.F.R. Part 268 whenever generating, storing, treating, or managing a restricted waste.

b. STORAGE OF RESTRICTED WASTES. The Permittee may store such wastes for up to one year unless the Permittee can demonstrate that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

The Permittee may store such wastes beyond one year; however, the Permittee bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. 40 C.F.R. § 268.50.

The Permittee storing restricted waste for the purpose of accumulation must do so in accordance with 40 C.F.R. § 268.50(a)(2).

c. LAND DISPOSAL OF RESTRICTED WASTES. The land disposal of restricted wastes is prohibited unless the applicable treatment standard, as set forth in Subpart D of 40 C.F.R. Part 268, is met, or the waste is exempt under 40 C.F.R. § 268.1(c).

d. RESTRICTION DATES. The above restrictions become effective and are phased in for specific hazardous wastes over a period which began November 8, 1986. A listing of the dates in which each hazardous waste is restricted was published in the Federal Register on May 28, 1986. This permit incorporates any amendments or modifications made to the land disposal restrictions or its effective dates.

FACILITY SUBMISSION SUMMARY

Facility Submission	Due Date
Task I - Description of Current Situation	with Task III
Task II - Pre-investigation Evaluation of CM Technologies	with Task III
Task III - RFI Workplan	180 days* of permit effective date
Task IV and Task V--Draft Report	To be specified in RFI Workplan
Task VII - Progress Reports on Tasks I through V	As stated in RFI Workplan
RFI Final Report	45 days of EPA comments
CMS Plan	120 days from notification
Task VI - Laboratory and Bench-scale Studies	60 days of approval of CMS Plan
Tasks VIII, IX, and X - CMS Draft Report	120 days of approval of CMS Plan
CMS Final Report--Tasks VIII, IX, and X	45 days of EPA comments
Progress Reports on Tasks VI, VIII, IX, and X	As stated in CMS Workplan

* All reference to "days" shall mean calendar days.

MODULE IV - CONTAINER STORAGE

A. UNIT IDENTIFICATION

Hazardous Waste Drum Storage Area:

There are three container storage areas--North, South, and West Area--with a capacity of 220 55-gallon drums (12,100 gallons), 240 55-gallon drums (13,200 gallons), and 540 55-gallon drums (29,700 gallons), respectively. Each container storage area consists of a diked concrete pad which is sloped to a drainage trench equipped with a sump for containment and collection of spilled material. There is a roof over each of the drum storage areas.

Hazardous wastes are stored in DOT approved 55-gallon drums and in containers which meet the requirements of 40 CFR 264.172.

Attachment G to this Permit contains the location and details of the container storage area.

B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

1. The Permittee may store and treat the following wastes in containers at the facility, subject to the terms of this Permit and as follows:

   - EPA Hazardous Waste Nos.: D001, F003, F005, F002, U002, U044, U112, U138, U154, U188, U202, U213, U220, U239, U080

   - Maximum Volume of 55,000 gallons or 1000 55-gallon containers

2. The Permittee is prohibited from storing or treating hazardous wastes that are not identified in Condition B.1 of this module, unless the Permittee seeks a permit modification pursuant to 40 C.F.R. § 270.41.

C. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the

waste in compliance with the conditions of this Permit. [40 C.F.R. § 264.171]

D. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall assure that the ability of the container to contain the waste is not impaired, as required by 40 C.F.R. § 264.172.

E. MANAGEMENT OF CONTAINERS

1. The Permittee shall keep all containers securely closed during storage, except when it is necessary to add or remove waste, and shall not open, handle, or store containers in a manner which may rupture the container or cause it to leak. [40 C.F.R. § 264.173]

2. The Permittee shall label all containers stored in the container storage area, in accordance with Attachment G of this permit.

3. The Permittee is prohibited from stacking the containers more than three containers high.

4. a. The Permittee shall place all containers containing hazardous wastes on pallets during storage in the container storage area.

   b. The Permittee shall use pallets between containers when containers are to be stacked.

5. The Permittee shall place containers containing ignitable wastes under a roofed area.

6. The Permittee shall maintain a minimum of three feet aisle space between rows of containers.

F. CONTAINMENT SYSTEMS

1. The Permittee shall maintain the containment system in accordance with the attached plans and specifications in Attachment G to this permit. [40 C.F.R. § 264.175]

2. The Permittee shall maintain the container storage area free of cracks and gaps.

3. a. Within ninety (90) calendar days, the Permittee shall submit to EPA, for review and approval, a plan to install/apply a liner/coating on the

secondary containment system for the container storage area. The plan must include, at a minimum, the specification of the liner or coating, areal coverage, and a schedule for implementing the plan.

b. Upon approval of the plan, the Permittee shall implement the plan in accordance with the schedule in the plan.

4. The Permittee shall not divert accumulated liquids to the wastewater treatment system unless the Permittee has determined the accumulated liquids are not a hazardous wastes, as defined at 40 C.F.R. Part 261 Subpart C and D or unless the wastewater treatment system consists of units, downstream from the input, which meet the definition of "tank", as defined at 40 C.F.R. § 260.10 and the discharge complies with the Clean Water Act.

G. INSPECTION SCHEDULES AND PROCEDURES

1. The Permittee shall inspect the container area at least weekly, in accordance with the Inspection Schedule, Permit Attachment B and Condition G.3 below, to detect leaking containers and deterioration of containers and the containment system caused by corrosion and other factors. [40 C.F.R. § 264.174]

2. The Permittee shall record all observations of deterioration of the concrete secondary containment system in the inspection report and operating record and shall be maintained at the facility.

3. The Permittee shall inspect, on at least a weekly basis, the containment system for accumulated liquids.

H. RECORDKEEPING

The Permittee shall place the results of all waste analyses, inspection reports, and repair records in the facility operating record. [40 C.F.R. § 264.73]

I. CLOSURE

At closure of the container area, the Permittee shall remove all hazardous waste and hazardous waste residues from the containment system and decontaminate the container storage

area in accordance with the procedures in the Closure Plan, Permit Attachment E. [40 C.F.R. § 264.178]

J. SPECIAL CONTAINER PROVISIONS FOR IGNITABLE OR REACTIVE WASTE

1. The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line. [40 C.F.R. § 264.176]

2. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in Permit Attachment B. [40 C.F.R. §§ 264.17(a) and 264.176]

K. SPECIAL CONTAINER PROVISIONS FOR INCOMPATIBLE WASTE

1. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same container unless the procedures in Permit Attachment B are followed. [40 C.F.R. § 264.177(a)]

2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material. [40 C.F.R. § 264.177(b)]

3. The Permittee shall separate containers of incompatible wastes. [40 C.F.R. § 264.177(c)]

MODULE V - STORAGE IN TANK SYSTEMS

A. UNIT IDENTIFICATION

The tank system is an above ground horizontal stainless steel tank and is used as the incinerator feed tank. The tank has a capacity of 5,000 gallons and is equipped with overfill control and level indicator. The tank is located within a sloped concrete secondary containment system and is supported on two saddles on a concrete foundation. The tank is vented and is operated at atmospheric pressure.

(See Attachment H for details on the tank systems and secondary containment.)

B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

1. The Permittee may store a maximum total volume of 5,000 gallons of liquid hazardous wastes in one tank system, subject to the terms of this Permit and as follows:

Hazardous Tank	Maximum Capacity (Gallons)	Dimens. of Tank	Secondary Containment Required	Description of Waste
	5,000	11'3" L 8'6" D	Yes	F002, F003, F005, D001, U002, U044, U112, U154, U213, U220, U239, U080, U138, U188, U202

2. a. The Permittee may store the following hazardous wastes identified by EPA Hazardous Waste Nos. F002, F003, F005, D001, U002, U044, U112, U154, U213, U220, U239, U080, U138, U188, U202 in the tank system.

   b. The Permittee shall ensure that no incompatible wastes are commingled in the tank by conducting the waste analysis in accordance with Attachment A of the Permit and manage the waste in accordance with Condition J of this Module.

3. The Permittee is prohibited from storing or treating hazardous wastes that are not identified in Permit Condition B.2, unless properly modified under this permit, in accordance with Module I, Condition K.

C. SECONDARY CONTAINMENT AND TANK ASSESSMENT [40 C.F.R. §§ 264.191 and 264.193]

1. Within ninety (90) calendar days from the permit effective date, the Permittee shall submit a plan to EPA, for review and approval, for up-grading the existing secondary containment system for the hazardous waste tank to comply with 40 C.F.R. § 264.193.

2. The Permittee shall maintain the secondary containment system free of cracks and gaps. Observation of cracks and gaps in the secondary containment system and a description of repairs implemented must be recorded in the inspection form.

   a. If the Permittee observed cracks or gaps in the secondary containment system in the implementation of Condition F.3 of this module, the Permittee shall determine whether raveling, subsidence, and/or sinkhole formation is the cause of the deterioration. This written determination shall include the criteria and rationale for the determination and shall be included in the operating record.

   b. If the cause of the deterioration of the secondary containment system is determined to be from raveling, subsidence, and/or sinkhole development, the Permittee shall verbally notify EPA within five (5) calendar days from the day of such determination and submit a written proposal, within 5 calendar days from the day of verbal notification, of actions to be taken to avoid the release of hazardous waste and/or hazardous constituents to the subsurface.

3. a. The Permittee shall implement the approved plan prepared pursuant to Condition C.1 of this Module and provide documentation to EPA, for review and approval, in accordance with the schedule in the plan, showing that the hazardous waste tank system has a secondary containment system which meets the requirements of 40 C.F.R. § 264.193.

b. If EPA disapproves the plan, the Permittee shall comply with the following tank system assessment condition until such time as the concrete secondary containment for each tank system meets the requirement of 40 C.F.R. § 264.193:

Within ninety (90) calendar days from the date of EPA's written disapproval, the Permittee shall submit to EPA the following:

i. Specific procedures planned to conduct, at least annually, a leak test, internal inspection or other tank integrity examination in accordance with the requirements of 40 C.F.R. § 264.191(b)(5) [40 C.F.R. § 264.193(i)(1)]; or

ii. Develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified registered professional engineer. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The Permittee must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments must be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated. 40 C.F.R. § 264.193(i)(2).

[Note: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, and approved by EPA, as guidelines for assessing the overall condition of the tank system.]

4. The Permittee shall comply with the following until such time as the ancillary equipment associated with the respective hazardous waste tank systems has been deemed by EPA to meet the secondary containment requirement of 40 C.F.R. § 264.193 (b) and (c):

a. Within ninety (90) calendar days from the date of EPA's written disapproval of the plan prepared pursuant to Condition C.1.a of this Module, the

Permittee shall submit to EPA the procedures to conduct, at least annually, a leak test that meets the requirements of 40 C.F.R. § 264.191(b)(5) or other tank integrity method. 40 C.F.R. § 264.193(i)(3).

b. Upon EPA approval, the Permittee shall conduct the procedures developed pursuant to Conditions C.4.a, above within thirty (30) calendar days.

5. The Permittee must maintain on file at the facility a record of the results of the assessments conducted pursuant to Condition C.3 and C.4 above. 40 C.F.R. § 264.193(i)(4). The written assessments must be reviewed and certified by an independent, qualified registered professional engineer, in accordance with 40 C.F.R. § 270.11(d).

6. If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment conducted pursuant to Condition C.3 and C.4, the Permittee must comply with the requirements of 40 C.F.R. § 264.196. 40 C.F.R. § 264.193(i)(5).

D. OPERATING REQUIREMENTS

1. The Permittee shall not place hazardous wastes or treatment reagents in the tank systems if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail. 40 C.F.R. § 264.194(a).

2. The Permittee shall prevent spills and overflows from the tank or containment systems using the methods described in Attachment H of this permit. 40 C.F.R. § 264.194(b).

E. RESPONSE TO LEAKS OR SPILLS

In the event of a leak or a spill from the tank system, from a secondary containment system, or if either system becomes unfit for continued use, the Permittee shall remove the system from service immediately and satisfy the requirements of 40 C.F.R. § 264.196(a) through (f) and perform the following:

1. Immediately stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

2. Remove waste and accumulated precipitation from the system within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall notify the Regional Administrator and demonstrate that the longer time period is required. If the collected material is a RCRA hazardous waste, it must be managed in accordance with all applicable requirements of 40 C.F.R. Parts 262-264 and 268. The Permittee shall note that if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 C.F.R. Part 302.

3. Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water. All releases will be subject to reporting under 40 C.F.R. Part 302. The Permittee shall comply with all notification and reporting requirements set forth in 40 C.F.R. § 264.196(d).

4. Close the system in accordance with the Closure Plan, Attachment E of this permit and the closure/post-closure care requirements of this Module, unless the following actions are taken:

   (a) For a release caused by a spill that has not damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs before returning the tank system to service.

   (b) For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee shall repair the primary system prior to returning it to service.

   (c) For a release to the environment caused by a leak from the aboveground portion of the tank system or ancillary equipment that does not have secondary containment and can be visually inspected, the Permittee shall repair the tank system (and/or

ancillary equipment before returning it to service).

(d) For a release to the environment caused by a leak from the portion of the tank system component that is not readily available for visual inspection, the Permittee shall provide secondary containment that meets the requirements of 40 C.F.R. § 264.193 before the component can be returned to service.

(e) If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in 40 C.F.R. §§ 264.192 and 264.193.

5. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault. This certification must be submitted to the Regional Administrator within thirty (30) calendar days after returning the tank to use. 40 C.F.R. § 264.197(f).

F. INSPECTION SCHEDULES AND PROCEDURES

1. The Permittee shall inspect the tank systems, in accordance with the Inspection Schedule, Permit Attachment B, and shall comply with Condition F.2 and F.3 of this Module.

2. The Permittee shall inspect the overfill controls, in accordance with the schedule in Permit Attachment B. 40 C.F.R. § 264.195(a).

3. The Permittee shall inspect the following components of the tank system at least once each operating day: [40 C.F.R. § 264.195(b)]

(a) Aboveground portions of the tank system (which include piping, flanges, and fittings) to detect corrosion or releases of waste;

(b) Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges,

monitoring wells) to ensure that the tank system is being operated according to its design;

(c) Construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation);

(d) Conservation vent for obstruction, corrosion, and proper functioning;

(e) The secondary containment coating, when applied, for wear, deterioration, and coverage; and

(f) Accumulated liquids in the containment system.

4. The Permittee shall document compliance with the above inspection requirements and place this documentation in the operating record for the facility. 40 C.F.R. § 264.195(d).

G. NOTIFICATIONS AND REPORTING

1. The Permittee shall report to the Regional Administrator, within 24 hours of detection, any release to the environment. 40 C.F.R. § 264.196(d)(1). However, a leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned up, need not be reported. 40 C.F.R. § 264.196(d)(2). If the Permittee has reported the release pursuant to 40 C.F.R. Part 302, this report satisfies the requirements of this Permit Condition. 40 C.F.R. § 264.196(d)(1).

6/13/96 @ 3.00pm John Keith talk to Bob Hush: He said: 1 pound mean to the Environment to Superfund Act. on June 3, 1994 Lawyer decided one Pound refer to Spill not to the Env.

2. Within thirty (30) calendar days of detecting a release to the environment from the tank system or secondary containment system, the Permittee shall report the following information to the Regional Administrator: [40 C.F.R. § 264.196(d)(3)]

a. Likely route of migration of the release;

b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

c. Results of any monitoring or sampling conducted in connection with the release. If sampling and

monitoring data relating to the release are not available within 30 days, the Permittee should provide the Regional Administrator with a schedule of when the results will be available. This schedule must be provided before the required 30-day submittal period expires;

d. Proximity to downgradient drinking water, surface water, and populated areas; and

e. Description of response actions taken or planned.

3. Pursuant to Condition C.2.b of this module, the Permittee shall submit a written notification to the Regional Administrator within seven days from the day which the Permittee determines that deterioration of the secondary containment system is caused by raveling, subsidence, and/or sinkhole development. This notification shall include proposed actions to be taken to avoid a release of hazardous waste and hazardous constituents to the subsurface.

H. CLEAN CLOSURE AND/OR CLOSURE WITH POST-CLOSURE CARE

1. At closure of the tank system(s), the Permittee shall follow the procedures in the Closure Plan, Permit Attachment E, including all the requirements of 40 C.F.R. § 264.197. 40 C.F.R. § 264.197(a).

2. If the Permittee cannot demonstrate that all contaminated soils can be practically removed or decontaminated, in accordance with the Closure Plan, then the Permittee shall submit a revised Closure Plan and a Contingent Post-Closure Plan for the contaminated area. The permit will be modified for the new plans. 40 C.F.R. § 264.197(b) and (c). The Permittee shall update the cost estimates for closure and post-closure plans, and the financial assurance demonstration when the closure and/or post-closure plans are modified.

I. SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

1. The Permittee shall not place ignitable or reactive waste in the tank system or in the secondary containment system, unless the procedures specified in Permit Attachment B and 40 C.F.R. § 264.198 are followed.

2. The Permittee shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1977 or 1981). 40 C.F.R. § 264.198(b).

3. The Permittee shall ensure that the tank systems are electrically grounded.

4. The Permittee shall post and maintain warning signs prohibiting smoking prior to enter the hazardous waste management areas and areas where ignitable materials are stored.

F. SPECIAL TANK PROVISIONS FOR INCOMPATIBLE WASTES

1. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same tank system or the same secondary containment system. 40 C.F.R. § 264.199(a).

2. The Permittee shall not place hazardous wastes in a tank system that has not been decontaminated and that previously held an incompatible waste or material. 40 C.F.R. § 264.199(b).

MODULE VI - INCINERATION

A. UNIT IDENTIFICATION

UNIT DESCRIPTION:

The incineration unit is a rotary kiln incinerator consisting of a primary combustion chamber, secondary combustion chambers (after burner), induced-draft fan, and air pollution control equipment. Liquid hazardous wastes is fed into the secondary chamber of the incinerator through nozzles and is air atomized. The system also includes a venturi scrubber and a packed column absorber for air emissions control. The feed rate of liquid waste to the after burner is approximately 60 gallons per hour. The incineration system is also equipped with automatic waste feed cut-off controls which cease waste feed when certain control parameters are exceeded.

CONSTRUCTION AND MAINTENANCE: The Permittee shall maintain the facility in accordance with the attached design plans and specifications in Attachment I to this Permit.

No modification to the incinerator and its flue gas cleaning system shall be made which would affect the achievement of the performance standards in Condition VI.B., or any other permit conditions specified in this permit, without first obtaining written approval from the Regional Administrator.

B. PERFORMANCE STANDARD

The Permittee shall construct and maintain the incinerator so that, when operated in accordance with the operating requirements specified in this permit, it will meet the following performance standards.

1. The incinerator must achieve a destruction removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated in this permit for each waste feed. DRE shall be determined using the method specified in 40 C.F.R. § 264.343(a).

2. The incinerator must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter when corrected for 7% oxygen in the stack gas, in accordance with the formula specified in 40 C.F.R. § 264.343(c).

3. The Permittee must control hydrogen chloride (HCl) emission from the incinerator stack such that the rate of emission of HCl does not exceed 4 lb/hour. This HCl emission limit shall be satisfied by limiting the total feed rate of chloride to the incinerator as provided in Condition VI.C.5.

4. The Permittee must control emission of products of incomplete combustion (PICs) from the incinerator such that the carbon monoxide (CO) level in the stack gas, shall not exceed the limits specified in Condition VI.D.3.

5. Compliance with the operating conditions specified in this permit will be regarded as compliance with the above performance standards. However, evidence that compliance with such permit conditions is insufficient to ensure compliance with the above performance standards, such evidence may be "information" justifying modification, revocation, or reissuance of the permit pursuant to 40 C.F.R. § 270.41.

C. LIMITATION ON WASTES

1. The Permittee is allowed to incinerate hazardous wastes generated at the Pfizer Barceloneta facility or other Pfizer, Inc. facilities and hazardous wastes generated off-site by other facilities as a result of producing pharmaceutical products for Pfizer.

2. The Permittee shall not incinerate any hazardous waste that contains any hazardous constituent listed in 40 C.F.R. Part 261 Appendix VIII, having a heat of combustion of less than 0.75 kcal/gm.

3. The Permittee shall not incinerate any hazardous waste containing polychlorinated biphenyls (PCBs) or dioxins.

4. a. The Permittee shall not incinerate any combination of wastes, as fed into the secondary combustion chamber (afterburner), which have a combined heating value of less than 6,700 BTU/lb.

   b. The Permittee shall not incinerate any waste such that the heat input is greater than 3.3 MMBtu/hr.

5. The Permittee shall not feed into the incinerator, any combination of waste(s) containing a total organic chloride concentration which will result in a organic chloride feed rate greater than 266.3 lb/hr.

6. The combined waste feed rate, shall not exceed 55.7 G/hr (or 511 lb/hr). (The feed rate of the waste shall be measured at FE-702 and recorded at FR-712.)

7. The Permittee shall not incinerate any liquid waste feed has an ash content greater than 0.08% ash content.

8. The Permittee shall not burn any combination of wastes with a viscosity greater than 8 cp (centipoise).

9. The physical form of the waste fed into the secondary combustion chamber shall be liquid.

10. The Permittee shall feed only fuel into the primary combustion chamber while hazardous wastes is in the secondary combustion chamber (or afterburner). No waste shall be fed into the primary combustion chamber while hazardous wastes is in the afterburner.

11. The Permittee shall conduct regular waste analyses of the waste streams, in accordance to Attachment A to this permit, to document compliance with Conditions VI.C. et. seq.

12. Prior to switching from incinerating hazardous wastes (other than hazardous wastes described below in this paragraph) to incinerating nonhazardous wastes or hazardous wastes which are ignitable by characteristic or listed in Subpart D of 40 CFR Part 261 solely for its ignitable characteristic and also contain an insignificant concentration (less than or equal to 100 ppm) of hazardous constituents listed in Appendix VIII of 40 CFR Part 261, the Permittee shall perform the following:

    a. Characterize the wastes in accordance with Attachment A of this permit to verify that there is an insignificant concentration of hazardous constituents;

    b. Maintain the temperature of the afterburner at 20 degrees F above the minimum specified in Condition D.1 of this module for 20 consecutive minutes after the last volume of hazardous waste is fed into the afterburner by burning fuel only; and

    c. The Permittee shall decontaminate the incineration system in accordance with Attachment A.

D. OPERATING CONDITIONS

Permittee shall feed the wastes described in Condition VI.C. to the incinerator only under the following conditions:

1. The secondary combustion chamber temperature, as measured at TIC-300 and recorded at TJR-1-2, shall be maintained at 2140°F or greater at all times while any hazardous waste or its residual solids remain in the secondary combustion chamber.

2. The indicator for combustion gas velocity shall be the concentration of oxygen in the afterburner flue gas, as measured at AI-710 and recorded at UR-711 and shall be no greater than 12.4% by volume, dry.

3. The afterburner flue gas concentration of carbon monoxide (CO), as measured at AI-710 and recorded at UR-711, and corrected to 7% oxygen, dry volume in the stack, shall not exceed 100 ppmv on a 60-minute rolling average, 500 ppmv on a 10-minute rolling average.

4. The Permittee shall operate the venturi scrubber as follows:

   a. The pressure drop across the venturi scrubber, as measured at DPI-511 and recorded at UR-714, must be maintained at no less than 32 in. W.G.

   b. The total water flow rate to the venturi scrubber, as measured at FI-516 and recorded at FR-713 shall be maintained at no less than 49 gpm.

   d. The minimum venturi scrubber make-up flow rate, as measured at FI-515, shall be maintained at or above 25 gpm.

5. a. The packed tower pH, as measured at AE-514 and recorded at UR-711, shall be maintained at no less than 1.5.

   b. The maximum temperature of the exhaust gas emanating from the venturi scrubber, as measured at TSH-512 shall not exceed 210°F.

   c. The total solids and total dissolved solids concentration in the packed tower blowdown, as measured at AT-516 and recorded at UR-714, shall not exceed 3.0% by weight.

d. The recirculation water flow rate to the packed tower, as measured at FI-517 and recorded at FR-713, shall be maintained at 49 gpm or greater.

6. The Permittee shall control fugitive emissions from the combustion zone of the incinerator by maintaining a negative pressure in the combustion zone of the incinerator and by conducting regular inspections during operation.

7. During start-up and shut-down of the incinerator, hazardous wastes shall not be introduced into the incinerator unless the incinerator is operating within the conditions specified in Conditions VI.D. et. seq.

8. When the waste feed cut-off occurs because of exceeding the CO levels specified in this permit, the waste feed to the incinerator shall not be resumed until after the instantaneous CO level (corrected to 7% oxygen, dry volume) has been brought down to 100 ppmv for at least 5 minutes.

9. The Permittee must cease waste feed when changes in waste feed or operating conditions exceed limits designated in Conditions VI.C and VI.D of this module, as required by 40 C.F.R. § 264.345(f).

10. The primary combustion chamber pressure, as measured at PI-209 and recorded at UR-714, shall be maintained at -0.05 in. W.G. or less.

11. The Permittee shall construct, maintain and calibrate the monitoring systems and the automatic waste feed cut-off systems specified in Table I to automatically cut-off the hazardous waste feed to the incinerator at the specified levels.

E. MONITORING AND INSPECTION

1. The Permittee shall install, maintain, calibrate, and operate monitoring equipment which continuously records operating parameters specified in Condition VI.D.1, D.2, and D.3, required by 40 C.F.R. § 264.347(a)(1) and (2).

2. The incinerator and associated equipment (pumps, valves, pipes, etc.) shall be inspected, at least each operating day, for leaks, spills, emissions, tampering, and signs of malfunction as required by 40 C.F.R. § 264.347(b).

3. The Permittee shall perform monthly testing of the automatic waste feed cut-off systems and all associated alarms, as specified in Conditions VI.D.11 by simulating upset conditions for each parameter, as required by 40 C.F.R. § 264.347(c).

4. The monitoring and inspection data required by Conditions VI.E.1, VI.E.2 and VI.E.3 must be recorded and the records must be placed in the operating log as required by 40 C.F.R. § 264.347(d).

5. Upon request by the Regional Administrator, sampling and analysis of the waste and exhaust emissions shall be conducted to verify that the operating requirements established in this permit achieve the performance standards of 40 C.F.R. § 264.343. 40 C.F.R. § 264.347(a)(3).

F. CONTROL OF METALS AND HYDROGEN CHLORIDE EMISSIONS

Section 3005(c)(3) of RCRA, as amended by the HSWA, provides authority to EPA to establish permit conditions for hazardous waste facilities beyond the scope of existing regulations. 40 C.F.R. §§ 270.32 and 271.1(j).

1. The Permittee shall provide, within ninety (90) calendar days of the permit effective date, the following:

(a) The information requested in Parts 1 and 2 of the Worksheet #1 in Attachment M to this permit. The other parts may be completed when the waste data is gathered.

(b) Provide the information requested in the Questionnaire in Attachment M to this permit.

2. The Permittee shall submit, within one hundred and twenty (120) calendar days from the permit effective date, a Waste Characterization Plan to EPA for review. The Waste Characterization Plan shall address the characterization of the metals and total chlorine content of the waste stream(s) which enters the incinerator. The Waste Characterization Plan must address, at a minimum, the following:

(a) Submit a waste stream sampling and analysis plan which is representative of the "worst case" stream expected to be treated in the incinerator system. A "worst case" waste stream for implementation of Condition VI.F of this Module shall be the stream at

which the highest concentration of each metal and the highest total chlorine is present.

(b) Include a discussion on the sampling and analysis frequency and its rationale. Provide a schedule for implementing the waste characterization.

(c) The following metals must be addressed: antimony, arsenic, barium, beryllium, cadmium, chromium (total), chromium (hexavalent), lead, mercury, silver, and thallium.

(d) The sampling methods must be consistent with the Test Methods for Evaluating Solid Waste, Third Edition, SW-846. Analytical methods shall be consistent with the Test Methods For Evaluating Solid Waste, Third Edition, SW-846, or an equivalent method subject to approval by EPA.

3. The Permittee shall implement the Waste Characterization Plan, within 30 calendar days from the date EPA approves the plan.

4. The Permittee shall submit to EPA the results of the Waste Characterization Plan in a report within 30 calendar days from completion of the waste characterization. The results should indicate the highest concentration of each metal and total chlorine in the waste stream entering the incinerator.

5. EPA shall, based on the results of implementation of Conditions VI.F.1 and VI.F.3 of this Module and current guidance on metals and hydrogen chloride controls for hazardous waste incinerators, make one of the following determinations:

(a) Determine whether the Permittee shall conduct site-specific dispersion modeling and to demonstrate that the established acceptable ambient levels are not exceeded.

(b) Determine the incinerator waste feed rate limits for metals and total chlorine, in accordance with EPA guidance, as current; or

(c) Determine emission limits in accordance with EPA guidance, as current.

6. The Permittee shall have the opportunity to demonstrate by site-specific dispersion modeling and data from Condition VI.F.1 and VI.F.3 or test emission data from Condition VI.F.7 that feed rate limits or emission rate

limits higher than those imposed by EPA will not result in an exceedence of ambient levels that pose unacceptable health risks. If the Permittee opts to exercise this right, the Permittee shall submit to EPA for review, a dispersion modeling plan for a site-specific analysis which is consistent with the Guidelines on Air Quality Models, EPA-450/2-78-027R, U.S. EPA, Office of Air Quality and Standards, Research Triangle Park, N.C.

(a) The Permittee shall conduct the dispersion modeling within thirty (30) calendar days from the date of EPA approval of the use of the site-specific dispersion model and complete the dispersion modeling within sixty (60) calendar days.

(b) The Permittee shall provide the modeling results and risk analysis to EPA for review within thirty (30) calendar days after completing the modeling. A full printout of the input data, or the full input shall be appended to the results.

7. If EPA, based on consideration of (1) Conditions VI.F.1 and VI.F.3 or (1) in conjunction with site-specific dispersion modelling, determines that the Permittee shall conduct a test burn to demonstrate that metal and/or hydrogen chloride emissions will not pose unacceptable health risks, the following shall be provided:

   (a) Within sixty (60) calendar days of EPA's determination, the Permittee shall submit a draft Test Burn Plan to the Regional Administrator for approval.

   (b) Within ninety (90) calendar days of EPA's approval of the Test Burn Plan, the Permittee shall submit test burn data to support setting higher metals limits.

8. EPA shall consider the results from implementing conditions (1) VI.F.1 and VI.F.3, or (2) Condition VI.F.7., or (1) or (2) in conjunction with site-specific dispersion modelling, and current guidance on metals and hydrogen chloride controls for hazardous waste incinerators, in establishing permit conditions to control metals and hydrogen chloride emissions from the incinerator. These permit conditions can be in the following form:

   (a) Specify feed rate limits.

(b) Specify the actual feed rates by feed system and the actual emissions determined in a trial burn as long as these emissions do not exceed the ambient levels that pose unacceptable health risks.

(c) Specify air pollution control device operation and maintenance requirements to ensure that the emission limits are not exceeded.

G. REPORTING

1. The operator must indicate in the operating log whenever the waste feed is shut-off because of an emergency situation or because of concern that a permit condition may be exceeded. The log must include a statement of the problem or situation that caused the shut-off and the action, if any, the operator took or plans to take to address the problem. If the waste feed is shut-off more than thirty (30) times in a calendar month, caused by the exceedence of the operating conditions in this Module, the Permittee shall notify the EPA in writing within seven (7) calendar days of the thirtieth shut-off. The notice must include the dates and circumstances of each shut-off and the action the operator took to address each problem.

2. The Permittee shall submit to EPA in writing, a quarterly summary report which shall include, at a minimum, the following items pertaining to the incinerator's performance during the previous quarter: all shut-off events, date and time of shut-off events, cause(s) triggering shut-off, remedial actions taken (or planned) to correct the problem, results of instrument inspection and calibration, and any noncompliance with permit operating conditions, Conditions E, et seq., of this Module. The reports shall be submitted no later than thirty (30) calendar days from the beginning of the quarter. (The beginning of each quarter shall be January 1, April 1, July 1, and October 1.)

3. The Permittee shall notify EPA, at least fourteen (14) calendar days in advance, in writing, of its intent to incinerate hazardous wastes which are hazardous by characteristic for ignitability or listed in 40 C.F.R. Part 261 Subpart D solely for it ignitability and contains insignificant amounts of hazardous constituents (less than or equal to 100 ppm). The Permittee must inform EPA, in writing, of any revision

to this notification within ten (10) calendar days from the notification.

H. Closure

At closure, the Permittee must comply with 40 C.F.R. § 264.351 and Attachment E to this permit.

TABLE I

AUTOMATIC WASTE FEED INTERLOCK SYSTEM

CONDITION	INST. ID	SET POINT LIMIT	FEED STREAM TO BE CUT OFF[1]	CALIBRATION FREQUENCY
Second. comb. chamb. temp: Low	TSL-300	2140°F	B2	Manufacturer's Specification
Liquid waste flowrate: High	FI-702	55.7 gph	B2	"
Flame failure		No flame	B1,B2,B3	"
Low venturi pressure drop	DPI-511	32" W.G.	B2	"
Low total water to venturi	FI-516	49 gpm	B2	"
Low packed tower recycle H_2O	FI-517	49 gpm	B2	"
High venturi flue gas temp.	TSH-512	210°F	B1,B2,B3	"
Sec. chamb. oxygen conc.: High	AI-710	12.4% by vol.	B2	"
Low packed tower blowdown pH	AIC-514C	1.5	B2	"
High CO in sec. chamber:				Daily
10-min rolling avg.	AI-710	500 ppmv	B2	
60-min rolling avg.	AI-710	100 ppmv	B2	

ALARM SYSTEM

CONDITION	INST. ID.	SET POINT LIMIT	CALIBRATION FREQUENCY
High TS/TDS in packed tower blowdown	Conductivity meter	3% by weight	Maunfacturer's Specification

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1 The feed streams shall terminate immediately upon triggering the set point. B1: primary kerosene burner; B2: hazardous waste burner; B3: sec. kerosene burner

ATTACHMENT A

CONTENT:

- Waste Analysis Plan

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

3. Waste Analysis Plan

It is noted that the characteristics of each individual waste presented in Tables C-1, C-2 and C-3 should be relatively constant because the raw materials added to all the production steps and the operating procedures are tightly controlled. While the characteristics should be constant, certain analyses will be repeated annually to verify the waste characteristics, or whenever there is a process change.

PPI assures that all wastes are managed and treated in compliance with the permit. To assure that the Process Tolerance Limits, e.g. minimum heat of combustion, are not exceeded, PPI has developed detailed procedures to monitor all on-site wastes and those transferred from other Pfizer sites. These processes are discussed below and can be summarized as follows:

- The wastes will be classified as to the principal constituents e.g., acetone, the hazardous classification e.g., F002, the basis for classification e.g., ignitable and the presence of hazardous constituents. This classification is based upon a review of the batch sheets for the process generating each waste and prior analytical data.

- The waste classification data is used to assess the compatibility of the wastes. The principal constituents in each waste are divided into reactivity groups e.g. mineral acids, Achilles. The potential for an adverse reaction is assessed by combining the reactivity groups such as shown in Part 264 Appendix V and the operating procedure presented in Section F (Table F-4). Based upon this analysis and PPI's experience, all of PPI's wastes are compatible. A compatibility assessment is completed whenever there is a process change or new process waste.

- The corrosion potential of the waste is assessed using materials compatibility tables and annual thickness measurements on the hazardous waste tank. There has been no appreciable corrosion of the tank since it was installed. Only DOT approved containers are used to store hazardous wastes.

flexibility to treat other Pfizer, Inc. wastes. The generator would as a first step characterize the wastes based upon process knowledge and available data. This characterization would be used to assess the feasibility of storing and treating these wastes at PPI. The waste would be analyzed by the generator for the parameters in Table C-4 and any hazardous constituents present in the wastes. The data will be reviewed by PPI to determine whether the wastes can be stored and treated in PPI's facilities.

- Ignitable wastes (D001) or wastes listed only for genotypically (F003) that do not contain significant concentrations (100 mg/kg) of hazardous constituents are exempt from Subpart O regulations (except for the waste analysis plan). These wastes which are labeled will be segregated from the wastes that contain hazardous constituents. The ignitable wastes will be stored in either a separate drum storage area or in a separate section of the drum storage area. Prior to incinerating these wastes representative samples of each ignitable waste will be collected and analyzed for the hazardous constituents in Table C-4. The wastes would be released for incineration (without complying with Subpart O requirements) only if there is no significant concentration (100 mg/kg) of hazardous constituents. If the concentration of hazardous constituents is greater than 100 mg/kg, then the wastes would be treated in accordance with Subpart O regulations.

The following procedure will be instituted to ensure that there is no mixing of ignitable and toxic wastes. The hazardous waste storage tank and incinerator feed piping will be cleaned prior to starting a campaign to incinerate ignitable waste. The pipeline will be purged with nitrogen. The residues will be sent back to the hazardous waste storage tank. After the tank is drained, the pipeline and tank will be purged with steam for a time sufficient enough to remove residue toxic waste from the system. The tank would then be charged with ignitable wastes. All of the ignitable wastes would be incinerated before starting a campaign to incinerate wastes containing hazardous constituents.

TABLE C-4

WASTE PARAMETERS

Parameter	Frequency*	Rational for Parameter
Heating Value	Annually	- Limits of Incinerator Capacity & Fuel Requirements
Ash Content	Annually	- Incinerator Ash Control
Physical State	Annually	- Feed method selection
Viscosity (for liquids)	Annually	- Nozzle dispersion efficiency
Flashpoint (for liquids)	Annually	- Ignitability of liquid
Ignitability characteristic (1) (for solids)	Annually	- Hazardous waste compatibility
Total Organic Halogen	Annually	- Chloride feed limit
Appendix VIII Constituent(s)	Annually	- PCHC limit (by test burn)
California List	As received or generated	- Pfizer Plants off-site waste & on-site ash control
Restricted Waste (40CFR268.41,43)	As received or generated	- Pfizer Plants off-site waste & on-site ash control

Note 1: See 40CFR261.21(a)2 for analytical procedure.

* Note: All waste will be analyzed annually or when a process change occurs, the ignitable waste will be analyzed before it goes to the incinerator to ensure no hazardous constituent listed in Appendix VIII is present in significant concentration. For toxic waste, every tank batch fed to the incinerator will be sample analyzed for parameters in Table C-4 except for restricted waste and California list.

- The wastes that contain hazardous constituents will be charged to the hazardous waste storage tank and blended with other solvents to comply with permitted feed levels to the incinerator. The contents of the tank will be sampled and analyzed for the parameters in Table C-4 after every addition of waste containing hazardous constituents. It is envisioned that the tank would be filled with waste. The tank contents would then be sampled, analyzed and then fed to the incinerator at the permitted rate. After emptying the tank, the tank would be filled with the additional wastes. The sampling, analyzing and feeding process would be repeated. The ash that is generated while treating these wastes will be managed as a hazardous waste and analyzed in accordance with 40 CRF 268.41, 268.43 and 268.32.

  a. Waste Parameters

     The analyses that will be completed on each waste is presented in Table C-4. The rationale for selecting these parameters is based upon information presented in Tables C-1, C-2 and C-3 and the permit requirements.

TABLE C-6
SAMPLE SUMMARY MATRIX

WASTE	PARAMETER	EPA ANALYTICAL METHOD(1)	SAMPLING FREQUENCY	CONTAINER AND PRESERVATION	QC AND FREQUENCY (2)	SAMPLING DEVICE
Liquid/Solid Drum	- Methylene chloride	8240 8010	Annually or on change of process (see note 3).	1 liter narrow mouth (glass) for liquids. 1 liter wide mouth (glass) for solids. Preserved at 4°C	Spikes 10% Trip blanks 1 per shipment Duplication 10%	Coliwasa, liquid trier, or grain sampler for solids
	- Chloroform	8240 8010				
	- Toluene	8240 8020				
	- BTU	D-240				
	- Ash	A-209E				
	- Viscosity	D-445				
	- TOX	9020				
Storage Tank (for Toxic waste only)	- Methylene chloride	8240 8010	Every incinerator batch	1 liter narrow mouth (glass) Preserved at 4°C	Spikes -1 Trip Blank -1 Duplicate	Grab sample, tank agitator must be on all time
	- Chloroform	8240 8010				
	- Toluene	8240 8020				
	- BTU	D-240				
	- Ash	A-209E				
	- Viscosity	D-445				
	- TOX	9020				
	- Methyl Iodide	8240 8250				

Note 1: Methods D-240 and D-445 are ASTM procedures; method A-209E is an APHA method and SW-846 third edition
Note 2: Trip blank to be analyzed for volatile components only
Note 3: Random selection of 10% of drums for batch over total drum quantity

TABLE C-6
SAMPLE SUMMARY MATRIX (continued)

WASTE	PARAMETER	EPA ANALYTICAL METHOD(1)	SAMPLING FREQUENCY	CONTAINER AND PRESERVATION	QC AND FREQUENCY (2)	SAMPLING DEVICE
Off-site	- Appendix VIII - California list - EP Tox Metals - BTU - Ash - Viscosity - TOX	8000 series 7000 series 8000 series D-240 A-209E D-445 9020	2 samples per shipment and 1 sample prior to shipment receipt	1 liter narrow mouth (glass) Preserved at 4°C	Spike -1	See above, For tank truck, 2 samples at different depths will be taken with modified dipper
Incinerator Residuals (Ash, etc.)	- Appendix I (Restricted Waste 40 CFR 268.4) - California List Metals - Methylene Chloride (40 CFR 268.43) - EP Tox Metals (see note 4)	8240 8240 8000 series	Every incinerator batch, see note 3	1 liter wide mouth (glass) Preserved at 4°C	Spikes 10% Trip blanks 1 per shipment Duplication 10%	Grab sample

Note 1: Methods D-240 and D-445 are ASTM procedures; method A-209E is an APHA method and SW-846 third edition
Note 2: Trip blank to be analyzed for volatile components only
Note 3: Random selection of 10% of drums for batch over total drum quantity
Note 4: Only incinerator residues from D001 waste stream will be analyzed for this parameter to verify if the ash is hazardous

b. Analytical Methods

Analysis will be in accordance with EPA methods including "Test Methods for Evaluating Solid Waste - Physical/Chemical," SW-846, 3rd edition and "Methods for Chemical Analysis of Water and Waste," EPA-600/4-79-020, March 1979 (Revised March 1983). The analytical methods for the various parameters including the specific hazardous constituents are presented in Table C-5. Specific instrumentation and calibration procedures are summarized as follows:

Heating value - ASTM D 2015-77 (1978) method using a bomb calorimeter. The calorimeter is calibrated using Benzoic Acid pellets obtained from the National Bureau of Standards. Results are compared to standards.

TOX - SW-846 Method 9020. Trichlorophenol is used as a standard to calibrate a Dorhmann DX-20 TOX analyzer. Standards are prepared at various concentrations and samples are compared to the standards.

Viscosity - Method A005 which in turn references ASTM D-445 (1979). The time for materials to flow through various standard viscosity tubes is recorded and compared to standards.

Flashpoint - SW-846 Method 1010 - Pensky-Martens Closed Flash Tester (ASTM D93-77) is calibrated using thermometers standardized against NBS certified thermometers and pure p-xylene as a reference standard. Barometric pressure corrections are employed. Samples are run in duplicate if a flash is determined. The Seta Flash Closed Cup Tester (SW-846 Method 1020) may also be used.

Ignitability - same as Flashpoint.

Toluene - SW-846 Method 8020. Samples will be analyzed by gas chromatography (GC) equipped with a photoionization detector (PID). Solid samples will be introduced to the GC/PID by direct injection using headspace analysis Method 8310. Liquid samples will be introduced

TABLE C-5

ANALYTICAL METHODS

Waste Type	Step Name	Parameter	Test Methods
All wastes	Not applicable	Heating value	D-240
		Ash	A-209E
		Total Organic Halogen	EPA method 9020
All liquids	Not applicable	Viscosity	D-445
		Flashpoint	Pensky Martin Closed Cup ASTM D-93-79 (SW-846, third edition, method 1010), Seta Flash Closed Cup Tester (SW-846, Method 1020)
Process Liquors	Nitedipine Gits	Methylene Chloride	EPA Method 8010, 8240
	Fluconazole Step 3	Methylene Chloride	EPA Method P101
All liquids	Not applicable	California List	SW-846; 8000 series and 6010
Residues		Land Ban, extract	40CFR268.41 Appendix I 8240/8250
		Land Ban, Total Methylene Chloride	EPA Method 8010, 8240
All solids	Not applicable	Ignitability	SW-846, Third Edition
Filter cakes	Nifedipine rex	Toluene	EPA method 8020, 8240
	Crude hydropin	Toluene	EPA method 8020, 8240
	Crude meclizine	Toluene	EPA method 8020, 8240
	MBP	Toluene	EPA method 8020, 8240
	Furoyl piperazine	Toluene	EPA method 8020, 8240
	Dichloroquinazoline	Methylene Chloride	EPA method 8010, 8240
Process liquors	Furoyl piperazine	Toluene	EPA method 8020, 8240
Off spec Materials	Chloroform	Chloroform	EPA method 8010, 8240
	Phenol	Phenol	EPA method 8040, 8270
	Sodium saccharin	Sodium saccharin	EPA method 8250, 8270
	Toluene	Toluene	EPA method 8020, 8240
	Methylene Chloride	Methylene Chloride	EPA method 8010, 8240
	Methyl iodide	Methyl iodide	EPA method 8240

Note: Sample preparation (SW-846 Third Edition)
Liquid method 5030
Solid method 3810

to the GC/PID by purge and trap Method 5030. The instrument will be calibrated using a five point calibration (initial calibration) with standards introduced by either Method 3810 or 5030 depending on the matrix being analyzed. Sample, matrix spike and method blank chromatographic data will be compared directly to standard response and retention time for qualitative and quantitative evaluation. A calibration check mixture will be evaluated daily to ensure the validity of the initial calibration. SW-846 Method 8240, which is a GC/MS method, may also be used.

Phenol - SW-846 Method 8040. Samples will be analyzed by gas chromatography (GC) equipped with a flame ionization detector (FID). Solid samples will be extracted using sonic disruption Method 3550. Liquid samples will be extracted using separatory funnel Method 3510. Extract aliquots will be introduced to the GC/FID by direct injection. The instrument will be calibrated using a five point calibration (initial calibration) with standards also introduced by direct injection. Sample, matrix spike and method blank chromatographic data will be compared directly to standard response and retention time for qualitative and quantitative evaluation. A calibration check mixture will be evaluated daily to ensure the validity of the initial calibration. SW-846 Method 8270, which uses a capillary column, may be also be used.

Chloroform and Methylene Chloride - SW-846 Method 8010. Samples will be analyzed by gas chromatography (GC) equipped with a halogen specific detector (HSD). Solid samples will be introduced to the GC/HSD by direct injection using headspace analysis Method 8310. Liquid samples will be introduced to the GC/HSD by purge and trap Method 5030. The instrument will be calibrated using a five point calibration (initial calibration) with standards introduced by either Method 3810 or 5030 depending on the matrix being analyzed. Sample, matrix spike and method blank chromatographic data will be compared directly to standard response and retention time for qualitative and quantitative evaluation. A calibration check mixture will be evaluated

daily to ensure the validity of the initial calibration. SW-846 Method 8240, which is a GC/MS method, may also be used.

Saccharin - SW-846 Method 8250. Samples will be analyzed by gas chromatography/mass spectometry (GC/MS). Solid samples will be extracted using sonic disruption Method 3550. Liquid samples will be extracted using separatory funnel Method 3510. Ash samples will be extracted using soxhlet Method 3540. Extract aliquots will be introduced to the GC/MS by direct injection. The instrument will be calibrated using a five point calibration (initial calibration) with standards also introduced by direct injection. Sample, matrix spike and method blank GC/MS data will be compared directly to standard response and retention time for qualitative and quantitative evaluation. A calibration check mixture will be evaluated daily to ensure the validity of the initial calibration. SW-846 Method 8270, which uses a capillary column, may also be used.

Methyl Iodide - SW-846 Method 8240.

c. Sampling Methods

Liquid - Samples of 55 gallon drums will be collected with a coliwasa sampler.

In order to prevent cross contamination the coliwasa will be cleaned after each sample is collected. The coliwasa will be cleaned by wiping with an absorbent (as needed) cloth to remove any residues. The sampler would then be washed with a warm solution of detergent plus water, rinsed several times with tap water, rinsed with distilled water and wiped dry. Consideration is also being given to the use of a disposable glass coliwasa.

Sampling will follow the EPA recommended procedures outlined below:

1. The drum will be positioned so that the bung is up (drums with the bung on the end will be positioned upright; drums with bungs on the side will be laid on its side, with the bungs up).

2. The contents of the drum will be allowed to settle.

3 The bung will slowly be loosened with a sparkproof bung wrench allowing the release of any pressure.

4. The bung will be removed and the sample collected through the bung hole using the coliwasa described in SW-846.

5. The drums will be segregated according to waste type. The drums of each type would be numbered consecutively and a table of random numbers will be used to select which drums out of the segregated group will be sampled. A minimum of four samples or 10% of the containers of the same waste type, whichever is greater will be sampled and analyzed. A table of random numbers will be used to select which drums would be sampled.

6. Samples of the drum contents would be collected from top to bottom using the coliwasa to obtain representative sample.

7. The sample would be transferred immediately from the coliwasa to a large mouth glass container with teflon lined cap. Once the sample is collected and deposited in the sample bottle, the cap would be placed on the bottle. The sample would be kept cold until delivered to the laboratory. The sample bottle would be labeled in the field. A record of the sample would be entered into the field log book. A field analysis request sheet and chain of custody record would be submitted to the laboratory with the sample.

8. After the sample or samples are brought to the laboratory, the contents of the one liter bottle would be mixed by rotation under refrigerated conditions ($4^{o}C$) in order to minimize loss of any volatile components potentially present; an aliquot for VOC analysis would be placed in the required 40 ml vial with a teflon lined septum. No headspace will be present in the vial. The sample would be refrigerated at four degrees C.

Solids - Filter cakes which contain diatomaceous earth, activated carbon and varying amounts of solvents are stored in metal drums. These drums will be sampled by a trier sampler. This sampler is suitable for the waste since this filter cake is wet and would form a core upon sampling with this device. The drums would be segregated according to waste type. A minimum of one sample out of ten containers of the same waste type or 10% for more than 10 drums would be collected. A table of random numbers would be used to select which drums would be sampled. The following technique would be used:

1. The trier is inserted into the waste material at a 0 to 45 degree angle from the horizontal. The orientation is such to minimize the spillage of sample from the sampler.

2. The trier is rotated once or twice to cut a core of material.

3. The trier is slowly withdrawn making sure that the slot is facing upward.

4. The sample is transferred using a spatula a wide mouth glass one liter bottle.

5. Two other samples will be collected at the different points in the container and combined in the same sample container.

6. A label will be attached to the sample container, a record is made in the field

log book; and a sample analysis request sheet and chain of custody record is completed.

7. The sampler is wiped and cleaned via the same method as the coliwasa.

8. The sample would be kept at 4 degrees C until picked up by the outside testing laboratory. The sample would be prepared for extraction according to either Method 3550 or 3540 from SW-846.

Hazardous Waste Storage Tank - Liquid wastes will at times be stored in the waste solvent holding tank. The tank is equipped with a mechanical agitator and a recirculation pump. The sample will be collected directly from a tap in the recirculating line according to the following procedure:

1. The recirculating pump and the agitator will be started and run for a period of 10 minutes which adequately ensures a homogeneous waste.

2. The sample tap will be connected by teflon tubing or teflon lined tubing to a 1 liter glass bottle which is packed in ice or cold packs.

3. The sample line will be flushed by opening the tap after complete mixing of the tank contents and allowing the flow to continue for approximately one minute into a spare 1 liter container. The valve would then be closed and the spare container replaced with the sample bottle.

4. The sample will be collected at a flow rate which would collect approximately 100 ml per minute into a glass container.

5. Upon completion of the sample collection, the valve would be closed and the sample tube allowed to drain. The bottle then will be capped and kept cold (4 deg C) until delivery to the outside testing laboratory.

6. The sample will be labeled, data entered into the field log book and the sample analysis request form and chain of custody forms completed in the field.

7. The waste container contents will be returned to the waste solvent holding tank after sampling is completed.

Off-site wastes - Liquid waste may be received for treatment and disposal for off-site Pfizer locations in tank trucks. The waste within these tankers is assumed to be homogeneous. Samples will be collected directly from the man-hole on the top of the tank by the following procedure:

1. Samples will be collected directly into a one liter glass container, secured to a stainless steel modified dipper with a stainless steel clip.

2. Samples containers will be immediately closed with teflon line caps.

3. The closed sample containers will then be rinsed below the lid with cold tap water and wiped dry.

4. The modified dipper and clip will be decontaminated in the same manner as that for the coliwasa device used for drum sampling.

5. Two samples taken at different depths shall be taken from each tank truck for the required laboratory analyses to verify homogeneity.

6. The sample will be kept cold until delivered to the outside testing laboratory. The sample bottle would be labeled in the field. A record of the sample would be entered into the field log book. A field analysis request sheet and chain of custody record would be submitted to the laboratory with the sample.

7. After the samples are brought to the laboratory, the contents of the one liter bottle will be mixed by rotation under refrigerated conditions (4°C) in order to minimize loss of any volatile components potentially present; an aliquot for VOC analysis would be placed in the required 40 ml vial with a teflon lined septum. No headspace will be present in the vial. The sample would be refrigerated at four degrees C.

Wastes received in drums from offsite locations will be sampled using procedures presented in another section. To assure that these procedures adhere to the Process Tolerance Limits required, a detailed Quality Assurance and Quality Control Program has been developed and detailed in Section 4.

4. Quality Assurance and Quality Control Program

Quality assurance and control procedures will be in accordance with those set forth in "Sampling and Analysis Methods for Hazardous Waste Combustion", EPA 600/8-84-002, February 1984, "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", SW-846, and "Methods for Chemical Analysis of Water and Waste", EPA-600/4-79-020, March 1979, revised March 1983. These documents refer to the "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans", USEPA QAMS-005/80, December 1980. The following are specific areas to insure the quality of data:

Mr. Ramon Marrero will be in charge of QA/QC program. While PPI will probably contract the analytical program to an outside laboratory, the QA/QC program of the laboratory will have to be consistent with the program described herein.

Trained operators will collect samples. Training for sample collection procedures in covered in PPI's personnel training program. Mr. R. Marrero directs the RCRA training program. He has over four years experience working in PPI's hazardous waste management program. He has obtained firsthand experience with sampling procedures from contract laboratory personnel and from USEPA guidance documents. Refer to the personnel training program for Mr. R. Marrero's

qualifications and experience.

The Analytical Quality Assurance Program consists primarily of a thorough laboratory documentation network in combination with mandatory, systematic inclusion of instrumental and analytical quality control procedures and practices into all laboratory analyses. The resulting quality assurance program data base legally documents all component analytical activities and confirms acceptable analytical instrument and method performance throughout the duration of all laboratory operations. The analytical quality assurance program thereby ensures that all laboratory data is legally and scientifically valid.

The Sampling Quality Assurance Program is designed to ensure the complete legal integrity and validity of each sample from collection in the field through transport and submittal to the laboratory. This program specifies sampling procedures and criteria for sample collection, preservation, recording, labelling, chain of custody documentation and submittal to the laboratory.

PPI Sampling Procedures will utilize USEPA approved and/or proposed sampling methods and equipment in technical publications of EPA 600 series and SW-846 described previously.

Chain of custody forms will accompany all samples to track the possession of each sample from collection in the field through laboratory analysis. These forms describe and summarize the sample container contents of each transport shipper and require the signature of all persons involved in chain of custody possession (see Appendix N).

All laboratory analyses requiring analytical instrumentation will be recorded in the various laboratory instrument's logbooks which categorically record and document analytical instrument settings and performance data. These logbooks record instrument calibration data, specific sample volume, instrument parameters, and corresponding performance data for each sample.

A minimum of six analytical standards will be used for colorimetric analyses; all analyses are calibrated daily with a minimum of one blend and two standards. All QC measurements are recorded in the quality control book. To validate analytical standards, the absorbingly value of a midrange standard is recorded and statistically compared with previous results.

To maintain the accuracy of analytical balances, all instruments are checked and calibrated every six months by a factory representative. Additionally, in-house accuracy checks are performed with Class "S" weight sets.

For atomic absorption analyses, daily performance checks are performed as follows: nebulizer and burner optimization with zinc standards, recording of absorbence of individual standards, extensive use of calibration mode (characteristics concentration, bar graph max, absorbence check and maximization).

The gas chromatographs are monitored every twelve (12) hours to ensure that instrument response is within EPA specifications. Five (5) point GC priority pollutant calibration curves are constructed for quantification purposes and are verified at least once every twelve (12) hours.

All data will be reported in on "work sheets" with details such as, absorbence, wave length, normalities of reagents, correction factor, blank analysis results, standard calibration curves and the reported analytical result.

The validation is accomplished by requiring the analyst to date and sign each analysis on the day completed. The laboratory supervisor will witness the date and the completion of the analyses and check the calculations. All work sheets are maintained in files for QC revision and statistical reports.

The QC Program takes into consideration the control of the many variables that affects the production of reliable data including:

Distilled water, glassware, reagents, solvents, treatability of standards and that gases are of high quality.

Duplicate/spike quality control samples will be systematically included into all laboratory analyses. The percent recovery and irreproachability determinations from these control samples provide a measure of the precision and accuracy of the analyst. Over ten percent (10%) of samples analyzed are run as duplicates and spikes in accordance to EPA guidelines.

Over ten percent (10%) of the samples analyzed are QC samples: duplicate, spiked and reference standard samples. An annual intra-laboratory proficiency testing program is conducted in which known samples are submitted for analysis as unknowns. The QC samples are treated in the same way as routine samples. The volume, type of container, preservation, labeling and transportation is the same for all.

In order to ensure that waste characterization is based on representative samples and analytical results, one duplicate sample will be collected for every ten samples collected. The duplicate samples will be collected at the same point, same time and with the same equipment and procedures as the routine sample. The duplicate sample will be treated in the same way as the routine sample. The results of analyses on the routine and duplicate sample will be compared using a cusum chart or classic Shewhart control chart. These results will be used to validate the precision of the sampling technique and sample homogenity.

Sampling equipment will be decontaminated using the procedures described in Sampling Methods.

The coliwasa, trier and modified dipper samplers are fabricated with stainless steel.

Samples will be collected in a glass bottle and kept at $4^{o}C$ from the time of collection until extraction to prevent the loss of volatile materials.

A summary of the quality control program and data acceptance criteria is presented in the following section:

- An organic free deionized-distilled water blank will be analyzed to demonstrate that the analytical system is interference free. Spiked organic free water samples will be also analyzed and compared to QC limits for precision and accuracy estimates.

- Secondary standards that contain the compounds of interest and which bracket the working range of the analytical system will be prepared. These standards will be used to prepare calibration standards on a daily basis.

- Laboratory replicates will be analyzed to validate the precision of the analyses using Quality Control limits.

- The matrix spike sample will be analyzed to check the accuracy of the analysis. The percent recovery will be compared with the quality control limits to determine whether there are interferences or matrix effects. The quality control limits have been developed by statistically analyzing a set of spiked samples to generate the standard deviation of the percent recovery and range.

If the analytical results (when compared to the quality control limits) are satisfactory then the validity of the related data is established. If the results are unsatisfactory, then the laboratory analyses would be repeated to determine the source of systematic errors or of excessive deviation between replicate samples or sample interferences.

Audit samples will be obtained from EPA and will submit to our contract analytical laboratory for analysis. PPI will also require that our contract laboratory participates in performance evaluation studies directly with the agency.

Data Quality Objectives (DQO) are quantitative and qualitative statements specifying the quality of the sample data required to support the decision-making process. DQO define the total uncertainty in the data that is acceptable for each specific activity during the effort. This

uncertainty includes both sampling error, inhomogeneity and analytical error. Ideally, zero uncertainty is the intent; however, the variables inherently associated with the effort (field, laboratory and matrix) contribute to uncertainty in the data. It is the overall project objective to keep the total uncertainty within an acceptable range that will not hinder the intended use of the data. In order to achieve this objective, data quality requirements such as criteria for accuracy and precision, sample representativeness, data comparability, and data completeness have been specified. The overall data quality objectives and requirements will be established such that there is a high degree of confidence in measurements performed during the effort.

As stated earlier, the parameters that will be used to specify data quality requirements and to evaluate the analytical system performance are precision, accuracy, representativeness, completeness, and comparability (PARCC). Table C-7 presents definitions for these parameters.

The objective is to maximize the confidence in the data in terms of PARCC.

Duplicates and matrix spikes will be collected at a frequency of no less than 10% such that a specific degree of precision and accuracy can be calculated. This frequency is sufficiently high to ensure adequate data for precision and accuracy information for both small and large drum groups of the same waste. The data quality objective for duplicates is to achieve precision equal to or greater than that summarized on Table C-8.

Precision will be calculated as the relative percent difference (RPD) if there are only two (2) analytical points and as relative standard deviation (RSD) if there are more than two (2) analytical points. Although accuracy is best assessed by evaluating the results of blanks, blanks do not monitor analyte losses. The submission of blanks will, however, monitor contaminants introduced in the analytical process. The data quality objective for trip blanks is to meet or exceed the required quantitation limit established under SW-846. In the event that the blanks are contaminated and/or poor duplicate precision is obtained the associated data will be qualified accordingly. Through the submission of QC samples, the distinction can be made between laboratory problems, sampling technique, and sample matrix variability.

To ensure sample representativeness, all sample collection will be performed in strict accordance with EPA-recommended

TABLE C-7

DEFINITIONS OF DATA QUALITY PARAMETERS

- Precision - a measure of the reproducibility of measurements under a given set of conditions.
- Accuracy - a measure of the bias that exists in a measurement system.
- Representativeness - the degree to which sample data accurately and precisely represent selected characteristics.
- Completeness - a measure of the amount of valid data obtained from the measurement system compared to the amount that is required.
- Comparability - a measure of confidence with which one data set can be compared with another.

procedures for collection and preservation; EPA-recommended holding times specified in "Methods for Chemical Analysis of Water and Wastes" (EPA 600/4-79-020) and the Federal Register, 26 October 1984 (40 CFR Part 136).

The data quality objective for the completeness of data with respect to sampling is 100%. Although this goal appears rather ambitious, a lesser primary objective is not consistent with PPI policies. In the event 100% is not obtained, the effect of the uncollected data will be evaluated as to its impact (if any) on the effort objectives. Corrective actions will be initiated to resolve any determined data gaps in the original objectives resulting from less than 100% data completeness. Every effort will be made to obtain complete and valid data for all sampling.

In order to establish a degree of comparability such that observations and conclusions can be directly compared with all historical data, PPI will use standardized methods of sample collection and preservation, as well as established holding time requirements.

The laboratory will demonstrate analytical precision and accuracy by the analysis of laboratory duplicates and matrix spikes. Precision (as well as instrument stability) will also be demonstrated by comparison of response factors for calibration standards. Laboratory accuracy will be demonstrated by the addition of surrogate and matrix spike compounds. Accuracy will be presented as percent recovery. Precision will be presented as relative percent differences (RPD), relative standard deviation (RSD), or percent difference (%D), whichever is applicable to the type and number of QC samples involved. Laboratory method blanks will also demonstrate accuracy with respect to the analyses.

The analysis laboratory will be required to process (purge, extract, or digest) an aliquot of sample such that the analytical results will provide a high degree of representation with respect to the sampling point. In addition, the analysis laboratory will be expected to document all analytical problems encountered during the course of the effort. Communication will be maintained with the laboratory so that analytical problems encountered with critical sample points will allow these samples to be re-collected, if necessary. The PPI targeted quantitative objectives (criteria) for laboratory accuracy and precision are summarized in Table C-8.

TABLE C-8

CRITERIA OBJECTIVES

Precision Objectives	Liquid	Solid/Other
Field Duplicate/Replicates (Blind or labeled)		
VOA	within 20% RPD	within 30% RPD
BNA	within 25% RPD	within 40% RPD
Inorganic Parameters	within 25% RPD	within 40% RPD
Wet Chemistry Parameters	within 25% RPD	within 40% RPD
Laboratory Duplicates (Unspiked)		
VOA	within 20% RPD	within 30% RPD
BNA	within 25% RPD	within 40% RPD
Inorganic Parameters	within 20% RPD	within 20% RPD
West Chemistry Parameters	within 20% RPD	N/A
Laboratory Duplicate (MSD)		
VOA	As specified in current SW-846	As specified in current SW-846
BNA	As specified in current SW-846	As specified in current SW-846
Accuracy Objectives		
Laboratory Blanks		
VOA	As specified in current SW-846	As specified in current SW-846
BNA	As specified in current SW-846	As specified in current SW-846
Inorganic Parameters	As cited in the SW-846 method	As specified in SW-846 method
Wet Chemistry Parameters	Less than the MQL	N/A
Matrix spikes/surrogate spikes		
All Fractions	As specified in current SW-846	As specified in current SW-846
Inorganic and West Chemistry Parameters	75-125%	75-125%

The laboratory will be expected (as an ideal objective) to report the method quantitation limits (MQL) for all samples in the appropriate statistical reporting units for all analyses as stated in the SW-846 deliverables guidance. However, it should be noted that actual quantitation limits are sample specific, and depend on matrices, percent moisture, and the specific analyte.

Routine QA Procedures include:

- A new standard curve for each new batch of reagent.

- Checks for each analytical run:

  a. one blank of water and reagents
  b. one midpoint standard
  c. one spike for recovery determination
  d. one set of duplicate analyses

QC data is reported in two forms: "Duplicate Precision Data" and "Spiking Data". These data are evaluated in order to determine the precision, accuracy and correctness of the procedure used for each determination.

5. Additional Sampling and Analytical Requirements

1. Confirmation of Waste Characterization

As indicated previously, the waste characteristics should be relatively constant because raw material usage and operating procedures are strictly controlled. However, the initial characterization analysis will be repeated in accordance with the protocol described in Table C-4 to confirm the characteristics.

2. Procedures to Document Compatibility of Waste with Containers

Published data have been used to document the compatibility of the waste constituents with the containers and the storage tank. These data are referred to in Section D.

3. Procedures to Characterize Leaks, Spills, and Run-off

If there is a spill of hazardous wastes and the characteristics of the spilled material are known, then the material would be removed and placed in a compatible container (DOT 17E or 17H) for storage and treatment. All of the hazardous wastes are compatible with these containers. Details of spill cleanup procedures are as follows:

a. Detailed Cleanup Procedures

PPI proposes to transfer leaks and spills into drums. The first wash of the contaminated area would also be drummed. Additional wash water would be discharged directly to the Barcelonenta regional waste water treatment plant. Samples of the drummed leak or spill would be collected using the coliwasa sampler. The sample would be analyzed for the pretreatment parameters presented in Table C-4. If the origin of the leak or spill is unknown, the sample would be analyzed by EPA methods for the hazardous constituents that are used in the plant. Using these procedures, the presence and concentration of all of the Appendix VIII constituents used in the plant will be determined. A list of the analytical methods follows:

Material	Method of Analysis	Reference
Xylene	8020, 8240	SW-846
Toluene	8020, 8240	"
Methyl iodide	8240	"
Methanol	8240, 8010	"
Chloroform	8010, 8240	"
Saccharin	8250, 8270	"
Phenol	8040, 8250, 8270	"
Methylene chloride	8010, 8240	"

The first wash will be combined with other process wastewaters in an equalization tank; the combined waste will be analyzed for BOD_5 and pH. Similarly, wash water that is used to

decontaminate equipment during closure would also be collected in a tank truck, transported to an equalization tank and analyzed for BOD_5 and pH. These wash waters will be discharged to the Barceloneta regional wastewater treatment plant as long as the discharge is in compliance with the PRASA facility agreement.

Hazardous waste spills would either be drummed or pumped into a tank truck depending upon the volume of the leak or spill. The first wash of the contaminated area would also be contained and transported to an equalization tank for BOD_5 and pH analysis. Subsequent water washes would be discharged directly to the Barceloneta regional wastewater treatment plant.

b. Analysis

BOD_5 analysis will be in accordance with "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, 1982. Quality assurance will be in accordance with "Handbook for Analytical Control in Water and Wastewater Laboratories," EPA-600/4-79-019, March 1979.

c. Quality Assurance

The quality assurance for BOD_5 includes duplicates, blanks, seed dilutions, EPA check samples and winkler titration to check the calibration of the dissolved oxygen equipment.

d. Storage

The north drum storage area will contain 10 percent of the total liquid waste volume stored in that area. A portable air-operated diaphragm pump would be used to transfer large volume spills from the north drum storage area to the 5000 gallon waste storage tank. Small volume leaks would be drummed.

Filter cakes are stored in metal drums in both the south, north, or west drum storage

areas. A fork lift would be used to transfer pallets containing these drums to the incinerator loading platform which is approximately 10 feet above grade. The filter cake would be transferred manually from the fiber packs into small plastic bags or cardboard boxes and fed to the incinerator via the ram feeder.

If the characteristics of the spilled material is not known, then steps would be taken to determine what constituents are present in the spill. This would be done after the spill is contained and placed in drums. A representative sample of the spilled material would be collected, inspected and analyzed for the constituents that are assumed to be present. In addition, the sample would be analyzed for pH and ignitability. If the spilled material is determined to be a hazardous waste, then all of the analyses in Table C-4 would also be completed.

4. Procedures for Documenting Waste Ignitability

As shown in Table C-4, the wastes will be analyzed annually to confirm whether the wastes exhibits the characteristic of an ignitable

5. Procedures to Assure Waste Compatibility with Residues in Previously Used Containers

All of the hazardous wastes are compatible and therefore not of concern. Also containers will be emptied after use (in accordance with 261.7 (b) (1) (i) and (b) (1) (ii). Any residues that remain are not subject to regulation and parts 261 to 265.

6. Procedures for Assuring Equipment Decontamination during Closure

As discussed in the closure section, equipment will be decontaminated by steam cleaning followed by a water rinse. The wash waters will be collected and transferred to one of the three 38,000 gallon neutralization tanks and analyzed to determine whether the waste water

can be discharged to the Barceloneta regional waste water treatment. The waste water would be analyzed for these discharge parameters presented in the Amendments to the Puerto Rico Aqueduct and Sewer Authority, Rules and Regulations, May 1986. The discharge limitations can be found in Section 5.02 C.1 through C.3. The parameters include pH, BOD, heavy metals, phenols, oil and grease, suspended solids and COD.

7. Procedure for Specific Testing of Incinerator Ash or Other Treatment Residuals Prior To Disposal

For restricted wastes with treatment standards expressed as concentrations of waste extract, testing of treatment residuals, or an extract of such residuals by TCLP, will be used to assure treatment 268.41 standards are met. SW-846 Methods 8240 and 8250 will be used to analyze for any suspected listed contaminant.

For wastes with treatment standards expressed as concentrations in the waste, testing treatment residuals, not an extract of such residuals, will be conducted to meet 268.43 standards. Currently the only waste listed is methylene chloride. SW-846 Method 8010 will be used to analyze for any suspected methylene chloride.

For California list wastes (268.32) not subject to Subtitle D treatment standards, treatment residuals will be tested metals to assure compliance with applicable prohibitions outlined in 40 CFR Part 268.32. California list metals will be analyzed using the SW-846 Method 6010 inductively coupled plasma (ICP) analyzer and the Method 7471 cold vapor analyzer for mercury.

8. Procedures for Receipt of Waste from Another Pfizer Facility

PPI has not stored or treated hazardous wastes from any other Pfizer, Inc. facility to date. However, we may choose at a later date to treat wastes from other Pfizer, Inc. facilities or

any other source. These wastes would be analyzed by the generator for the parameters specified in Table C-4 and C-5. If Appendix VIII constituents are present that are different than used at the Barceloneta facility, then the waste would be analyzed by the generator via EPA approved methods to determine the concentration of these Appendix VIII constituents. We will repeat critical analyses upon receipt of any off-site wastes. We would submit a revised Part A application (during interim status) prior to accepting wastes not previously identified. In addition, wastes will be rejected if they exceed any POHC limits in the permit, or metals specified in the California List or EP Toxicity The testing parameters, sampling plan and analytical methods for off-site wastes are as follows:

Sampling Procedures

Tank Car (liquid)	SW846
Drums (solid)	See Section 3-C
Drum (liquid)	See Section 3-C
Testing Parameters	Same table C-4
Analytical Methods	Same table C-5

ATTACHMENT B

CONTENT:

- Security Plan
- Inspection Schedules

Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

E. PROCEDURE TO PREVENT HAZARDS

The information presented in this section describes the procedures that are in effect to prevent fires, explosions and the release of hazardous wastes to the environment.

1. Security

a. Security Procedures and Equipment

Employees are required to show identification cards upon request when reporting to work. Visitors and contractors must sign a log sheet and obtain a Visitor's Pass prior to entering the plant.

The security of Pfizer Pharmaceuticals, Inc. is maintained by a staff of trained security guards, who monitor the entrance and exit to the plant and provide security services within the plant's premises.

The main gate at the South end of the facility is operated by remote control from the guardhouse. The facility is staffed with two guards 24 hours a day, 7 days a week. The guards normally work an 8-hour shift. During the evening and night shifts, one of the guards inspects the facilities at scheduled intervals maintaining radio contact with the other guard in the guardhouse. Figure E-1 shows a plot plan illustrating the patrol points taken by guards during 24-hour surveillance. Adequate lighting of the facility is located throughout the plant, and night lighting turns on automatically. Emergency lighting consists of battery powered emergency lights and flashlights.

b. Barriers and Means to Control Entrance

The entire active facility is enclosed within a 7 foot high chain-link fence topped by three strands of barbed wire. The fence has four gates. One located at the North end of the facility which is locked at all times; the other three are at the South end of the facility. One of which serves as the only entrance to the plant; all of the other gates

are locked. Figure E-1 shows the locations of fences and gates at the facility.

c. Warning Signs

Signs are posted at the entrance to each storage area, the incinerator and at the storage tank. These signs are legible from a distance of 25 feet and visible at all angles of approach from the entrance. These sign bear the legend "DANGER-UNAUTHORIZED PERSONNEL-KEEP OUT". These signs also have the legend written in Spanish - "Peligro Personal No Authorizado No Entre." The signs are constructed of plastic. These signs have red letters on a white background. The signs are 24 inches long by 12 inches high. The letters are 1.25 inches high by one inch wide. The waste solvent tank also has a legend which states Hazardous Solvent, Waste Solvent Storage Tank, Organic Synthesis. Also, "NO SMOKING" signs which are legible from a distance of 25 feet are placed in the container storage area.

d. Communications

Internal communications at the facility utilize two way walkie-talkies, a base station in the guardhouse, a paging system, and a dedicated telephone for emergencies. External communications consist of a direct telephone at the guardhouse, and a walkie-talkie with two repeater stations that cover the north and central area of Puerto Rico.

Facility Personnel in hazardous waste handling areas use walkie-talkies for internal communications. A telephone is located in the incinerator area for internal communications. All emergencies are reported to the Emergency Coordinator or guardhouse via telephone, fire alarm system or emergency phone (#333) to request internal/external support. The location of telephones and radio at the facility are shown on Figure E-1.

2. Inspection Schedule

a. General Inspection Requirements

Pfizer Pharmaceuticals, Inc. conducts regular inspections of equipment, structures and operating procedures that could cause or lead to the release of hazardous waste constituents.

b. Types of Problems

Table E-1 presents the schedule to inspect monitoring equipment; safety and emergency equipment; security devices; operating and structural equipment; the container storage area; the tank storage area and the incinerator area.

The items listed in Table E-1 are important because of their role in preventing, detecting or responding to environmental or human health hazards. Each item provides a list of problems that are normally encountered. The inspections assist in enforcing the requirements such as unobstructed aisle space, drums in good condition and available supplies of spill response equipment.

c. Frequency of Inspection

The recommended frequency of inspection is presented in Table E-1. The frequency of inspection of items is based on the rate of possible deterioration of the equipment,and the probability of an environmental or human health incident if the deterioration or malfunction of any operator error goes undetected between inspections.

3. Specific Process Inspection Requirements

Inspection of various equipment structures and procedures will be conducted per the inspection schedule provided in Table E-1. Inspection log sheets are appended (See Appendix G).

Typical problems that can be encountered with each item included in the inspection schedule are provided on the log sheet to serve as a reminder to the inspector and to ensure a complete inspection. The inspector is required to check the status of each item and indicate

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Safety and Emergency Equipment*:			
	Ambulance	Operational, out of supplies inaccessible	Monthly
	Standard industrial absorbency (Sorb-All, Vermiculite, etc.)	Out of Stock	Monthly and after use
	55-gallon drums (steel, Stainless steel)	Corrosion, structural damage, out of stock	Monthly
	Emergency shower and eyewash	Operational, leaks corrosion, dirty, inaccessible	Bi-Monthly
	Face shields and extra protective eyeglasses	Out of stock, broken, dirty	Monthly
	Fire protection diesel engine	Operational, sufficient fuel, pump discharge pressure	Weekly
	Fire extinguishers	Adequate pressure, inaccessible	Monthly
	Fire alarm system	Operational, inaccessible	Monthly
	Fire hydrants	Operational, inaccessible	Twice per year
	Fire Hoses	Leaks, broken, inaccessible	Monthly
	Fire Blankets	Out of stock, deteriorated inaccessible	Monthly

*The locations of Emergency Equipment are provided in Figure F-2.

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Safety and Emergency Equipment (Continued):			
	Fire detection devices	Operational, corrosion	Monthly
	First Aid Equipment	Out of stock	Weekly and after use
	Emergency lighting system	Insufficient charge, operational	Twice per year
	Flashlights	Insufficient energy, operational	Daily
	Protective clothing (coveralls, gloves, boots)	Out of stock, condition	Monthly
	Respirators	Cracks, proper fit	Bi-Monthly
	Air mask	Cracks, dirty, missing fittings/airhose	Bi-Monthly
	Self-contained breathing apparatus	Insufficient air pressure, cracks	Bi-Monthly
	Signs	Deteriorate, blocked	Monthly
	Facility fence	Corrosion, damage to chain-link fence or barbed wire	Weekly

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Safety and Emergency Equipment (Continued):			
	Main entrance remote control	Operational	Weekly
	South gates & locks	Corrosion, damage to chain-link fence or barbed wire, open lock, inaccessible	Weekly
Communications:			
	Paging System	Operational	Daily
	Two-way walkie talkies	Operational	Daily
	Telephone	Operational	Daily
Container Storage Areas*:			
	Container placement & stacking	Aisle space, stack height	Weekly
	Sealing of containers	Open lids	Weekly
	Label	Improper ID, missing date, hazardous waste, process, major constituent, illegible label	Weekly

*Details of the container storage areas' designs are discussed in Section D and provided in Figures D-1, D-2 and D-3.

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Container Storage Areas (Continued):			
	Containers	Corrosion, leaks, structural defects	Weekly
	Pallets	Damaged (broken wood, warped)	Weekly
	Fence, gate/lock	Corrosion, damage to chain-link fence, corroded lock, unlocked	Weekly
	Roof	Structural, leaks	Weekly
	Base or foundation	Cracks, spalling, uneven settlement, erosion, spills, leaks	Weekly

*Details of the container storage areas' designs are discussed in Section D and provided in Figures D-1, D-2 and D-3.

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Container Storage Area* (Continued):			
	Dikes	Cracks, deterioration	Weekly
	Spill collection trench	Cracks, spalling, erosion, spills and leaks, debris	Weekly
	Trench Valve(s)	Open, non-locked	Weekly
	Solvent transfer pump	Leaks, not grounded, mechanical difficulties such as poor seals	Weekly
	Forklifts	Operational	Daily

*Details of the container storage areas' designs are discussed in Section D and provided in Figures D-1, D-2 and D-3

TABLE F-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Tank Storage Area:			
	Dike	Cracks, deterioration	Daily
	Base or foundation	Cracks, spalling, uneven settlement, erosion, spills, leaks	Daily
	Warning signs	Damaged, not legible	Daily
	Piping, tank to incinerator	Broken supports, leaks, corrosion, deterioration	Daily
	Piping, pipe from Organic Synthesis to Waste Tank and south container area to incinerator	Broken supports, leaks, corrosion, deterioration	Daily, when in use
	Valves	Leaks, corrosion, deterioration	Daily
	Nozzles/Fittings	Leaks, corrosion deterioration	Daily
	Level Indicator	Broken, plug, not operational	Daily
	Ladder	Corrosion, structural stability	Daily

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Tank Storage Area (Continued):			
	Agitator, feed pump	Corrosion, leakage, mechanical difficulties	Daily, when in use
	Tank shell/head	Corrosion, discoloration, cracks, buckles, bulges	Daily, when liquid is is stored
	Metal thickness	Less than 0.158 inch (minimum thickness)	Annually
	Tank interior	Corrosion, cracks, pits	Annually
	Tank waste feed cut-off system	Corrosion, Liquid level over set point, no alarm	Monthly

TABLE E-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Incinerator:			
	Pumps	Leak, spill, mechanical difficulties, fugitive emission and sign of tampering	Daily when operated
	Valves	Leak, spill, fugitive emission and sign of tampering	Daily when operated
	Pipes	Leak, spill, fugitive emission and sign of tampering	Daily when operated
	Venturi scrubber	Leak, spill, fugitive emission and sign of tampering	Daily when operated
	Ash gate	Leak, spill, fugitive emission and sign of tampering	Daily when operated
	Waste feed cut off and alarm	- SEE LOG SHEET - Appendix G	Prior to starting an incineration, then monthly while in operation

whether its conditions is acceptable or unacceptable.

If the status of a particular item is unacceptable, appropriate and complete information is recorded including the date and nature of repairs and remedial action.

Inspection logs are maintained for each area. The logs are kept in the office of the Incinerator Operations Supervisor. As required, records of inspections are kept for at least 3 years from the date of the inspection.

The inspection of the tank waste feed cut off system and the incinerator waste feed cut off system and the associated alarms are performed on a monthly basis, following procedures as discussed in Appendix G. These inspections involve removing sensitive instrumentation for visual inspections. On a daily basis the exterior of the tank and associated piping, valves, and secondary containment are inspected.

4. Principal Procedures, Structures and Equipment to Prevent Hazards

In addition to a suitable security and inspection program the following section highlights the principal procedures, structures and equipment that minimize hazards.

a. Loading/Unloading

- Closed drums are transported via forklift to a container storage area where they can be stacked 3 drums high with the aisles 3 feet wide. In Section D, Figures D-1, D-2 and D-3 show the layout of drums in the container storage areas.

- The aisle space for the loading and unloading area in the south container storage area is 5 feet wide and 20 feet long. This space is adequate for the loading and unloading of drums.

- Liquid wastes are stored in the container storage area during transfer to the storage tank.

- Liquid waste transfer to the storage tank is relatively infrequent.

- Several back pressure relief valves are provided to prevent overpressurization of the feed piping to the incinerator.

b. Run-on/Run-off

- The container storage areas are covered.

- The topography slopes away from the entrance to the north and south drum storage areas eliminating run-on. The west drum storage has a trench at the entrance to trap run-on.

c. Water supplies

- The source of the facility drinking water and process water is the ground water aquifer. Two well are located on the PPI property and are shown on Figure E-1.

- Hazardous wastes are transported, stored or treated on areas that are covered with concrete and/or asphalt. The concrete containment of the container storage areas and the tank storage area will be coated with an impermeable epoxy as discussed in Section D. This method of secondary containment in addition to scheduled routine inspections and monitoring equipment, greatly reduce the chance of ground water contamination.

d. Power failure

- There are waste feed cutoff systems and an automatic shut-down of the incinerator during a power failure. If a power failure occurs to the incinerator, automatically the emergency quench is activated through the venturi scrubber and the emergency stack remains open to prevent heat buildup. After

a brief power failure ("power dip"), the unit is reset and normal operation resumes shortly. Following an extended power failure, the unit is reset and a heat-up time elapses until the unit resumes normal operation.

- There is a stand by diesel pump to provide sufficient water at adequate pressure and volume for fire protection

e. Personnel Protection

PPI has protective equipment on hand for use in an emergency situation (See Section F). Use of protection equipment is covered in the Personnel Training Program (See Section G). While working in the container storage areas, trained personnel wear safety glasses and impermeable gloves suitable for handling the solid or liquid waste. While working in the tank storage area, trained personnel wear safety glasses and when needed impermeable gloves suitable for handling the stored liquid waste. Personnel performing hazardous waste sampling wear safety glasses, an air mask and impermeable gloves covering to the elbows, and an apron suitable for sampling the solid or liquid waste. Personnel involved in the incinerator operations wear ear protection and safety glasses. When incinerating solid hazardous wastes, personnel protective gear includes tyvek suits, an air mask and impermeable gloves suitable for handling the solid or liquid waste.

This Program satisfies the Occupational Safety and Health Standard of 29 CFR Part 1910 Subpart I - Personal Protective Equipment.

f. Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes

Reactive waste are not stored in the waste storage facilities. Containers and tanks are compatible with the stored wastes; the only source of ignition is external to the containers. Signs are placed in the container storage area clearly marked with the legend "NO

SMOKING" and "DANGER-UNAUTHORIZED PERSONNEL KEEP OUT". Spark proof tools (brass hammers, wrenches, etc.) are used on all containers and tanks storing materials. The tank is equipped with a flame-arrestor and is shown in Figure D-7. A work permit is required to conduct corrective work maintenance. The work permit as shown in Figure E-2, provides a checklist of necessary safety items to be used/followed and precautions for the employee(s). The work permit is prepared by a Supervisor who evaluates the safety conditions prior to beginning work.

g. General Precautions for Handling Incompatible Wastes

All of the wastes that are stored in the containers, the tank, and the tank storage areas are compatible.

h. Management of Ignitable Wastes in Containers

Precautions taken in the container storage area to prevent accidental fire and explosion include the use of proper storage containers, appropriate warning signs, covered area to minimize radiant heat input, enclosed area (fence) to eliminate exposure, grounding during transfer, and adequate aisle space. Figure B-1 shows that container storage areas are more than 50 feet from the property line.

i. Management of Incompatible Waste in Containers

All of the hazardous wastes generated at PPI are compatible.

j. Management of Ignitable or Reactive Wastes in Tanks

There are no reactive hazardous wastes generated. Pfizer Pharmaceuticals, Inc. takes precautions to prevent accidental waste ignition protecting the tank from sources of ignition including: open flames, smoking, cutting, welding, hot surfaces, and sparks (static, electrical or mechanical). These operating conditions are reinforced by the work

permit. Proper equipment such as nonsparking tools are used. In addition, the tank is equipped with a flame arrestor. While ignitable wastes are handled, Pfizer Pharmaceuticals, Inc. confines smoking and open flame to specially designated locations. "No Smoking" signs are conspicuously placed wherever there is a hazard from ignitable waste.

The standards in NF PM 30-1981 were reviewed to determine buffer zone requirements. In accordance with Table 2-1 and 2-6 of this standard the minimum distance required between the tank and the property line is 30 feet. This distance is based upon storage of stable flammable liquids in a 5000 gallon horizontal tank that has an emergency vent capable of limiting the pressure in the tank to less than 2.5 psig. The incinerator storage tank is located 115 feet from the PPI property line.

FIGURE E-1

SITE PLAN

FIGURE E-2

WORK PERMIT

DISTRIBUTION:
ORIGINAL: ENG./CONT.
GOLD: SAFETY DEPT.
YELLOW: DEPT. OF AUTHORIZATION

PFIZER PHARMACEUTICALS INC.
BARCELONETA, PUERTO RICO

1988

WORK PERMIT FOR DANGEROUS TASKS

DATE _____ 198___ WO # _____ _____ TIME (MILITARY)

WORK DESCRIPTION _____

_____

_____

The following precautions should be taken in the work area:
(Specified by the Department Supervisor) Name of Supervisor _____

- [X] NO SMOKING
- [X] USE SAFETY GLASSES, HARD HAT AND SAFETY SHOES
- [ ] USE RUBBER GLOVES
- [ ] USE AIR MASKS
- [ ] USE NOISE PROTECTION
- [ ] USE COMPLETE PROTECTIVE CLOTHING
- [X] DO NOT WORK ALONE
- [ ] HAVE APPROPRIATE FIRE EXTINGUISHERS ON HAND
- [ ] USE WELDING SHIELD
- [ ] DO NOT USE ELECTRIC TOOLS
- [ ] HAVE SUFFICIENT WATER ON HAND
- [ ] USE SAFETY BELTS
- [ ] AVOID DIRECT CONTACT WITH PROCESS MATERIALS
- [ ] IDENTIFY EMERGENCY ESCAPE ROUTE
- [ ] REQUEST APPROVAL FROM WORK PERMIT ISSUER TO CONNECT ELECTRICITY
- [ ] DO NOT CARRY OUT WORK WITHOUT SAFETY GUARD RAIL
- [ ] MAINTAIN HUMID AREA
- [ ] USE FIREPROOF BLANKETS TO CONTAIN SPARKS
- [ ] USE SPARK PROOF TOOLS

SPECIAL PRECAUTIONS:
Verify explosive danger in the atmosphere.

☐ Continuously ☐ every _____ by _____

Others _____

_____

_____

I, _____ am satisfied with all the preparations which have been put in practice for the protection of the persons who will carry out the work. These preparations include:

- [ ] CLEANING AND WASHING OF EQUIPMENT
- [ ] NEUTRALIZING SOLUTION PREPARED AND AVAILABLE IN THE AREA
- [ ] CONFIRMED EXPLOSIVE - DANGER FREE ATMOSPHERE
- [ ] ALL FLAMABLE AND/OR TOXIC MATERIALS WERE REMOVED FROM THE WORK AREA
- [ ] PLACEMENT OF LOCKS AND/OR SAFETY WARNINGS IN ALL ELECTRICAL VALVES AND CONTROLS
- [ ] CLEAN AND UNPRESSURIZED PIPING AND EQUIPMENT
- [ ] PERSONNEL ORIENTED TO THE NEAREST LOCATION OF SAFETY EYE-WASH AND SHOWER STATION
- [ ] PLACEMENT OF BARRICADES TO IMPEDE ACCESS TO PERSONS AND/OR VEHICLES TO THE WORK AREA

SPECIAL PREPARATIONS: _____

_____

I declare that we have carefully read and understood the above instructions, that we will obey them, and will inform all personnel who participate in this work about the dangers and precautions indicated above.

Signed _____ Occupation _____
Signed _____ Occupation _____
Signed _____ Occupation _____
Signed _____ Occupation _____
Signed _____ Occupation _____

AUTORIZACION PARA REALIZAR TRABAJOS PELIGROSOS

FECHA _____ 198_ W O # _____ _____ HORA (MILITAR)

DESCRIPCION DEL TRABAJO _____

LAS SIGUIENTES PRECAUCIONES DEBERAN TOMARSE EN EL AREA DE TRABAJO (ESPECIFICADAS POR EL SUPERVISOR DEL DEPARTAMENTO) NOMBRE SUPERVISOR _____

- X NO FUMAR
- X USAR LENTES, CASCO Y ZAPATOS DE SEGURIDAD
- ___ USAR GUANTES DE GOMA
- ___ USAR MASCARA DE AIRE
- ___ USAR PROTECCION CONTRA RUIDOS
- ___ USAR ROPA DE PROTECCION COMPLETA.
- X NO TRABAJAR SOLO
- ___ TENER EXTINGUIDOR DE INCENDIOS ADECUADO A LA MANO
- ___ USAR PANTALLA PARA SOLDAR
- ___ NO USAR HERRAMIENTAS ELECTRICAS
- ___ TENER BASTANTE AGUA A LA MANO
- ___ USAR CINTURONES DE SEGURIDAD
- ___ EVITAR CONTACTO DIRECTO CON MATERIAL DE PROCESO
- ___ PREVEER E IDENTIFICAR RUTA ESCAPE EMERGENCIA
- ___ SOLICITAR APROBACION DEL QUE EMITE ESTA AUTORIZACION PARA CONECTAR ENERGIA.
- ___ NO REALIZAR EL TRABAJO SIN GUARDIA
- ___ MANTENER AREA HUMEDA
- ___ USAR FRIZAS A PRUEBA DE FUEGO PARA DETENER LAS CHISPAS
- ___ USAR HERRAMIENTAS ANTICHISPA.

PRECAUCIONES ESPECIALES:

VERIFICAR PELIGRO DE EXPLOSION EN LA ATMOSFERA

☐ CONTINUAMENTE ☐ CADA _____ POR _____

OTRAS _____

YO _____ ESTOY SATISFECHO CON TODOS LOS PREPARATIVOS QUE SE HAN PUESTO EN PRACTICA PARA LA PROTECCION DE LOS QUE VAN A REALIZAR EL TRABAJO ESTOS PREPARATIVOS INCLUYEN

- ___ LIMPIEZA Y ENJUAGUE DE EQUIPO
- ___ SOLUCION NEUTRALIZANTE PREPARADA Y DISPONIBLE EN EL AREA
- ___ AUSENCIA DE PELIGRO DE EXPLOSION COMPROBADA EN LA ATMOSFERRA
- ___ TODOS LOS MATERIALES INFLAMABLES Y/O TOXICOS FUERON RETIRADOS DEL AREA DE TRABAJO
- ___ COLOCACION DE CANDADOS Y/O AVISOS DE SEGURIDAD EN TODAS LAS VALVULAS Y CONTROLES ELECTRICOS
- ___ TUBERIA Y EQUIPO LIMPIO Y LIBRE DE PRESION
- ___ INDICACION DADA AL PERSONAL SOBRE LA LOCALIZACION DE LA DUCHA Y LAVA-OJOS MAS CERCANO
- ___ COLOCACION DE OBSTACULOS PARA IMPEDIR EL ACCESO DE PERSONAS Y/O VEHICULOS AL AREA DE TRABAJO

PREPARATIVOS ESPECIALES _____

DECLARO QUE HEMOS LEIDO CUIDADOSAMENTE LAS INSTRUCCIONES QUE ANTECEDEN, QUE LAS HEMOS ENTENDIDO Y QUE LAS OBEDECEREMOS. INFORMAREMOS A TODO EL PERSONAL QUE PARTICIPE EN ESTE TRABAJO, SOBRE LOS PELIGROS Y PRECAUCIONES ARRIBA INDICADOS

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

APPENDIX G

INSPECTION TABLES

HAZARDOUS WASTE
INSPECTION LOG SHEET
ENGINEERING

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Spill control equipment (e.g. Absorbents)						
Stock no. 30500	Monthly	Out of stock				
30501	Monthly	Out of stock				
95555	Monthly	Out of stock				
95552	Monthly	Out of stock				
30502	Monthly	Out of stock				
30503	Monthly	Out of stock				
Fire protection diesel engine	Weekly	Operational, sufficient fuel, pump discharge pressure, oil level				
Fire hydrants	Twice per year	Operational				
Fire alarms	Monthly	Operational				
Emergency lights	Twice per year	Insufficient charge, operational				

HAZARDOUS WASTE
INSPECTION LOG SHEET
PERSONNEL

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Face shield/eye protection	Monthly	Out of stock, broken, dirty				
Emergency shower and eyewash	Bi-Monthly	Operational, leaks, corrosion, dirty				
Respirators	Bi-Monthly	Cracks, proper fit				
Air mask	Bi-Monthly	Cracks, dirty proper fittings, air hose				
Self contained breathing apparatus	Monthly	Insufficient air pressure, cracks				
First aid equipment	Weekly and after use	Out of stock				
Fire extinguishers	Monthly	Adequate pressure				
Facility fence	Weekly	Corrosion, damage to fence or wire				
North and south gates & locks	Weekly	Corrosion, open lock, damage, inaccessible				

HAZARDOUS WASTE
INSPECTION LOG SHEET
PERSONNEL (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Main entrance remote control	Weekly	Operational				
Signs	Monthly	Deteriorate				
Flashlights	Daily	Insufficient charge, operational				
Fire hoses	Monthly	Leaks, broken				
Fire blankets	Monthly	Out of stock, deteriorated				
Fire detection devices	Monthly	Operational				
Ambulance	Monthly	Operational, out of supplies, inaccessible				

HAZARDOUS WASTE
INSPECTION LOG SHEET
ORGANIC SYNTHESIS

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Safety Equipment Flexible hoses with quick connect coupling	Monthly	Out of stock, cracks, fittings missing				
55 gallon drums (17E & 17H)	Monthly	Out of stock, corrosion, structural damage				
Protective Clothing Tyvek coveralls	Monthly	Out of stock condition				
Viton/rubber boots Viton/pvc/rubber gloves Acid resistant suit OSHA response suit	Monthly	Out of stock, condition				

HAZARDOUS WASTE
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____

month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Container Storage Storage Area						
Container placement & stacking	Weekly	Aisle space				
Sealing of containers	Weekly	Open lids				
Label	Weekly	Improper ID, missing date, hazardous waste, process, major constituent illegible label				
Containers	Weekly	Corrosion, leakage, structural defects				
Pallets	Weekly	Damaged (broken wood warped)				
Fence, gate/lock	Weekly	Corrosion, damage to chain link fence, sticking or corroded lock, unlocked				

HAZARDOUS WASTE
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Roof	Weekly	Structural, leaks				
Base or foundation	Weekly	Cracks, spalling, uneven settlement, erosion, spills, leaks				
Dikes	Weekly	Cracks, deterioration				
Sump area	Weekly	Cracks, spalling, uneven settlement erosion, wet spots, debris				
Trench Valve(s)	Weekly	Open				
Solvent transfer pump	Weekly	No suction or discharge, leaks, not grounded, mechanical difficulties				

HAZARDOUS WASTE
INSPECTION LOG SHEET
ORGANIC SYNTHESIS

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Tank Storage Area						
Dike	Daily	Cracks, deterioration				
Base or foundation	Daily	Cracks, spalling, uneven settlement, erosion, spills, leaks				
Warning signs	Daily	Damaged, not legible				
Piping, from Organic Synthesis to Waste Tank and south container area to incinerator	Daily when in use	Broken supports, leaks, corrosion, deterioration				
Piping, tank to incinerator	Daily when in use	Broken supports, leaks, corrosion deterioration				
Valves	Daily	Leaks, corrosion, deterioration				
Nozzles/Fitting	Daily	Leaks, corrosion, deterioration				
Level indicator	Daily	Broken, plug, not operational				

HAZARDOUS WASTE
INSPECTION LOG SHEET
ORGANIC SYNTHESIS

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Ladder	Daily	Corrosion, structural stability				
Agitator, feed pump	Daily	Corrosion, leakage, mechanical difficulties				
Tank shell/head	Daily	Corrosion, discoloration, cracks, buckles, bulges				
Metal thickness	Annually	Less than 0.158 inch (minimum thickness)				
Tank interior	Annually	Corrosion, cracks, pits				
Tank Waste feed cut-off System	Daily	Corrosion				
	Monthly	Liquid level over set point				

HAZARDOUS WASTE
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

ITEM	FREQUENCY	TYPE OF PROBLEM TO LOOK FOR	STATUS		REPAIR OR REMEDIAL ACTION	
			Acceptable	Unacceptable	Date	Nature
Daily Inspection of Incinerator						
Pumps	Daily, when operated	Leak, spill, mechanical difficulties, fugitive emission and sign of control.				
Valves	Daily, when operated	Leak, spill, mechanical difficulties, fugitive emission and sign of tampering				
Pipes	Daily, when operated	Leak, spill, fugitive emission and sign of tampering.				
Venturi scrubber	Daily, when operated	Leak, spill, fugitive emission and sign of tampering.				
Ash gate	Daily, when operated	Leak, spill, fugitive emission and sign of tampering.				

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Waste Feed Cut-off and alarm (Continued)						
Venturi Scrubber Water Flow Low TEST PROCEDURE NO. 5	Same as above	Set FSL-518 at approximately 30 gpm	Inactivate solid and liquid waste feeders, auxiliary burner, ID fan and open emergency stack			
Venturi Scrubber Pressure Drop TEST PROCEDURE NO. 6	Same as above	DPT-511 0-100" WC Set at 32" or 52" WC	Inactivate solid and liquid waste feeders			
Venturi Scrubber Flow Rate TEST PROCEDURE NO. 3	Same as above	FIT-516 0-100 gpm				

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Waste feed cut-off alarm (Continued)						
Combustion air fan kiln/ Secondary lows Pressure TEST PROCEDURE NO. 2	Prior to starting an incineration campaign, then monthly while in operation	Set PSL-201A (operational setting: 4" W.C.).	Inactivate auxiliary and waste liquid burners 1, 2, or 3 via the safety flame.			
Fuel pressure high/low TEST PROCEDURE NO. 2	Same as above	Burner 1, PSL-201B; PSH-201 Burner 2, PSL-301; PSH-301 Burner 3, PSL-351; PSH-351 (operational set point: check 10psi to 80psi)	Inactivate auxiliary and waste liquid burners 1, 2, and 3 via the safety flame.			
Emergency shutdown IPB TEST PROCEDURE NO. 9	Same as above	Push	Inactivate solid and liquid waste feeders and auxiliary burners.			

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Waste feed cut-off and alarm High temperature TEST PROCEDURE NO. 1	Prior to starting an incineration campaign, then monthly while not in operation	Primary chamber: TSH-200 : 1850°F TSHH-207: 1900°F Secondary Chamber: TSHH-331: 2400°F	Shuts off ram & screw feeders. Shuts off burner no. 1 Shuts off burner no. 2 or 3.			
Low temperature TEST PROCEDURE NO. 1	Same as above	Primary chamber: TSL-200 : 1250°F Secondary chamber: TSL-300 : 2000°F	Inactivate waste solvent & solid waste feeders burner until set point is exceeded.			
Primary chamber draft positive TEST PROCEDURE NO. 2	Same as above	PSH-209 0.05 W.C.	Inactivate solid and liquid waste feeders and auxiliary burners			
Scrubber Temperature High TEST PROCEDURE NO. 1	Same as above	TSH-513: 185°F TSH-512: 210°F	Alarm inactivate solid and liquid waste feeders auxiliary burners, ID fan and open emergency stack			

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Venturi scrubber make-up water flow rate	Same as above	FI-515-0-100 gpm	Alarm			
Kiln rotation stops TEST PROCEDURE NO.9	Same as above	N/A	Alarm.			
ID fan low air flow	Same as above	FSL 601 1"W.C.	Inactivate the auxiliary burners			
High carbon monixide level in stack gas TEST PROCEDURE NO. 4	Same as above	Set UL-711 to 100 ppm and 500 ppm	Inactivate solid and liquid waste feeders			

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Waste feed cut-off and alarm (Continued)						
Low oxygen waste level in flue gas TEST PROCEDURE NO. 4	Same as above	11% (V/V)	Inactive solid and liquid feeders			
Burner flameout TEST PROCEDURE NO. 9	Same as above	N/A	Alarm.			
Ram Malfunction TEST PROCEDURE NO. 9	Same as above	N/A	Alarm.			
Low PH in Scrubber TEST PROCEDURE NO. 7	Same as above	Set AIC-514 at 1.5	Inactivate solid and liquid waste feeders			

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Waste feed cut-off and alarm (Continued)						
Burner fuel flow TEST PROCEDURE NO. 8	Same as above	0-60 GPH Burner #1-FE-701 Burner #2-FE-702 Burner #3-FE-703				
Packed Tower Recirculation water flow rate TEST PROCEDURE NO. 3	Same as above	FIT-517 0-100 gpm set at 50 gpm	Inactivate solid and liquid waste feeders			
Packed tower Conductivity Meter	Same as above	AT-516 0-200,000 u S/cm				
Burner fuel pressure gauges	Same as above	Burner #1-PI-201A; 0-0 psig Burner #2-PI-301A; 0-0 psig Burner #3-PI-351A; 0-30 psig				
Rotary Kiln chamber pressure gauge TEST PROCEDURE NO. 6	Same as above	PT-209 0-5" WC				

HAZARDOUS
INSPECTION LOG SHEET
ORGANIC SYNTHESIS (Continued)

Inspector's Name: _____ Title: _____

Date of Inspection: _____ Time of Inspection: _____
month/day/year military time

TEST FOR	FREQUENCY	SETTING	NORMAL CONDITIONS	REPAIR OR REMEDIAL ACTION RESULTS	Date	Nature
Waste Solvent tank feed cut-off	Same as above	90% Full	High Alarm			
Caustic Soda tank feed cut-off	Same as above	90% Full	High Alarm			

INCINERATOR
TEST PROCEDURE
NO. 1

Equipment Used: Millivolt Power Supply
Table of Millivolt Equivalents for Thermocouples
Types K, R, T
Small Screwdriver
Ohmmeter

1. Disconnect thermocouple wires from the connection head terminal and connect in its place the millivolt power supply. (For 1-5 volts input card connect a voltage supply).

2. From the table of millivolt/voltage equivalents, obtain the MV/V value for the set temperature/pH.

3. Connect ohmmeter to electric switch terminal to verify contact operation. Electric switch contact must close at set temperature/pH. Adjust as necessary.

INCINERATOR
TEST PROCEDURE
NO. 2

Equipment Used: Pneumatic Pressure Calibrator
Small Screwdriver
Ohmmeter

1. Disconnect electrical wires from pressure switch.

2. Remove pressure switch from line.

3. Connect a pneumatic pressure calibrator to input of pressure switch.

4. Simulate a pressure signal to the switch equivalent to set pressure.

5. Connect ohmmeter to electric switch terminal to verify contact operation. Electric switch contact must close at set pressure. Adjust as necessary.

INCINERATOR
TEST PROCEDURE
NO. 3

Equipment Used: Milliamps Power Source
Small Screwdriver
Ohmmeter

1. Disconnect input signal wire of flowmeter.

2. Connect a milliamps (4-20 mA) power source to input terminals of flow meter.

3. Simulate a current signal to the switch equivalent to set flow or manually activate flow sensor.

4. Connect ohmmeter to electric switch terminal to verify contact operation. Electric switch contact must close at set flow. Adjust as necessary.

INCINERATOR
TEST PROCEDURE
NO. 4

Follow calibration procedure specified in the Model 9100 Flue Gas Analyzer instruction manual.

TEST PROCEDURE
NO. 5

Equipment Used: Ohmmeter

1. Disconnect wires from flow switch and connect ohmmeter to electric switch terminal to verify contact operation.

2. Start pump and recirculate proper flow.

3. Electric switch contact must close when flow is present. Adjust as necessary.

INCINERATOR
TEST PROCEDURE
NO. 6

Follow calibration instruction Foxboro MI020-330 and set electronic relay to proper setting.

TEST PROCEDURE
NO. 7

Follow calibration instruction Foxboro MI 611-155 and set electronic relay to proper setting.

TEST PROCEDURE
NO. 8

Follow calibration instruction Brooks (S) X-40 OWM/40 OWMI. Use the factory calibrated flow sensor with a known flow as the input frequency range generator.

INCINERATOR
TEST PROCEDURE
NO. 9

Equipment Used: Ohmmeter

1. Activate electric contact (push button, relay, etc.)

2. With the ohmmeter, check for contact open or closure as per electric schematic.

ATTACHMENT C

CONTENT:

- Personnel Training Plan

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

G. PERSONNEL TRAINING

The information contained in this section outlines the personnel training program for PPI's hazardous waste storage and treatment facilities. The purpose of the program is to train employees on these specific facility operations and potential hazards associated with these operations.

1. Job Title and Duties

Figure G-1 shows the organization of personnel who are involved with the management and handling of hazardous wastes. Only six people are directly involved with actual handling of hazardous wastes; the Environmental Engineer, Process Manager, Supervisor and three operators. Management responsibilities for compliance with RCRA regulations are divided between the Environmental Engineer, Technical Services Manager and the Plant Manager. While maintenance personnel (i.e., electrical and mechanics) work in the waste storage and treatment areas, they do not handle hazardous wastes.

The duties, responsibilities and qualifications of those positions which handle hazardous waste are discussed below.

Environmental Engineer

Position responsibilities and duties are described in the following paragraph.

As Emergency Coordinator:

- Trains plant personnel in the proper waste handling procedures;
- Responsible for all air, water and solid waste control systems on the site;
- Obtains required local, Commonwealth and Federal permits;
- Resolve problems involving permits and licenses;

- Reports to Technical Services Manager;

- Regularly inspects plant facilities for status of air, water and solid/hazardous waste emissions;

- Drafts and submits to Plant Manager all reports required by EPA or the state;

- Consults with Process Engineer on questions involving emergency action.

Experience and Qualifications:

- B.S. degree in chemical engineering

- Five years experience in industrial pollution control management

Process Manager

Position responsibilities and duties are described in the following paragraph.

- Composes production summaries on all campaigns.

- Prepares technical reports for project proposals or implementation evaluations.

- Identifies process problems and deviations through continual evaluation of yield, quality, and productivity data.

- Reviews research data on new processes and implements scale-up to production level. May suggest alternative procedures or modifications.

- Responsible that Plant Operators follow the hazardous waste management procedures described in the RCRA permit application.

- Proposes improvements in equipment required for his/her processes.

- Utilizes technical and equipment additions and may participate with the Engineering Department in this preparation.

- Follows up on delivery of raw materials.

- Schedules process operations.

- Functions as Company representative at meetings, seminars, and during plant visits by professional societies.

- Promotes morale in the area by personal contact and advises the Organic Synthesis Department Manager regarding problems.

- Proposes necessary repair and replacement of the equipment of his/her processes.

- Participates in the evaluations of departmental personnel for promotions.

- Advises the Organic Synthesis Department Manager on questions of policy.

- Develops Process Supervisors.

- Issues and updates equipment cleaning instructions.

- Maintains required production records.

- Assures that processes are done following the departmental procedures. As a minimum, he/she keeps operations in compliance with the PMD Bulk Chemical Manufacturing Guidelines.

- Assesses process and equipment operations for safety hazards.

- Issues operating procedures and makes direct contact with chemical operators to minimize hazards of exposure.

- Monitors processes to reduce or eliminate environmental exposure.

- Prepares and delivers instructional programs at department safety meetings.

- Is responsible for the development and implementation of a safety program to guarantee zero lost time accidents.

- Prepares and updates detailed process operating procedures.

- Solves problems utilizing technical knowledge, experience and common sense.

- Determines causes of equipment failures and proposes preventive maintenance where practical.

- Proposes root cause solutions to process problems.

- Studies processes to improve yields and increase productivities to lower costs.

- Accept and originates projects in the PPI's CIP program and proposes original ideas for projects.

- Participates in the budget cycle by preparing the process utilization factors.

- Prepares monthly forecast and manages to meet the forecast.

- Prepares utilization factors for the quarterly forecasts.

Experience and Qualifications:

- B.S. degree in Chemical Engineering

- Five years experience

<u>Operations Supervisor</u>

Position responsibilities and duties are described in the following paragraph.

- Supervises overall operation and maintenance of the hazardous storage facility.

- Maintains facility compliance with RCRA and other permits.

- Oversees Operators and reviews their performance.

- Trains Operators to operate materials/drum handling equipment; safely and effectively handle leaks, spills and emergency situations.

- Maintains operating log, monitoring records, maintenance records, personnel training records and all other required records.

- Notifies Emergency Coordinator in emergency situations.

- Schedules all maintenance and repairs to structure and equipment.

- Oversees mechanics/electricians doing both scheduled and unscheduled maintenance and repair work.

- Reports to Process Manager.

- Notifies Supervisor and other plant authorities as necessary in emergency situations.

- Takes emergency action on his/her own authority in accordance with established procedures.

Experience and Qualifications:

- Associate Degree

- Five years experience in plant operation and safety

<u>Operators</u>

Position responsibilities and duties are described in the following paragraph.

- Report to Operations Supervisor.

- Operate waste handling equipment.

- Review all incoming wastes and assign wastes to proper storage location.

- Inspect tanks, drums and other storage equipment, and any guages, dials and recorders as required for proper operation and structural integrity.

- Inspect drum storage area for evidence of leaks and spills.

- Inspect emergency equipment on a regular basis.

- Assist in training of new Operators and mechanics to handle hazardous waste spills and leaks safely and in such a way to avoid exposure.

- Make appropriate entries into operating log, monitoring, inspection and maintenance records, and files them according to established system.

- Notify Supervisor and other plant authorities as necessary in emergency situations.

- Take emergency action on his/her own authority in accordance with established procedures.

Experience and Qualifications

- High School Diploma

- Two years experience as plant operator with related activities

2. Training Content, Frequency and Techniques

The program developed at Pfizer Pharmaceuticals, Inc. to train employees in the safe handling of hazardous wastes is documented in a training manual. The training manual is kept at the facility by the Environmental Engineer. Provisions have been made to update or revise the text as necessary to ensure compliance with

RCRA amendments and the requirements of OSHA 1910.120. The training techniques include lectures, slide presentations, and question and answer sessions. The content of the training program will be the same for all of the attendees. The length of training will vary with the job classification. For example the Emergency Coordinators will receive extensive training on the contingency plan, while the Operator's training will emphasize waste handling and inspection procedures. In Appendix H, the facility procedure for training of personnel involved in Hazardous Waste Operations is provided. Tables A and B of the procedure, identify the subject and level of training received by each employee directly involved in hazardous waste management, with respect to their responsibility.

An outline of the training manual is also provided in Appendix H. The employees are instructed in the following areas:

1. The hazardous nature of chemicals and chemical wastes in general;

2. The purpose of RCRA and importance of maintaining compliance with RCRA regulations;

3. The hazardous nature of the wastes being stored in the facility;

4. Proper handling and storage procedures for wastes; and

5. The emergency procedures and contingency plan.

The training manual is used as the framework for training Pfizer's personnel in the proper procedures and equipment to be used to manage hazardous wastes.

The training program has been designed to ensure that personnel who handle or manage hazardous wastes are able to respond effectively to emergencies including:

- Procedure for locating, using, inspecting, repairing and replacing facility emergency and monitoring equipment;

- Key parameters for automatic waste feed cut-off system; and

- Emergency communication procedures and alarm systems.

3. Training Director

The name of the training director is Environmental Engineer Ramon Marrero. He has a B.S. and Masters degree in Chemical Engineering and over eight years of experience working in the area of industrial pollution control. He took the course, The Resource Conservation & Recovery Act presented by Federal Publications, Inc. for the University of San Francisco on June 23, 1981. He also took the course Principles & Practice in Waste Incineration sponsored by the Vanderbilt University in June 1984. He is certified by the American Association of Environmental Engineering in Hazardous Waste Management.

4. The training program has been designed to ensure that personnel who handle or manage hazardous wastes are able to respond effectively to emergencies including:

- Response to fire or explosions;

- Response to ground water contamination incidents and procedures for containing, controlling and mitigating spills; and

- Shutdown of operations and power failure procedures.

The training program is designed to meet actual job tasks. Mr. Marrero, the Training Director, is responsible for PPI compliance with RCRA regulations. He has prepared major sections of this permit application; he is familiar with the day to day activities of the Operators, Supervisor, and Process Manager. The training program has been designed to cover the hazardous waste management practices that PPI conducts.

5. Implementation of Training Program

The Environmental Engineer and all current waste handling personnel have been trained at the time of this submittal. Employees are required to meet annually for review and update of this training program and to discuss and receive instructions in the following subjects:

- All hazardous wastes currently being handled at the facility, noting any changes in waste type, volume, source, characteristics or location that have occurred during the past year.

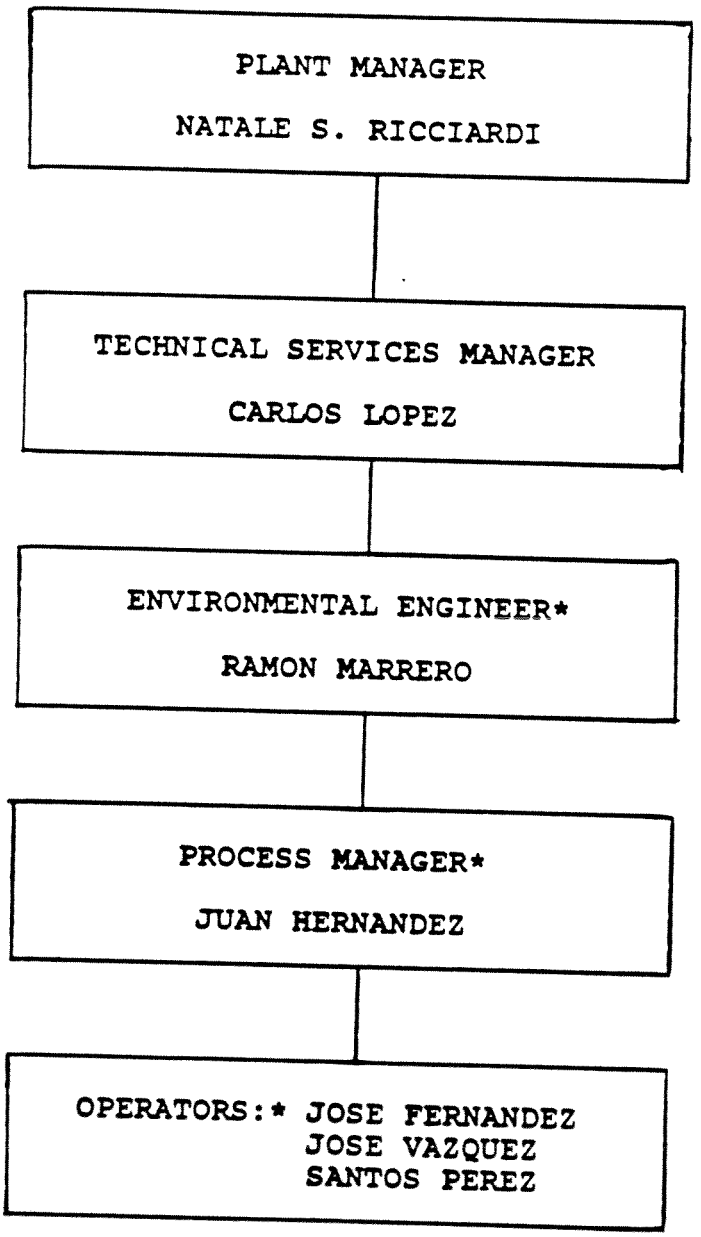
- Discussion of operating conditions and procedures, noting any areas where there are problems or potential for problems. Employees participate in developing effective solutions.

Training will be successfully completed by personnel who are assigned hazardous waste handling or management responsibilites within six months of assignment. These employees will not work in unsupervised positions until they have successfully completed the training program.

All records documenting that the required training has been given to and completed by facility personnel (both introductory and review) must be maintained at the facility. This document must be kept until closure of the facility for current employees, and for three years from the date the employee last worked at the facility. Training records are kept on file with the Environmental Engineer.

FIGURE G-1

ORGANIZATIONAL CHART OF PFIZER PHARMACEUTICALS, INC.



*Indicates the personnel directly involved with hazardous waste activity

APPENDIX H

PPI TRAINING MANUAL OUTLINE

PREFACE

A. Introduction

1. Chemical Hazards
2. The Resource Conservation and Recovery Act - RCRA

B. Facility and Process Description

1. Description of Waste to be Managed
2. Description of Storage Facility
3. Key Terms of the Permit
4. Normal Routine Operations
5. Waste Analysis
6. Recordkeeping and Reporting Requirements
7. Security
8. Inspections

C. Emergency Procedure and Contingency Plan

1. Emergency Coordinator
2. Emergency Procedures
3. Emergency Communications/Phone Numbers and Alarms
4. Location, Maintenance, Inspection and Use of Emergency Equipment
5. Procedures for Waste Feed Cut-Off Systems
6. Spill Control and Response to Ground Water Contamination Incident
7. Fires and Explosions
8. Power Interruption or Failure
9. Hurricanes and Severe Storms

APPENDIX A

Summary of RCRA Regulations for Hazardous Waste Storage Facilities

APPENDIX B

Summary of Specific Conditions of Pfizer's RCRA Permit

APPENDIX H

PPI PROCEDURE TS-036

Training of Personnel Involved in Hazardous Waste Operations

SUBJECT

TRAINING OF PERSONNEL INVOLVED IN HAZARDOUS WASTE OPERATIONS

PURPOSE: The objectives of this procedure are:

a. to ensure that workers assigned to hazardous waste operations have the knowledge and skills necessary to perform the work with minimal risk to their health and safety.

b. to ensure that employees are able to respond effectively to an emergency situation.

c. to ensure compliance with training requirements established by OSHA, EPA, EQB and PROSHO for hazardous waste operations.

SCOPE: This procedure applies to both staff and non-staff, regular and temporary, employees assigned to or responsible for the treatment, storage and disposal of hazardous wastes.

RESPONSIBILITIES:

The Environmental Engineers are responsible for the implementation and auditing of this procedure. It is also their responsibility to provide resources and training aids.

It is the responsibility of the Department Manager (or his designee) in charge of the area were hazardous wastes are handled to coordinate training sessions and to seek compliance with this procedure requirements.

Staff employees are responsible for participating in training sessions, attain high levels of comprehension about their responsibilities, and identify training needs for non-staff employees.

Non-staff employees are responsible for participating in training sessions and attain high levels of comprehension about the material presented to them.

It is the responsibility of the Human Resources Department Manager (or his designee) to maintain and preserve records of training for three years after employment termination.

CONTENTS

1.0 STAFF EMPLOYEE TRAINING REQUIREMENTS
2.0 NON-STAFF EMPLOYEE TRAINING REQUIREMENTS
3.0 TRAINING METHODS
4.0 TRAINING PROGRAM CONTENT
5.0 RECORD OF TRAINING
ATTACHMENTS

1.0 STAFF EMPLOYEE TRAINING REQUIREMENTS

1.1 Prior to be assigned to the area, temporary and regular staff employees will receive the same training as the non-staff employees.

1.2 Additional training in the areas of responsibility, in order to enhance their ability to provide guidance and make decisions, will be provided as soon as available but no later than six months from the date of assignment. Employees will receive not less than 16 hours of additional training.

1.3 Staff employees will be retrained on an annual basis.

2.0 NON-STAFF EMPLOYEE TRAINING REQUIREMENTS

2.1 Prior to be assigned to the area, temporary and regular non-staff employees will be trained in their individual jobs and responsibilities. They will be also provided of an overview of the area hazards and the means of controlling those hazards.

2.2 Non-staff employees will be trained on an annual basis on relevant matters to their position.

3.0 TRAINING METHODS

3.1 The level and content of training provided will be consistent with the worker's job function and responsibilities. Intended training level by job category is presented in Table A.

3.2 Training program will involve classroom instruction with drills in the field that simulate site activities and onsite experience under the direct supervision of trained, experienced personnel.

TABLE A. LEVEL OF TRAINING FOR PERSONNEL INVOLVE IN HAZARDOUS WASTE ACTIVITIES

POSITION	LEGAL & REG REQUIREMENTS	HAZ COMM/ OCC HEALTH	SAFETY	OPERATING PROCEDURES	EMERGENCY RESPONSE
Technical Services Manager	I	L	L	L	L
Process Engineer	I	I	I	I	I
Environmental Engineer	I	I	I	I	I
Emergency Coordinator	L	I	I	L	I
Supervisor	I	I	I	I	I
Operator	L	L	I	I	L

I - Intensive Instruction

L - Limited Instruction

3.3 All employees will receive a minimum of 24 hours of initial training before job assignment and 8 hours of annual refresher training. Written examination may be administered to new employees in order to evaluate comprehension and proficiency attained during training. Further training and employee follow-up will be set based on the tests scores, if administered, and job performance observations. Format and content of written examination is similar to the one presented in Attachment 1.

3.4 The Environmental Engineer, with the aid and advice of the safety-related staff members, will revise and update training materials annually in order to ensure compliance with changes in regulations.

3.5 Whenever a change is made in the operating procedures or equipment, employees will be trained by the supervisor in the areas of change to ensure they understand it.

3.6 Instructors will be acknowledged experts in the field of training or a highly qualified person. To be considered an acknowledge expert or a highly qualified person, the instructor must have a level of education and/or experience in the topic of training beyond that required for the employees under training.

4.0 TRAINING PROGRAM CONTENT

4.1 Initial training content and duration will be as indicated in Table B.

4.2 Refresher training content and duration will be as follows:

TABLE B. INITIAL TRAINING PROGRAM

TRAINING TOPIC/ PROGRAM	EMPHASIS OF TRAINING	DURATION (HRS)	RELATED PROCEDURES
Legal & Regulatory Aspects	Applicable provisions of 40CFR264-265; OSHA and FDA-GMP requirements	1	
Hazard Communication/ Occupational Health	Hazards of chemicals, handling of hazardous materials, programs and procedures for the control of these hazards	3	-Hazard Communication (TS-010) -Chemicals In The Workplace (TS-012) -Safety Manual, Section I.A, Respiratory Protection
Safety	Applicable plant safety programs, stress recognition, first aid	4	-Safety Manual, the following sections: I, Personal Protection Equipment II.A, Hygiene II.C, Occupational Safety Signs II.D, First Aid and Medical Services II.E, Hearing Conservation VII.B, Fork-lift Operation VII.C, Training of Fork-lift Operators XV, Electrical/Mechanical Safety Interlocks XVII, Static Electricity
Operating Procedures	Operating procedures, common problems, facility and process description, Part B Permit requirements	4	-Metal Drums Cleaning (TS-005) -Solid Waste Disposal (TS-007) -Manifest System for Haz Was (TS-015) -Sampling of Hazardous Waste (TS-018) -Analysis of Hazardous Wastes to Be Incinerated (TS-020) -Storage of Industrial Wastes in the Incinerator Storage Area (TS-021) -Use Oil Handling (TS-027) -Inspection Procedures
	Hands-on practice	8(minimum)	
Emergency Response	Emergency procedures, use of emergency response and personal protection equipment	4	-Notification of Hazardous Substances Incidents (TS-003) -Plant Emergency and Contingency Plan (TS-016) -Weekend Emergency Coverage (TS-017) -Procedure for Using, Inspecting, Repairing and Replacement of Facility Emergency and Monitoring Equipment* -Key Parameters for Automatic Waste Feed Cut-Off Systems* -Shutdown of Operation* -Response to Groundwater Contamination Incidents -Safety Manual, Section IV, Fire Protection and Alarm System

* These procedures are part of the Inspection Procedures

TRAINING TOPIC/ PROGRAM	EMPHASIS OF TRAINING	DURATION (HRS)
Legal & regulatory aspects	New regulatory requirements since last training session; enhance knowledge of regulations.	1
Hazard Communication	Industrial hygiene; any changes in waste type or characteristics.	1
Safety	Hearing conservation, use of respirators and safe practices.	3
Operating procedures	Common operating problems, equipment maintenance.	1
Emergency response	Use of emergency equipment and emergency response procedures. Discussion of past incidents, if any.	2

5.0 RECORD OF TRAINING

5.1 Trainings will be documented by the instructor and copy will be maintained in each employee's personal file. Original of training records will be sent to Technical Services files.

5.2 A form similar to the one presented in Attachment 2 will be used for internal training documentation. Off-plant trainings will be documented following Human Resources procedures.

5.3 Records of training (both, internal and off-plant) will be maintained and preserved for 3 years after employment termination.

ATTACHMENTS

CONSERVACION Y REUSO DE RECURSOS (RCRA)

EXAMEN

1. Describa el ciclo de vida de los desperdicios peligrosos en PPI.

2. Indique el tiempo total que puede permanecer un desperdicio peligroso en un area de acumulacion o almacenamiento temporero:

   a. 9 dias b. 90 horas
   c. 1 ano d. 90 dias

3. Describa la forma en que debe estar rotulado un recipiente de desperdicios peligrosos.

4. Describa la importancia de analizar un desperdicio peligroso.

5. Explique la importancia de utilizar el equipo de seguridad al manejar los desperdicios.

6. Mencione algunos requisitos para manejar desperdicios incompatibles.

7. Describa la manera en que se debe manejar un desperdicio flamable.

8. Indique el uso del manifiesto y su importancia.

9. Describa la forma en que se deben manejar las cenizas de incineracion de un desperdicio peligroso.

10. Mencione la importancia de obtener una muestra representativa de un desperdicio peligroso. Describa metodos utilizados para tomar las mismas.

11. Explique cuales son los parametros de monitoria en un incinerador.

12. Indique los dos tipos de inspeccion que se le hacen a un incinerador.

13. De una breve descripcion de nuestro plan de contingencia.

14. Mencione las cuatro caracteristicas de peligrosidad y de algunos ejemplos.

05-20-89

TRAINING DOCUMENTATION FORM

DATE: _____

TRAINING AREA:
__ Legal & regulatory aspects
__ Safety
__ Hazard Communication
__ Operating procedures
__ Emergency Response

TRAINING TECHNIQUES:
__ Classroom
__ Drills
__ On the Job training

TRAINING DURATION: _____

INSTRUCTOR: _____

SUBJECT: _____

DESCRIPTION OF TRAINING:

_____

_____

_____

ATTENDANCE

NAME	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

ATTACHMENT 3
TRAINING RESOURCES

I. TRAINING MATERIALS

a. BNA. Liquid Hazardous Waste. Video: 25 minutes. Spanish.

b. Pfizer Hazard Communication Program. Core I- Introduction and Overview. Slide show: 10 mns. Spanish.

c. Pfizer Hazard Communication Program. Core II- Principles of Chemical Safety. Slide show: 10 mns. Spanish.

d. Pfizer Hazard Communication Program. Core III- Chemical Safety in Action. Slide show: 10 mns. Spanish.

e. Tel-A-Train. Chemical Safety I: Proper Handling. Video: 20 mns. Spanish.

f. Tel-A-Train. Chemical Safety II: Health Hazards. Video: 20 mns. Spanish.

g. Tel-A-Train. Chemical Safety III: Fire and Explosion. Video: 20 mns. Spanish.

h. Pfizer Pharmaceuticals RCRA Training Manual. Handbook. English.

II. REFERENCES

a. Code of Federal Register, Codes 29 and 40.

b. Macmillan Publishing, Cralley & Cralley, Industrial Hygiene Aspects of Plant Operations.

c. Steel Shipping Container Institute, Responsible Container Management.

d. UPR-Mayaguez Campus, R Marrero, Incineration for the Treatment of Solid and Liquid Pharmaceutical Wastes.

e. USDHHS, PHS, CDC, NIOSH/OSHA/USCG/EPA Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities.

f. USDOT, USCG, 1988 Hazardous Materials Response Course.

g. USEPA Office of Emergency and Remedial Response, Personnel Protection and Safety.

h. USEPA Office of Emergency and Remedial Response, Direct Reading Instruments for Air Surveillance.

i. Pfizer Pharmaceuticals Inc. Part B Permit Application, June 1986.

j. USEPA-Region II, Guidance Manual for Hazardous Waste Tanks.

k. USEPA, Guidance Manual for Hazardous Waste Incinerator Permit.

l. USEPA, SW-846, Test Methods for Evaluating Solid Wastes.

ATTACHMENT D

CONTENT:

- Contingency Plan

- Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

F. CONTINGENCY PLAN

1. General Information

This section describes the procedures to be followed in case of a fire, explosion and/or hazardous waste release.

This contingency plan is for the Pfizer Pharmaceuticals, Inc. (PPI) plant located at Km. 58.2, Route 2 in Barceloneta, Puerto Rico 00617. PPI manufactures pharmaceutical products. Mr. Natale S. Ricciardi is the General Manager and the primary Emergency Coordinator. He may be reached at (809) 846-4300 from 8:00 a.m. to 4:30 p.m. on weekdays. Mr. Ramon Marrero is the principal Environmental Engineer at PPI and may also be reached at (809) 846-4300 from 8:00 a.m. to 4:30 p.m. on weekdays.

A site plan which shows the location of hazardous waste storage and treatment facilities is presented as Figure F-1. PPI's hazardous wastes include: filter cakes that contain activated carbon and flammable and toxic solvents; process liquors that also contain flammable or toxic solvents; and certain off-specs commercial products (primarily solvents). Further description of the hazardous wastes and the hazardous waste management facilities is presented in Sections C and D of the Part B permit application.

2. Emergency Coordinators

If an emergency develops at the facility, the discoverer will follow the PPI emergency procedures TS-016 and TS-017, which are included in Attachment 1. As part of these procedures an Emergency Coordinator listed in Table F-1 will be contacted. Mr. Natale Ricciardi, the primary Emergency Coordinator, should be contacted first and if he is not available, then the other Emergency Coordinators should be called in the order listed until someone is reached.

TABLE F-1

EMERGENCY COORDINATORS

NAME	TITLE	ADDRESS	TELEPHONE	HOME PHONE
Natale S. Ricciardi	General Manager Primary Emergency Coordinator	Cond. Playa Grande Apt. 8E Taft No. 1 Santurce, P.R. 00911	(809) 846-4300 Ext. 223	(809) 728-590
Ramon Marrero	Environmental Engineer	Calle 2 D-3 Alturas de San Souci Bayamon, P.R. 00619	(809) 846-4300	(809) 797-481
Jose Rodriguez	Engineering Manager	Urb. Brasilia 6th St. A-19 Vega Baja, P.R. 00763	(809) 846-4300	(809) 858-278
Juan J. Soltero	Safety	158 Federico Degatau Arecibo, P.R. 00612	(809) 846-4300	(809) 878-032

FIGURE F-1

SITE PLAN

The Emergency Coordinators are thoroughly familiar with this plan and have complete authority to commit all resources of the plant in the event of an emergency. Table F-2 list organizations that can be called upon by the Emergency Coordinator for assistance depending upon the nature of the emergency.

3. Implementation of the Contingency Plan

The decision to formally implement the Contingency Plan including the reporting requirement depends upon whether or not an incident could, or has threatened, human health or the environment. The Emergency Coordinator is responsible for deciding whether or not to implement the Contingency Plan. The Contingency Plan will be implemented in the following situations:

a. Fire and/or Explosion

1. A fire or explosion that releases any hazardous waste or hazardous waste constituent, including toxic volatile substances.

2. A fire or explosion that threatens human health.

b. Spills or Material Release

1. A release of a toxic volatile substance that could threaten human health or the environment.

2. A spill that is contained on-site that may eventually impact the offsite environment.

3. A spill that is not contained on-site resulting in off-site soil contamination and/or ground or surface water pollution.

4. Emergency Response Procedures

a. Notification

In the event of an emergency situation, the discoverer will report an emergency to the

TABLE F-2

EMERGENCY CONTACTS

Emergency	Organization/Agency	Emergency No.
Injury	Arecibo Hospital	(809) 878-7272
	Police Department	(809) 343-2020
	Rio Piedras Medical Center	(809) 754-3535
Fire/Explosion	Arecibo Fire Department	(809) 878-2330
	State Fire Department	(809) 343-2330
Hazardous Material Spill or Release	Chemtrec (24hrs)	(800) 424-9300
	National Response Center	(800) 424-8802
	Environmental Protection Agency	(201) 548-8730
	Environmental Quality Board	(809) 725-7864
	OSHA	(809) 725-5140
		(809) 754-2173
Spill Clean Up	Crowley Environmental	(809) 722-1111
	Safety Kleen Service Co	(809) 788-0905
	Clear Ambient Services Co.	(809) 788-0678
	Eastern Chemical	(703) 321-3237
	Waste System	(202) 289-5490
	IT Technology	(809) 754-5500
		(213) 378-9933

Emergency Coordinator through the telephone, fire alarm system or emergency phone (#333). During nights and weekends, the emergency will be reported to the Shift Guard who in turn notifies the weekend Emergency Coordinator or the Primary Emergency Coordinator.

The Emergency Coordinator is responsible for notification of appropriate facility personnel through the plant communication equipment or fire alarm. The Emergency Coordinator is also responsible for notification of federal, commonwealth and local authorities as required in accordance with Figure F-2.

b. Identification of Hazardous Wastes

Upon notification of the incident, the Emergency Coordinator will immediately inspect the site to identify the character, source, the amount, and extent of any release, fire or explosion. The initial identification will be based upon visual analysis considering factors such as the location of the release, the tank or container from which the release occurred. If for some reason the released material cannot be identified, samples will be taken for chemical analysis in accordance with the procedures described in Section C.

c. Assessment

The Emergency Coordinator will assess possible hazards, both direct and indirect to human health or the environment. PPI Procedure TS-003 entitled Response to Hazardous Chemical Incident will assist the Emergency Coordinator in assessing the emergency and notifying proper authorities. This procedure is included in Attachment 2. If his assessment indicates that evacuation of nearby companies or residences may be advisable, or if human health or the environment is threatened then he must immediately notify local authorities including EQB, fire and police departments. If local authorities are notified, the Emergency Coordinator will be available to help the appropriate officials determine whether local areas are to be evacuated.

FIGURE F-2

EMERGENCY NOTIFICATION PROCEDURES

d. Control Procedure

Emergency procedures for fires, explosions and hazardous wastes releases are summarized in Figure F-2 and described in more detail in the following section.

1. Fire and/or Explosion

The following action will be taken whenever there is a fire or an explosion.

The person who discovers the fire or explosion must before anything else is done, actuate a fire alarm. Fire alarms are located throughout the plant (see Figure F-3).

With the sounding of an alarm, the Emergency Coordinator, members of the plant emergency brigade, the security guards and other plant personnel know that there may be a fire and the approximate location. Hearing the alarm the responsibilities of each group are as follows:

- Members of the plant emergency brigade report to the scene to determine the cause of the alarm. If there is a fire, the security guard is notified to summon the local fire department, the Emergency Coordinator, and the plant personnel that there is a fire.

- The Emergency Coordinator reports to the scene of the fire to direct the efforts of the emergency brigade and to evaluate the emergency. The Emergency Coordinator may instruct the security guard to evacuate the plant.

- Upon hearing the alarm, plant personnel are aware that there may be a fire and assess what has to be done to shutdown the process. Necessary steps will follow in order to reduce/prevent further problems such as stopping operations, collecting/containing released wastes, removing or isolating containers, and monitoring the conditions of processes/equipments during shutdown. The order to evacuate the plant will be announced

FIGURE F-3

EMERGENCY EQUIPMENT LOCATION

over the paging system. If the order is given, employees will shutdown all processes, leave their work stations and report to a rally point in the visitors parking lot (See Figure F-4).

- The person who discovers the fire would only attempt to fight the fire if he or she been trained or if the fire is small enough to be controlled with an appropriate fire extinguisher.

- Supervisors will account for the personnel that they are responsible for at the rally point and will notify the emergency brigade if anyone is missing.

- Contractors and visitors will be directed to the rally point by the PPI employee responsible for the contractor or visitor.

- The local fire department will assume the responsibility to fight the fire when they arrive on the scene.

- The Emergency Coordinator is responsible to monitor the production equipment during the emergency for potentially hazardous conditions such as runaway temperature, pressure buildup, gas generation, pipe ruptures, valve failures, and leaks.

- A signal will be given when the fire has been extinguished and the safety of personnel is no longer endangered. All emergency equipment used in the emergency must be cleaned and fit for use prior to resumption of plant operations in the affected areas.

- The emergency is recorded in a report, thoroughly analyzed to determine the cause and means to prevent a reoccurance. Investigations and operational changes will be conducted as needed to prevent a reoccurance.

FIGURE F-4

RALLY POINT DURING EVACUATION

2. Spill or Material Release from Processes, Tanks, Drums, and Containment Areas

For every hazardous chemical spill from processes, tanks, drums, and containment areas, the following general procedures will be followed:

- The employee who discovers a hazardous chemical spill or process upset resulting in a toxic vapor release will immediately report the event to the Emergency Coordinator, or during nights and weekends to the Shift Guard. The Shift Guard in turn notifies the Emergency Coordinator.

- When contacted the designated Emergency Coordinator will report to the scene to obtain the following information:

  a. The material spilled or released;

  b. Location and source of the release or spill of hazardous material;

  c. An estimate of quantity released and the rate at which it is being released;

  d. The direction in which the spill or vapor released is heading;

  e. Whether or not there are injuries; and

  f. The possibility of a fire and/or explosion.

- The Emergency Coordinator will assess the magnitude and potential seriousness of the spill or release. The PPI Procedure TS-003, Attachment 2, assists the Emergency Coordinator in evaluating the release. If containment and cleanup is within the PPI's emergency response capabilities, then the Emergency Coordinator will deploy the emergency brigade. The spill will be appropriately cleaned.

- If cleanup of the spill is beyond the plant's capabilities, the Emergency Coordinator will contact an emergency cleanup contractor using the list in Table F-2. The initial response to any emergency will be to protect human health and the

environment. Identification, containment, treatment and disposal will be the secondary response. If the spill or release threatens public health or the environment then the Emergency Coordinator must notify immediately the National Response Center and the appropriate local authorities, as shown in Figure F-2.

- The emergency brigade will proceed in the following manner.

    1. Make sure that all unnecessary personnel leave the hazard area, and isolate the area by cordoning or barricading the area.

    2. Put on protective clothing and equipment, as specified by the Emergency Coordinator.

    3. If a flammable waste is involved, remove all ignition sources, and use spark and explosion proof equipment during containment and cleanup. Table F-3 lists the Emergency Equipment that may be used to resolve an accident.

    4. Use absorbent bags, earth, sandbags or other inert materials to contain a spill if it has not been contained by a dike or sump.

    5. Once contained, use a portable pump or absorbents to transfer liquids, or shovels to transfer solids to 55 gallon drums.

    6. Place all clean-up and containment materials in drums for proper disposal.

    7. Arrange and complete all necessary repairs, such as to tanks, processes, and containment areas.

- Immediately after an emergency, the Emergency Coordinator will arrange for storage, treatment, and disposal of recovered wastes, contaminated soil, surface water or any other material. The Emergency Coordinator will ensure that any

TABLE F 3
SPILL CONTROL AND ENVIRONMENTAL EQUIPMENT

ITEM and PHYSICAL DESCRIPTION	CAPABILITIES	LOCATION	STOCK NO.
Spill Control			
1) Disposal Bags, opaque, yellow	For hazardous materials and spill control pillows	O.S. incinerator	N/A
2) Sign, 24"H x 10 3/4"W polyethylene	"Danger Chemical Spill Keep Away"	O.S. incinerator	N/A
3) Viton Gloves, Size 11	Solvent handling	O.S. incinerator	N/A
4) Solidification Kit, absorbent granular material	Solidify organic and inorganic waste	O.S. incinerator	N/A
5) Dam kit, booms 4"W x 4'L	To isolate a drum spill	O.S. incinerator	N/A
6) Response Kit, drum with assorted equipment	For hazardous material, liquid spill cleanup and disposal	O.S. incinerator	N/A
Safety Equipment			
1) OSHA Response suit	Hazardous waste cleanup	Stockroom	30500
2) Norton Viton Gloves, size 11	Hand protection	Stockroom	30501
3) Safe Absorbent	Cleanup	Stockroom	95552
4) Chemical absorbent pillows for spill cleanup	Cleanup	Stockroom	95554
5) Bags for absorbent pillows, opaque yellow	Storage	Stockroom	95555
6) Open head drum, DOT 17H, steel 55 gallon, 12 gauge	Storage	Stockroom	30502
7) Close head drum, DOT 17E, steel 55 gallon 12 gauge	Storage	Stockroom	30503
8) Hand pump (E1166-3) stainless/teflon 22" x 9/16" Dia.	Transfer of Liquid	Stockroom	30504
9) Salvage drum to contain damaged leaky container, 16, DOT 17C	Contain	Stockroom	30550
10) Sorbent rolls for oil spill in water, 150'L x 3'W x 3/8" D	Absorption	Stockroom	30553

TABLE F 3 (continued)
SPILL CONTROL AND ENVIRONMENTAL EQUIPMENT

ITEM and PHYSICAL DESCRIPTION	CAPABILITIES	LOCATION	STOCK NO.
Safety Equipment (cont.)			
11) Sorbent pillows for oil spill in water in space, 25"L x 18" W x 5" H	Recovery	Stockroom	30554
12) Sorbent booms for oil spill containment and absorption in ditches, streams and basins; sausage shaped 8" diameter x 10'L	Containment	Stockroom	30555
Leak Detection			
1) Flourescent tablet for detecting leaks	Detects leaks	Stockroom	95779
2) Ditto but liquid red	Detects leaks	Stockroom	95780
Waste Water Sampling			
1) Nicad Battery	Sampling	Stockroom	95540
2) AC Power converter battery	Sampling	Stockroom	95541
3) Vinyl Suction line (1'4" ID x 22') with weighted polyproylene body	Sampling	Stockroom	95542
4) Bulk vinyl tubing suction line (1/4" ID)	Sampling	Stockroom	95543
5) Teflon Suction Line (3/8" x 20')	Sampling	Stockroom	95544
6) Weighted strainer (3/8" ss)	Sampling	Stockroom	95545
7) 5 gals. polyethylene container	Sampling	Stockroom	95547
8) Pump tubing	Sampling	Stockroom	95548
9) pH strip	Sampling	Stockroom	95549
10) Polyethylene bottles for sanitary sampling	Sampling	Stockroom	95550
11) Normal speed assembly	Sampling	Stockroom	95556
12) Humidity indicator cap	Sampling	Stockroom	95558
13) Dessicant	Sampling	Stockroom	95559
14) Porous dessicant container	Sampling	Stockroom	95560
15) Power pack line cord assembly	Sampling	Stockroom	95561
16) Label for sampling identification	Sampling	Stockroom	50019

TABLE F-3 (continued)
SPILL CONTROL AND ENVIRONMENTAL EQUIPMENT

	ITEM and PHYSICAL DESCRIPTION	CAPABILITIES	LOCATION	STOCK NO.
	Spark/Explosion Proof Equipment			
1)	Grounding cables	Dissipates sparks	O.S incinerator and various plant locations	N/A
2)	Explosion proof flashlights	Lighting	O.S incinerator and various plant locations	N/A
3)	Gas detectors	Monitor gases	O.S area and Human Resources Dept.	N/A
4)	Spark Proof Tools	Avoids sparks	O.S incinerator	N/A
	Decontamination Equipment			
1)	Safety eyewash and shower station stationary shower and eye/face sink	Shower heads 30 gpm and 30 psig flow	O.S incinerator and various plant locations	N/A
2)	Water/Steam high pressure spray gun, portable	Delivers hot water	Building 105 Drum cleaning area	N/A
	Containers for Hazardous Waste Sampling			
1)	Four pack 32 ounce glass bottles with outer PVC coating, teflon lined caps and DOT approved corrugated shipping carton for solid waste	Sampling	Stockroom	30551
2)	Polyfoam pack and (1 gallon) safety coated narrow mouth bottle with polyseal cap for liquid waste	Sampling	Stockroom	30552
3)	Safety Coated 32 ounce glass bottle (narrow mouth) for liquid wastes	Sampling	Stockroom	30556
4)	Screw cap, teflon seal for item 3	Sampling	Stockroom	30557

TABLE F-3 (continued)
SPILL CONTROL AND ENVIRONMENTAL EQUIPMENT

	ITEM and PHYSICAL DESCRIPTION	CAPABILITIES	LOCATION	STOCK NO.
	Containers for Hazardous Waste Sampling (Cont.)			
5)	Container with teflon lined closure attached, cleaned to EPA specifications and quality control analyzed			
	a. 4 liter amber glass bottle(Spec.245-4000)	Sampling	Stockroom	30558
	b. 1 liter wide mouth clean jar (Spec. 321-1000)	Sampling	Stockroom	30559
	c. 1 liter clear glass bottle (Spec. 329-1000)	Sampling	Stockroom	30560
	d. 125 ml. clear glass bottle (Spec. 329-0125)	Sampling	Stockroom	30561
	DOT Standard Labels			
1)	Flammable liquid	Appropriate Hazard Warning	Stockroom	30543
2)	Corrosive liquid	Appropriate Hazard Warning	Stockroom	30544
3)	Poisonous Liquid	Appropriate Hazard Warning	Stockroom	30543
4)	PCB	Appropriate Hazard Warning	Stockroom	30506
5)	Solvent (different)	Appropriate Hazard Warning	Stockroom	305007-30540
6)	Hazardous Waste	Appropriate Hazard Warning	Stockroom	30541
7)	DOT label assortment	Appropriate Hazard Warning	Stockroom	30547
	DOT Standard Signs			
1)	"No Smoking"	Appropriate warning	Stockroom	30545
2)	"Danger Flammable"	Appropriate warning	Stockroom	30546
	Educational Aides			
1)	Toxic and Hazardous Chemicals Wall Chart, 25" x38"	Listing of chemicals	O.S.	30548
2)	Safe Storage of Chemicals, 22" x 28"	Identifies safe storage	O.S.	30549

TABLE F-3 (continued)
SPILL CONTROL AND ENVIRONMENTAL EQUIPMENT

	ITEM and PHYSICAL DESCRIPTION	CAPABILITIES	LOCATION	STOCK NO.
	Air Sampling Filter Media			
1)	Charcoal ST-226-01	Gas Monitoring	Stockroom	30624
2)	Tenax ST-266-35-02	Gas Monitoring	Stockroom	30625
3)	Silica Gel ST-226-10-06	Gas Monitoring	Stockroom	30626
4)	Glass Midget Bubbler GIS-400	Gas Monitoring	Stockroom	30618
5)	Silica Gel ST-226-51	Gas Monitoring	Stockroom	30628
6)	Cellulose- Ester Filter FTL-225-5	Gas Monitoring	Stockroom	30629
7)	Teflon Filter FTL-225-17-01	Gas Monitoring	Stockroom	30630
8)	Silica Gel ST-226-10	Gas Monitoring	Stockroom	30627
9)	Polyvinyl Chloride FTL-225-8	Gas Monitoring	Stockroom	30631
10)	Silica Gel ST-226-10-03	Gas Monitoring	Stockroom	30633
	Note: Sampling pump and calibrator are available at Technical Services			
	Air Sampling Package			
1)	Sample Tube Mailer 226-01-001	Container	Stockroom	30621
	Air Sampling Filter Accessories			
1)	Filter accessories 225-2	Gas Monitoring	Stockroom	30622
2)	Cassette holder 225-1	Gas Monitoring	Stockroom	30623
3)	Cassette holder with cyclone for respirable dust determination 225-1-01 (SKC)	Gas Monitoring	Stockroom	30632
	Air Sampling Tube Holder Assessories			
1)	Single variable flow controller tube holder, THO-V-202	Holder	Stockroom	30615
2)	Dual variable flow controller tube holder, THM-DVO-200	Holder	Stockroom	30616
3)	Standard tube holder, THH-S-222	Holder	Stockroom	30619
4)	Standard tube ends, THE-S-200	Tubes	Stockroom	30620

TABLE F-3 (continued)
SPILL CONTROL AND ENVIRONMENTAL EQUIPMENT

ITEM and PHYSICAL DESCRIPTION	CAPABILITIES	LOCATION	STOCK NO.
Communications Equipment			
1) Paging system	Internal Communications	Guard house & Plant	N/A
2) Two-way walkie talkie, battery powered	Internal & External Communications	Plant	N/A
3) Telephone-Electrical	Internal & External Communications	Plant	N/A

TABLE F-4

TABLE OF INCOMPATIBLE MATERIALS

A. Storage of Wastes or Chemical Substances

1. Flammable Solids - Do not store with:
   a. explosives
   b. gases or poisonous liquids
   c. corrosive materials
2. Oxidizers and Organic Peroxides - Do not store with:
   a. Gases or poisonous liquids
   b. Corrosive materials
   c. Liquids or flammable gases
3. Corrosives - Do not store with:
   a. Flammable solids
   b. Poisonous gases
   c. Oxidizers and organic peroxides
4. Flammable liquids - Do not store with:
   a. Liquids or poisonous gases
   b. Oxidizing agents and organic peroxides
5. Flammable gases - Do not store with:
   a. Liquids or poisonous gases
   b. Oxidizing agents and peroxides
6. Gases or Poisonous Liquids - Do not store with:
   a. Oxidizing agents and organic peroxides
   b. Explosives
   c. Liquids and flammable solids

Potential Consequences from the Mixture of Incompatible Materials

In the following lists, the mixture of the materials in Group A with the materials in Group B could have the following potential consequences:

Potential consequences: heat generation, violent reaction

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaners	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte acid
Caustic Wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential consequences: fire or explosion, generation of flammable gas (hydrogen)

Group 2-A	Group 2-B
Aluminum	Any waste in Group 1-A or 1-B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metallic hydrides	

otential consequences: fire, explosion or heat generation, generation of lammable or toxic gases

Group 3-A	Group 3-B
Alcohols Water	Any concentrated waste in Groups 1-A or 1-B Calcium Lithium Metallic hydrides Potassium SO_2Cl_2, $COCL_2$, PCL_3, CH_3SiCL_3

otential consequences: fire, explosion or violent reaction

Group 4-A	Group 4-B
Alcohols Aldehydes Halogenated hydrocarbons Nitrated hydrocarbons Unsaturated hydrocarbons Other reactive organic compounds and solvents	Concentrated Group 1-A or Group 1-B wastes Group 2-A wastes

otential consequences: generation of the toxic gas hydrogen cyanide or hydrogen sulfide

Group 5-A

Spent cyanide and sulfide solutions

Group 5-B

Group 1-B

otential consequences: fire, explosion or violent reaction

Group 6-A

Chlorates
Chlorines
Chlorites
Chromic acid
Hyphochlorites
Nitrates
Nitric acid fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

Group 6-B

Acetic acid and others
Organic acids
Concentrated mineral acids
Group 2-A wastes
Group 4-A wastes
Other flammable wastes and combustibles

incompatible wastes will be segregated in accordance with Table F-4.

e. Post-Emergency Equipment Maintenance

- The emergency equipment must be cleaned so that it is fit for use or replaced and then inspected before operations are resumed in the affected area. The Regional Administrator and EQB must be notified prior to resuming operations in the affected area that post-emergency equipment maintenance has been performed and operations will be resumed.

5. Emergency Equipment

The location of emergency response equipment is shown on Figure F-3 and listed in Table F-3. The plant employs several mechanisms for fire control. Fire hydrants are located throughout the plant area. Hydrants are capable of delivering 500 gpm of water. The existing hydrant locations are shown on Figures F-3 and F-4. Water volume and pressure required for firefighting is evaluated and approved by the insurance company for the facility. Water is supplied by 2-500,000 gallon storage tanks.

Portable fire extinguishers are also located in each of the following areas:

- Incinerator Area
- Organic Synthesis Area
- Warehouse
- Electric Substation
- Laboratories
- Offices

These fire extinguishers are dry chemical types (A, B and C). Type A is capable of extinguishing fires involving ordinary combustible materials such as wood, cloth, paper, rubber and many plastics. Type B is capable of extinguishing fires involving flammable liquids, oils, grease, tars, oil base paints, lacquers and flammable gases. Type C is capable of extinguishing fires involving energized electrical equipment. All extinguishers comply with the National Fire Code standards for portable fire extinguishers.

The extinguishers are inspected after each use and monthly. Record of these inspections are kept in the operation log.

Most equipment for use in containing and cleaning spilled hazardous wastes is stored in the stockroom. Equipment and materials stored and maintained in the stockroom along with Emergency Equipment stored in other areas of the facility are listed in Table F-3. The location and function of the various pieces of Emergency Equipment are provided in Table F-3. First aid supplies are stored at the infirmary and first aid station.

An emergency eyewash fountain and shower is located at the West end of the waste storage tank area and in the first floor of the incinerator. The unit consists of a drench shower-head with panic bar and an eyewash with a dirt cover and panic bar. A sign reading "EMERGENCY SHOWER AND EYEWASH FOUNTAIN" is posted at each unit. A hose station is also located near the eyewash/shower station.

6. Personnel Protection Equipment

Protective clothing and equipment is provided to protect employees during normal and emergency operations. Hard hats, protective eyewear and steel-toed boots or shoes are the minimum protective clothing required. Other protective clothing equipment available on site include:

Clothing

- Tyvek disposable coveralls.
- Viton and natural rubber boots.
- Viton, PVC and natural rubber gloves.
- PVC - natural rubber acid resistant suits.
- OSHA response suit - saronex coated tyvek.

Equipment

- Face shields and extra protective eyeglasses.
- Air masks
- Self-contained breathing apparatus (SCBA) operated in pressure-demand mode.

The Guidelines for the Selection of Chemical Protection Clothing, Second Edition, published by the American Conference of Governmental Industrial Hygrieists Inc. were reviewed to determine personnel equipment requirements. The guidelines' compatibility table was extracted for the hazardous wastes generated at PPI. This information is presented in Table F-5. The personal protection equipment that PPI has on site meets the guideline requirements.

TABLE F-5
PERSONNEL EQUIPMENT REQUIREMENTS

Chemical Substance	Suitable Protection Clothing *	** Suitable Equipment
Acetone	Butyl	C.S/S.S/Teflon
Chloroform	Viton	S.S./Teflon/C.S
Ethanol	Neoprene/Nitrile	C.S./S.S./Teflon
Ethyl Acetate	Butyl	Teflon/S.S./C.S.
Hexane	Viton	C.S./S.S./Teflon
Heptane	Viton	C.S./S.S./Teflon
Isopropyl Alcohol	PVC/Viton	S.S./Teflon/C.S.
Methylene Chloride	Viton	S.S./C.S./Teflon
Methanol	Polyethylene	S.S./C.S./Teflon
Toluene	Viton	C.S./S.S./Teflon
Phenol	Viton	S.S./Teflon/Brmze
Caustic Soda (50%)	NR/Neoprene	Polypropolene/PVC/
HCL (30%)	Viton/Nitrile	Teflon

* Source: Guidelines for the Selection of Chemical Protection Clothing Second Edition

** Source: American Conference of Governmental Industrial Hygienists, Inc. Chapter 7, Pages 29 - 75.

7. Agreements with Emergency Response Contractors

Pfizer Pharmaceutical, Inc., has agreements with Crowley Environmental Inc., Safety Kleen Service Co., Clear Ambient Services Co., Eastern Chemical, Waste System, and IT Technology for emergency response to respond on an as needed basis in emergency situations. Copies of written agreements are provided in Attachment 3.

8. Distribution of Contingency Plan

Copies of the Contingency Plan are submitted to the local police and fire departments, hospitals and emergency response personnel presented in Table F-6. The plan familiarizes these groups with PPI's emergency response procedures and the types of materials that can be encountered.

Coordination agreements for emergency services have been made with the local fire and police departments, hospitals, as well as state and local emergency response teams. Copies of written agreements are provided in Attachment 3.

9. Evacuation Plan

The facility employs a fire alarm system with a specific signal to initiate an emergency evacuation of all plant areas. In addition to the alarm, the paging system is used to notify emergency brigade and plant personnel as to the nature of the emergency and recommended plan of action.

Plant evacuation is initiated by an Emergency Coordinator. Evacuation may be signaled for not only a fire, explosion or release, but also a bomb threat, hurricane or other natural disaster.

In the event plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

a. The signal for plant evacuation will be activated.

b. The guards will immediately open the gate for rapid exit of personnel. No further entry of

TABLE F-6

CONTACT PERSONS - EMERGENCY RESPONSE

CONTACT/PERSON	ORGANIZATION	ADDRESS	PHONE
Teudero Muniz	Arecibo Regional Hospital	Call Box 1500 Arecibo, PR 00613 P.O. Box 596 Arecibo, PR 00613	878-7272
Felipe Aponte	Arecibo Police Department	Apartado 1535 Arecibo, PR 00612	878-2020
Nestor Ortiz	Arecibo Fire Department	Luis Munoz Rivera 1 Barceloneta, PR 00617	878-2330
Edwin Torres	Barceloneta Fire Department	Luis Munoz Rivera 1 Barceloneta, PR 00617	846-2330
John Comulada	Crowley Environmental	P.O. Box S-1072 San Juan, PR 00902	722-1111
Pedro Gelabert	USEPA	Ave Fdz Juncos 1413 Santurce, PR 00909	725-7864
Santos Rohena	EQB	P.O. Box 11488 Santurce, PR 00910	725-5140
Gustavo Roman	OSHA	Ave Rotarios 372 Arecibo, PR 00612	878-2292
Laura Torres de Morales	Rio Piedras Medical Center	Admin. de Services Medicos - Apt. C-M Caparra High Station San Juan, PR 00935	754-3759
Carlos Luzado Padilla	Barceloneta Police Department	P.O. Box 193846-2020 Barceloneta, PR 00617	

visitors, contractors or trucks will be permitted. All vehicular traffic within the plant will cease in order to allow the safe exit of personnel and movement of emergency equipment.

c. All personnel, visitors and contractors will immediately go to the rally point in the visitors parking lot as shown on Figure F-4. All employees will be accounted for by their immediate supervisors. Contract personnel will also be accounted for and would report to the rally point.

d. Upon completion of the employee accounting, the supervisor in charge will notify the results to the Emergency Coordinator. All other personnel will remain at the gate area.

e. No persons shall remain or re-enter the location unless specifically authorized by the person or persons calling for the evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter. Those within the fenced area will normally only include fire brigade personnel or emergency teams.

f. The names of emergency team members involved in emergency response will be reported to the front gate.

g. Re-entry into the plant area will be made only after clearance is given by the Emergency Coordinator. At his direction, a signal or other notification will be given for re-entry into the plant.

10. Required Reports

As required, any emergency event (e.g., fire, explosion, etc.) that requires implementing the Contingency Plan will be reported in writing within 15 days after the incident to the EPA Regional Administrator and EQB. A reporting form for emergency events is shown in Figure F-5.

11. Amendments to the Contingency Plan

The Contingency Plan will be reviewed and immediately amended, if necessary, whenever:

1. The facility permit is revised;

2. The plan fails in an emergency;

3. The facility changes in its design, construction, operation, maintenance or other circumstances in a way that materially increases the potential for fires, explosions or releases of hazardous waste or hazardous waste constituents or changes in the response necessary in any emergency;

4. The list of Emergency Coordinators changes; and/or

5. The list of emergency equipment changes.

FIGURE F-5

REPORTING FORM

FOR

EMERGENCY EVENTS

REPORTING FORM FOR EMERGENCY EVENTS

Name, Address and Phone Number of Owner or Operation

Name, Address and Phone Number of Facility

Date, time and type of incident (e.g., fire, explosion, etc.)

Exteht of Injuries (if any)

Assessment of actual or potential hazards to human health or the environment (if applicable)

Identification and Estimated Quantity of Material(s) Involved in the Incident

Estimated quantity and disposition of material recovered from the incident

Send to:

U.S. EPA, Region II
Regional Administrator (EPA)
26 Federal Plaza
New York, NY 10278

Environmental Quality Board
P. O. Box 11488
Santurce, Puerto Rico 00910

CONTINGENCY PLAN
ATTACHMENT 1

PPI PROCEDURE TS-016
PLANT EMERGENCY AND CONTINGENCY PLAN

AND

PPI PROCEDURE TS-017
WEEKEND EMERGENCY COVERAGE

PFIZER PHARMACEUTICALS, INC.
DEPARTMENTAL PROCEDURE

ISSUED BY
TECHNICAL SERVICES

NO. TS-016
EFFECTIVE 2/15/88
PAGE 1 OF 7

ERSEDES
9/24/87

SUBJECT
PLANT EMERGENCY AND CONTINGENCY PLAN

PURPOSE:

The purpose of this procedure is to describe the measures and actions to be taken during a plant emergency and outlines the plant emergency response organization.

SCOPE:

This procedure is applicable to emergencies such as: natural disasters, social disturbances, accidents, loss of utilities, or other unplanned, sudden or non-sudden releases of hazardous materials or hazardous waste. It provides specific responsibilities during emergencies to Emergency Coordinator and Department Managers or designated substitutes.

RESPONSIBILITIES:

1. It is the responsibility of the Emergency Coordinator (Plant Manager or designee) to carry out the provisions of this procedure immediately whenever an emergency is determined. The Plant Manager will coordinate all external communications, including Headquarters notification.

2. It is the responsibility of the employees, visitors or contractors to report an emergency to the Emergency Coordinator through personal communication, fire alarm system, or emergency phone (#333).

3. It is the responsibility of the Emergency Coordinator and Human Resources Manager to establish a command post at the Plant Manager's office and coordinate actions.

4. It is the responsibility of the Engineering Manager, Technical Services Manager, Safety Manager and Manager of Area affected (the site inspectors group) to:

   4.1 Identify the character, exact source, amount and area affected by the emergency.

N.S. Ricciardi

4.2 Assess possible hazards, both direct and indirect to human health or the environment.

4.3 Inform to Emergency Coordinator for action to be taken.

5. It is the Production Managers' responsibility to assure that their areas are secure and under control whenever an emergency occurs.

6. It is the PPIC Manager's responsibility to assure that Warehouses are secure and under control.

7. It is the Controller's responsibility to prepare the Administration Conference Room for meetings, the press or government agencies visits should the potential arise.

8. It is the Systems Manager's responsibility to document major events during an emergency. This information will be used for the final report and for self-evaluation when emergency has ended.

9. It is the responsibility of each Department Manager through the Human Resources Manager to direct visitors or contractors away from PPI's premises as directed by the Emergency Coordinator.

10. If the emergency happens during afternoon or night shift, the senior manager and/or Organic Synthesis Supervisor has the responsibility of carrying out the provisions of this procedure and to act as the Emergency Coordinator after consulting with the Emergency Coordinator or alternate until senior management arrives at the site. The guardhouse will be the communication center.

11. If the emergency occurs during the weekend, the Shift Guard is responsible for immediately notifying the emergency situation to the weekend Emergency Coordinator or to one of the alternate members listed as Emergency Coordinators and carry out the emergency duties that are authorized in the Weekend Emergency Procedures Binder.

EMERGENCY RESPONSE PLAN:

1. Whenever there is an imminent or actual emergency during normal working hours, the Emergency Coordinator through the site inspectors group shall immediately:

   1.1 Identify the character, exact source, amount and area affected by the emergency.

   1.2 Assess possible hazards, both direct and indirect to human health or the environment.

2. If the fire alarm is not activated when there is an emergency, the Emergency Coordinator will approve the activation of the fire alarm or use the plant communication equipment to notify plant personnel. Plant personnel will not use radios or public or private telephones for personnel or non-emergency related use.

3. Department Managers will communicate, through phone or walkie talkies, all information related to the emergency. Department Managers will inspect their facilities and inform his employees of action to be taken as directed by the Emergency Coordinator.

4. The nurse and one guard will move the ambulance to the emergency site when requested.

5. The telephone operator will call Manati Regional Area Hospital to get prepared if there are injuries, as instructed by the Emergency Coordinator.

6. The guard on duty will call the Fire Department if fire is detected or when the fire alarm sounds. Fire Department will be given further instructions at the PPI guardhouse.

7. The Public Affairs Manager will control the guardhouse and the access to PPI's premises. He will coordinate the clearance of roadway with the Police Department.

8. The Utilities Manager will verify that fire water system is operational and inform it to Emergency Coordinator. He will shutdown equipment or utilities as emergency requires or as directed by Emergency Coordinator.

9. The site inspectors or the Emergency Coordinator can activate the emergency response teams as the emergency situation requires. All employees will stay in their work areas until communication is received on actions to be followed through Department Managers, Emergency Coordinator, or plant communication equipment

10. If the evacuation of the plant is necessary, all personnel will be evacuated following the plant General Evacuation Procedure; Procedure XX-F.

11. If the Emergency Coordinator needs to notify Headquarters and/or Corporate Safety and Health (Legal Division), he will notify the following facts:

a) Name of the facility and location
b) Type and time of the emergency
c) Name(s) of injured, nature and extent of injury
d) Brief explanation of the incident, extent of damages to Pfizer properties and surrounding community
e) Name and degree of chemical exposure
f) Official government notifications, if any (current or planned)
g) Telephone numbers reserved for emergency communications where he can be reached (command post), generally as outlined below:

EMERGENCY COORDINATOR LIST:

1. Emergency Coordinator

NAME	TITLE	TELEPHONE EXTENSION	TELEPHONE HOME
Natale S. Ricciardi	Plant Manager	223	728-5902

2. Alternate Emergency Coordinators

NAME	TITLE	TELEPHONE EXTENSION	TELEPHONE HOME
Juan Soltero	Safety Manager	330	878-0329
Jose Rodriguez	Plant Engineer	233	858-2786
Carlos Lopez	T.S. Manager	195	763-6356
Louis Prado	O.S. Prod. Mngr.	285	796-2952
Jay Cayado	Pharm.Prod.Mngr.	203	781-4060
Ramon Marrero	Environmental Eng.	234	797-4815
Felipe Sanchez	Environmental Eng.	319	796-2453

COMMUNITY ALERT:

1. If the emergency is beyond the plant's capabilities and could threaten human health, the environment or outside facilities, the Emergency Coordinator will authorize the contact of the appropriate local and state authorities immediately. The Weekend Emergency Procedures grants the guard on duty ~~certain~~ authority to notify outside agencies if management cannot be reached within 5 minutes.

2. The Emergency Coordinator, in consultation with outside officials, will recommend whether adjacent areas should be evacuated.

LOCAL AND STATE EMERGENCY CONTACTS:

1. Injury

Emergency Contact	Telephone
Manati Area Hospital Manati, P.R.	854-3700 Emergency Ext. 265
Doctors Center Hospital Manati, P.R.	854-3322 - Switchboard 854-3286 - Emergency
Rio Piedras Medical Center Poison Control Center	754-3535,754-3545, 754-3515

2. Fire/Explosion

Emergency Contact	Telephone
Barceloneta Fire Dept. Barceloneta, P.R.	846-2330 343-2330 - Emergency
Arecibo Fire Department Arecibo, P.R.	878-2330
State Fire Department	343-2330 723-5776 - Chief 725-2240 - Auxiliary Chief

3. Community Evacuation

Emergency Contact	Telephone
Police Department Barceloneta, P.R.	846-2020
Police Department Arecibo, P.R.	878-2020 878-1319 - Area Chief Commander 878-3060 - District Chief Commander
Police General Headquarters Hato Rey, P.R.	343-2020, 782-0167,781-1234
Civil Defense Barceloneta, P.R.	856-3210, 846-2980
Civil Defense Arecibo, P.R.	878-1030, 879-2360,879-2344 878-3454 - Zone Director
Central Civil Defense San Juan, P.R.	724-0124
Barceloneta Mayor's Office	846-3400 - Switchboard

4. Hazardous Material Spill or Release

Emergency Contact	Telephone
Chemtrek (24 Hrs.)	(800) 424-9300
National Response Center	(800) 424-8802
Environmental Protection Agency	725-7825
Environmental Quality Board	(201) 548-8730
OSHA	725-5140 878-2292

5.

Corporate Safety and Health (Legal Division)	(212) 573-2625 (212) 573-7356
After hours (Brooklyn Security Office)	(718) 780-8800 (718) 780-8456
J.W.Mitchell	(212) 573-2427/2428
C.M. Shafran	(212) 573-7673
L. Turano	(212) 573-7861/7862

SURROUNDING COMPANY CONTACTS:

1. The Emergency Coordinator decides if surrounding companies should be notified to request personnel or equipment aid.

2. The surrounding companies may be notified of the emergency as a contingency measure.

3. Companies Telephone

	Casera Food Co.	846-2340
*	Abbott Laboratories	846-3500
	Winthrop-Sterling	846-2714
*	M.S.D.Q.	846-4100
	Bristol Co.	846-3800
	Viskase	846-2110
	RCR Co.	846-5400
*	UpJohn Mfg. Co.	846-4900
	A.H. Robins Mfg. Co.	846-3750

* CAER Mutual Aid Companies

PUBLIC RELATIONS DURING EMERGENCY:

1. Corporate Safety and Health (Legal Division) must be notified.

2. The Plant Manager or the Human Resources Manager are the only persons authorized to provide official statements to the press or government agencies.

3. Public Relations procedure (TS-023) should be used as a guide during an emergency.

PFIZER PHARMACEUTICALS, INC.
DEPARTMENTAL PROCEDURE

ISSUED BY: TECHNICAL SERVICES

NO. TS-017

EFFECTIVE 3-17-87

PAGE 1 OF 4

PERSEDES 6-10-86

SUBJECT: WEEKEND EMERGENCY COVERAGE

Purpose

This procedure describes weekend plant coverage by staff personnel with the major purpose of being able to respond to weekend emergencies quickly and effectively.

Scope

This procedure applies to any emergency (fires, explosions, spills of hazardous materials, sabatoge, hurricanes, floods, earthquakes, electrical failures, accidents, etc.). It is supplemental to normal notification of Plant Manager and/or Department Manager and is intended to provide for management notification and action in case senior managers cannot be reached.

Responsibilities

It is the responsibility of the Weekend Emergency Coordinator to take appropriate action whenever an emergency is reported.

It is the responsibility of the guards to report an emergency to the Weekend Emergency Coordinator, plant management and to appropriate government agencies.

It is the responsibility of the Safety and Security Manager to instruct the guards on this procedure.

It is the responsibility of Departments to assign staff for weekend coverage.

Contents

1. Coverage Period
2. Weekend Emergency Coordinators
3. Communication System
4. Schedule
5. Emergency Response
6. Plant Master Key
7. Plant's Procedure
8. Procedure Location
9. Weekend Coverage Report

Appendix 1 - Weekend Emergency Coverage Schedule (1987)
Appendix 2 - Department Manager Telephones

1.0 Coverage Period

1.1 Normal weekend coverage is from Friday at 5:00 p.m. through Monday at 6:00 a.m.

1.2 For holidays before and after the weekend, the coverage period starts on the last day of work at 5:00 p.m. and ends the day operations resume at 6:00 a.m.

2.0 Weekend Emergency Coordinators

2.1 All PPI staff members are Weekend Emergency Coordinators rotating according to plant's schedule.

2.2 One staff per weekend is scheduled to act as the Emergency Coordinator.

2.3 The weekend coverage is assigned by Departments on a monthly basis.

3.0 Communication System

3.1 The telephone, beepers or portable radios will be used for communication.

4.0 Schedule

4.1 An annual schedule will be prepared by the Personnel Department. It is the Personnel Department's responsibility to distribute the schedule to the assigned personnel and the shift guards.

4.2 The Department Managers (DM) will assign the staff members that are going to be in charge on the scheduled weekends.

4.3 If the scheduled Emergency Coordinator is going to be outside of Puerto Rico, he/she should notify the Personnel Department well in advance in order to make the necessary schedule changes. It is the departments responsibility to re-assign a new staff for the weekend coverage.

5.0 Emergency Response

5.1 Whenever there is an emergency during the period covered by this procedure, the shift guard is responsible for immediately notifying (by telephone) the Plant Manager (PM) and/or responsible Department Manager and the scheduled Emergency Coordinator of the emergency situation. The Plant Manager will always be informed as per procedure TS-016, Plant Emergency & Contingency Procedure. If the PM and/or DM are available, he will assume the role of the Emergency Coordinator.

5.2 The Emergency Coordinator will communicate the necessary instructions (by telephone) to the shift guards and decide if his/her presence is necessary at the facilities.

5.3 The Emergency Coordinator will at a minimum use the Emergency Procedure TS-016 and;

5.3.1 Identify the character, exact source, amount and area affected by the emergency.

5.3.2 Assess possible hazards, both direct and indirect to human health and environment.

5.3.3 If the emergency is beyond plant's capabilities and can threaten human health or the environment the Emergency Coordinator will contact the appropriate local and state authorities immediately. Procedure TS-016 "Plant Emergency and Contingency Procedure" should be followed whenever an emergency occurs.

5.4 It is the responsibility of the scheduled Emergency Coordinator to test the communication system, especially if he/she is not at home.

5.5 In cases where the guards cannot contact management within (5) minutes and the emergency is serious, they are authorized to contact appropriate government agencies for emergency response, and will continue their efforts to contact management.

6.0 Plant Master Key

6.1 The master key is available in the Safety and Security Manager office in case of an emergency. The guards have access to this office at all times.

7.0 Plant's Procedures

7.1 The following procedure will be followed during an emergency:

7.1.1 Plant Emergency and Contingency Procedure
7.1.2 Response to Hazardous Chemical Incident
7.1.3 Public Relations During an Emergency
7.1.4 Hurricanes
7.1.5 Floods
7.1.6 Accident
7.1.7 Sabatoge
7.1.8 Earthquake
7.1.9 General Evacuation Plan
7.1.10 Fire Protection
7.1.11 Utilities Equipment Shutdown

8.0 Procedure Location

8.1 The Weekend Emergency Procedure Binder is available at the guardhouse.

8.2 A copy is available in the Safety Manager office.

8.3 The scheduled Emergency Coordinator will receive a copy of the Weekend Emergency Procedure Binder from the guardhouse on the day that his/her coverage period begins and will return the binder when the coverage period ends.

9.0 Weekend Coverage Report

9.1 If an emergency occurs, the guards will write a report of the actions taken to notify the emergency.

9.2 If an emergency occurs, the weekend Emergency Coordinator will submit a report to the Plant Manager in the morning of the first working day after the covered period.

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1987 Weekend Emergency Coverage Schedule

Dates	Department Assigned
January	Engineering (10)
1/02 - 1/05/87 (*)	
1/09 - 1/12/87	
1/16 - 1/19/87	
1/23 - 1/26/87	
1/30 - 2/02/87	
February	Finance/Systems (5/5)
2/06 - 2/09/87	
2/13 - 2/16/87	
2/20 - 2/23/87	
2/27 - 2/09/87	
March	Materials (7)
3/06 - 3/09/87	
3/13 - 3/16/87	
3/20 - 3/23/87	
3/27 - 3/30/87	
April	Technical Service/MRP (3/4)
4/03 - 4/06/87	
4/10 - 4/13/87	
4/15 - 4/20/87 (A)	
4/24 - 4/27/87	
May	Personnel (7)
5/01 - 5/04/87	
5/08 - 5/11/87	
5/15 - 5/18/87	
5/22 - 5/26/87 (B)	
5/29 - 6/01/87	
June	Organic Synthesis (12)
6/05 - 6/08/87	
6/12 - 6/15/87	
6/19 - 6/22/87	
6/26 - 6/29/87	

Dates	Department Assigned
July	Organic Synthesis (12)
7/02 - 7/06/87 (C)	
7/10 - 7/13/87	
7/17 - 7/20/87	
7/23 - 7/27/87 (D)	
7/31 - 8/03/87	
August	Production (19)
8/07 - 8/10/87	
8/14 - 8/17/87	
8/21 - 8/24/87	
8/28 - 8/31/87	
September	Production (19)
9/04 - 9/08/87 (E)	
9/11 - 9/14/87	
9/18 - 9/21/87	
9/25 - 9/28/87	
October	Quality Control (11)
10/02 - 10/05/87	
10/09 - 10/12/87	
10/16 - 10/19/87	
10/23 - 10/26/87	
10/30 - 11/02/87	
November	Quality Control (11)
11/06 - 11/09/87	
11/13 - 11/16/87	
11/20 - 11/23/87	
11/25 - 11/30/87 (F)	
December	Engineering (10)
12/04 - 12/07/87	
12/11 - 12/14/87	
12/18 - 12/21/87 (*)	
12/25 - 12/28/87 (*)	

(A) Good Friday
(B) Memorial Day
(C) Independence Day
(*) Christmas Shutdown

(D) Constitution Day
(E) Labor Day
(F) Thanksgiving

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APPENDIX 2

Department Managers Telephone Numbers

Name	Position	Telephone Number
Francisco Arroyo	Public Relations/Suppliers Manager	763-2617
Sandra Borres	Manufacturing Manager	727-9981
Luciano Cano	Packaging Manager	796-3311
Javier Cayado	Pharmaceutical Prod. Mgr.	781-4060
Félix Cordero	Controller	858-2321
Héctor Corretjer	Personnel Manager	784-8476
Juan Fret	PPIC Manager	758-7194
Tom Kolesar	Q. C. Manager	796-2944
Carlos López	T. S. Manager	763-6356
Rosa Mathews	MRP Manager	898-5034
Cándido Molina	Data Processing Manager	854-4950
Louis Prado	O. S. Production Manager	796-2952
Nat Ricciardi	Plant Manager	728-5902
José A. Rodríguez	Engineering Manager	858-2786

It is the responsibility of all staff to notify Personnel of any changes in telephone numbers and to personally enter his/her new number at the guard's desk emergency binder.

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CONTINGENCY PLAN
ATTACHMENT 2

PPI PROCEDURE TS-003
RESPONSE TO HAZARDOUS CHEMICAL INCIDENT

PFIZER PHARMACEUTICALS, INC.
DEPARTMENTAL PROCEDURE

ISSUED BY: TECHNICAL SERVICES

NO. TS-003

EFFECTIVE 4/29/87

PAGE 1 OF 4

RSEDES 9/5/86

SUBJECT: RESPONSE TO HAZARDOUS CHEMICAL INCIDENT

POLICY

Pfizer Pharmaceuticals Inc. will have a procedure to identify and report the release of a hazardous substance to the environment in accordance with the "Comprehensive Environmental Response, Compensation and Liability Act of 1980" (known as Superfund) and the "Superfund Amendments & Reauthorization Act of 1986" (known as SARA).

SCOPE

This policy covers materials to be reported, quantities, information and persons to whom reports will be sent.

RESPONSIBILITIES

It is the responsibility of the user of the hazardous substance to assure that releases to the environment are identified and reported to the Plant Manager. It s the responsibility of the Environmental Engineer(s) to investigate the incidents nd recommend action to follow. It is the responsibility of the Plant Manager to communicate with government agencies as required.

CONTENTS

1.0 Definitions

2.0 Reportable Substances

3.0 Reporting Procedure

4.0 Investigation

5.0 Government Report

6.0 Procedure Updating

Appendix A - Hazardous Substance List and Reportable Quantities
Superfund and SARA

1.0 Definitions

1.1 "Release"... any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, leaching, escaping, dumping or disposing into the environment...

1.2 "Environment"... surface water, ground water, drinking water supply, land surface or subsurface strata or ambient air.

1.3 "Exposure Outside Boundaries"... refers to any person that is exposed to the released hazardous substance outside PPI's fence line.

1.4 "Superfund Hazardous Substance"... any substance designated as hazardous by EPA under 40 CFR Part 302, for which any release of a reportable quantity to the environment must be reported to the National Response Center.

1.5 "SARA Extremely Hazardous Substance"... any substance designated as hazardous by EPA under 40 CFR Part 300, for which any release of a reportable quantity to the environment that causes exposure outside the facilities boundaries must be reported to the Emergency Planning Committee.

2.0 Reportable Substances

2.1 A reportable release occurs if the substance is on the list of hazardous substances and a reportable quantity has been released to the environment within a 24-hour period.

2.2 Hazardous substances we use in PPI and the reportable quantities are found in Appendix A.

3.0 Reporting Procedure

3.1 The representative of each department upon discovery of release to the environment of any of the substances applicable to his/her department in stated reportable quantities, immediately notifies the Plant Manager and the Environmental Engineer(s).

Environmental Engineers: R. Marrero, Ext. 234, F. Sánchez, Ext. 319
Plant Manager : N. Ricciardi, Ext. 223 - Home Phone: 728-5902

3.2 Inspection System for Detecting any Reportable Release

The representative of each department must inspect his facility for malfunction and deterioration, operator errors and any potential discharge which may cause or may lead to: 1) release of hazardous substances to the environment or 2) a threat to human health due to exposure within and/or outside PPI's boundaries.

4.0 Investigation

4.1 Whenever there is a release, the Environmental Engineers must immediately identify the character, exact source, amount and a real extent of any released materials. He may do this by observation, reviewing facility's record, or if necessary, by chemical analysis. If the release is a mixture containing a hazardous substance, calculate the quantity of the hazardous substance not of the whole solution to determine whether reporting is required.

5.0 Government Report

5.1 The Plant Manager (or his designee) is responsible for all necessary reports to be made. If the Plant Manager is not available, the person in charge bears this responsibility.

5.2 All "Releases" of a reportable quantity of the indicated substances into the "Environment" must be immediately reported in the following manner.

5.2.1 No "Exposure Outside Boundaries"

If a Superfund Hazardous Substance is released and no persons are exposed outside the facility, then a Superfund Report must be made to the Natural Response Center by calling (800) 424-8802.

A Superfund report must include:

A) Name and telephone number of the reporter.
B) Name and address of the facility.
C) Time, duration and type of release.
D) Name and quantity of material(s) involved, to the extent known.
E) Extent of any injuries.
F) Potential hazards to human health or the environment.

5.2.2 "Exposure Outside Boundaries"

If a SARA Extremely Hazardous Substance or a Superfund Hazardous Substance is released and persons are exposed outside the facility, then a SARA Report must be made by calling the local Emergency Planning Committee, the State Emergency Planning Commision and local Fire Department.

A SARA report must include:

A) Name and telephone number of the reporter.
B) Name and address of the facility.
C) Time, duration and type of release.
D) Anticipated acute or chronic health risks and appropriate medical attention if any.
E) Precautions to take (e.g., evacuation, etc.)
F) Name and telephone of any other person(s) to be contacted for further information.

If the substance is a Superfund Hazardous Substance, then a Superfund Report must also be made to the National Response Center as per Section 5.2.1 above.

As soon as practible, a written follow-up "Emergency Notice" must be provided to the Local Emergency Planning Committee. An Emergency Notice must include any additional information with respect to:

A) Actions taken to respond and contain releases.

B) Anticipated acute or chronic health risks and appropriate medical attention if any.

6.0 Procedure Updating

6.1 This procedure shall be updated annually or whenever there is:

A) An addition of a new reportable hazardous substance to the facilities.

B) An existing reportable hazardous substance in the facilities is deleted.

C) A revision of the hazardous substances and reportable quantities list under 40 CFR Part 300 and Part 302.

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CERCLA/SARA HAZARDOUS SUBSTANCES PRESENT AT PPI

THESE ARE THE SUBSTANCES COVERED BY THE EMERGENCY REPORTING REQUIREMENTS DESCRIBED IN TECHNICAL SERVICES PROCEDURE NO TS-003

6/87

ITEM	SUBSTANCE	CAS NO	DEP	USE	ANNUAL USE	UNITS	CERCLA RQ (lbs)	SARA RQ (lbs)
1	1,2-DICHLOROETHANE	107062	QC	L	10	G	5,000	
2	1,4-DIOXANE	123911	QC	L	10	G	1	
3	1-BUTANOL	71363	QC	L	10	G	5,000	
4	1-BUTANOL	71363	MFG	R	12	P	5,000	
5	2-CHLOROETHANOL	107073	QC	L	10	P		1
6	4-AMINOPYRIDINE	504245	QC	L	10	P	1,000	1,000
7	ACETALDEHYDE	75070	QC	L	10	G	1,000	
8	ACETIC ACID	64197	OS	R	13	G	5,000	
9	ACETIC ACID	64197	QC	L	10	P	5,000	
10	ACETIC ANHYDRIDE	108247	QC	L	10	G	5,000	
11	ACETONE	67641	OS	R	13	G	5,000	
12	ACETONE	67641	QC	L	10	G	5,000	
13	ACETONITRILE	75058	QC	L	10	G	5,000	
14	ACROLEIN	107028	QC	L	10	P	1	1
15	ADIPIC ACID	124049	QC	L	10	P	5,000	
16	AMMONIA GAS	7664417	OS	R	12	P	100	100
17	AMMONIUM ACETATE	631618	QC	L	10	P	5,000	
8	AMMONIUM CARBONATE	506876	QC	L	10	P	5,000	
	AMMONIUM CHLORIDE	12125029	QC	L	10	P	5,000	
	AMMONIUM CHLORIDE	12125029	OS	R	12	P	5,000	
21	AMMONIUM CHLORIDE	12125029	OSL	L	10	P	5,000	
22	AMMONIUM CITRATE DIBASIC	3012655	QC	L	10	P	5,000	
23	AMMONIUM HYDROXIDE	1336216	QC	L	10	G	1,000	
24	AMMONIUM OXALATE	6009707	QC	L	10	P	5,000	
25	AMMONIUM SULFAMATE	7773060	QC	L	10	P	5,000	
26	AMMONIUM THIOCYANATE	1762954	QC	L	10	P	5,000	
27	ANILINE	62533	OSL	L	10	P	5,000	5,000
28	ANILINE	62533	QC	L	10	G	5,000	5,000
29	ANTIMONY POTASSIUM TARTRATE	28300745	QC	L	10	P	100	
30	ARSENIC STD	7440382	QC	L	10	P	1	
31	ARSENIC TRIOXIDE	1327533	QC	L	10	P	5,000	5,000
32	ARSENIC TRIOXIDE TARTRATE	1327533	QC	L	10	P	5,000	5,000
33	ASBESTOS	1332214	ENG	S	10	P	1	
34	BROMINE	7726956	QC	L	10	G		1
35	CADMIUM STD	7440439	QC	L	10	P	1	
36	CARBON DISULFIDE	75150	QC	L	10	P	100	100
37	CARBON TETRACHLORIDE	56235	QC	L	10	G	5,000	
38	CHLORINE GAS	7782505	ENG	R	12	P	10	10
39	CHLOROBENZENE	108907	QC	L	10	P	100	
40	CHLOROFORM	67663	OS	R	12	G	5,000	5,000
41	CHLOROFORM	67663	QC	L	11	G	5,000	5,000
42	CHLOROSULFONIC ACID	7790945	OSL	L	10	P	1,000	
3	CHROMIUM TRIOXIDE	308389	QC	L	10	P	1	
44	CUPRIC SULFATE	7758987	OSL	L	10	P	10	
	CUPRIC SULFATE	7758987	QC	L	10	P	10	
46	CYCLOHEXANE	110827	QC	L	10	G	1,000	
47	CYCLOHEXYLAMINE	108918	QC	L	10	P		1
48	DIETHYLAMINE	109897	QC	L	11	G	100	
49	ETHER	60297	QC	L	10	G	100	
50	ETHYL ACETATE	141786	OS	R	13	G	5,000	

CERCLA/SARA HAZARDOUS SUBSTANCES PRESENT AT PPI

THESE ARE THE SUBSTANCES COVERED BY THE EMERGENCY REPORTING REQUIREMENTS DESCRIBED IN TECHNICAL SERVICES PROCEDURE NO TS-003

6/87

ITEM	SUBSTANCE	CAS NO	DEP	USE	ANNUAL USE	UNITS	CERCLA RQ (lbs)	SARA RQ (lbs)
51	ETHYL ACETATE	141786	QC	L	10	G	5,000	
52	ETHYL BENZENE	100414	QC	L	10	G	1,000	
53	ETHYL CHLORIDE	75003	QC	L	10	P	100	
54	FERRIC CHLORIDE	7705080	OSL	L	10	P	1,000	
55	FERRIC NITRATE	10421484	QC	L	10	P	1,000	
56	FERRIC SULFATE	10028225	QC	L	10	P	1,000	
57	FERROUS AMMONIUM SULFATE	10045893	OSL	L	10	P	1,000	
58	FERROUS AMMONIUM SULFATE	10045893	QC	L	10	P	1,000	
59	FERROUS SULFATE	7720787	QC	L	10	P	1,000	
60	FORMALDEHYDE	50000	QC	L	10	G	1,000	1,000
61	FORMIC ACID	64186	QC	L	10	G	5,000	
62	HYDROCHLORIC ACID	7647010	QC	L	10	P	5,000	← ONLY CERCLA REGULATES LIQUID
63	HYDROCHLORIC ACID (L)	7647010	OS	R	13	G	5,000	← " " " "
64	HYDROGEN CHLORIDE GAS	7647010	OS	R	13	P	~~5,000~~ 1	ONLY SARA REGULATES GAS
~~65~~	~~HYDROGEN PEROXIDE~~	~~7722841~~	~~OS~~	~~R~~	~~12~~	~~G~~		~~1~~
~~66~~	~~HYDROGEN PEROXIDE~~	~~7722841~~	~~QC~~	~~L~~	~~10~~	~~P~~		~~1~~ SARA REGULATES ONLY >52% SOLUTIONS; PPI USES 50%.
67	HYDROGEN SULFIDE	7783064	QC	L	10	P	100	100
68	HYDROQUINONE	123319	QC	L	10	P		1
69	LEAD ACETATE	301042	QC	L	10	P	5,000	
	LEAD NITRATE	10099748	QC	L	10	P	100	
	LEAD STD	7439921	QC	L	10	P	1	
72	o-XYLENE	108383	QC	L	10	P	1,000	
73	MALEIC ACID	110167	OSL	L	10	G	5,000	
74	MALEIC ANHYDRIDE	108316	QC	L	10	P	5,000	
75	MERCURIC ACETATE	1600277	QC	L	10	P	1	1
76	MERCURIC CHLORIDE	7487947	QC	L	10	P	1	1
77	MERCURIC SULFATE	7783359	OSL	L	10	P	10	
78	MERCURIC SULFATE	7783359	QC	L	10	P	10	
79	MERCURY	7439976	OSL	L	10	P	1	
80	MERCURY	7439976	QC	L	10	P	1	
81	METHANOL	67561	OS	R	12	G	5,000	
82	METHANOL	67561	QC	L	11	G	5,000	
83	METHYL BROMIDE	74839	ENG	M	12	P	1,000	1,000
84	METHYL ETHYL KETONE	78933	QC	L	10	P	5,000	
85	METHYL IODIDE	74884	OS	R	12	G	1	
86	METHYL ISOBUTYL KETONE	108101	QC	L	10	P	5,000	
87	METHYLENE CHLORIDE	75092	OS	R	12	G	1,000	
88	METHYLENE CHLORIDE	75092	QC	L	10	G	1,000	
89	NAPHTALENE	91203	OSL	L	10	P	100	
90	NICKEL STD	7440020	QC	L	10	P	1	1
91	NITRIC ACID	7697372	QC	L	10	G	1,000	1,000
92	NITROBENZENE	98953	QC	L	10	G	1,000	1,000
93	o-XYLENE	95476	QC	L	10	P	1,000	
	OSMIUM TETROXIDE	20816120	QC	L	10	P	1,000	1,000
	p-XYLENE	106423	QC	L	10	P	1,000	
	PHENOL	108952	OS	R	13	P	1,000	1,000
97	PHENOL	108952	QC	L	10	P	1,000	1,000
98	PHOSPHORIC ACID	7664382	QC	L	10	G	5,000	
99	PHOSPHORUS OXYCHLORIDE	10025873	OS	R	13	P	1,000	1,000
100	PHOSPHORUS PENTOXIDE	1314563	OS	R	13	P		1

CERCLA/SARA HAZARDOUS SUBSTANCES PRESENT AT PPI

THESE ARE THE SUBSTANCES COVERED BY THE EMERGENCY REPORTING REQUIREMENTS DESCRIBED IN TECHNICAL SERVICES PROCEDURE NO TS-003

6/87

ITEM	SUBSTANCE	CAS NO	DEP	USE	ANNUAL USE	UNITS	CERCLA RQ (lbs)	SARA RQ (lbs)
101	PHTHALIC ANHYDRIDE	85449	OSL	L	10	P	5,000	
102	PIPERIDINE	110894	OS	R	11	G		1
103	PIPERIDINE	110894	QC	L	10	G		1
104	PLATINOUS CHLORIDE	10025657	QC	L	10	P		1
105	POLYCHLORINATED BIPHENYLS	1336363	ENG	S	12	P	10	
106	POTASSIUM CHROMATE	7789006	QC	L	10	P	1,000	
107	POTASSIUM CYANIDE	151508	QC	L	10	P	10	10
108	POTASSIUM DICHROMATE	7778509	OSL	L	10	P	1,000	
109	POTASSIUM DICHROMATE	7778509	QC	L	10	P	1,000	
110	POTASSIUM HYDROXIDE	1310583	OS	R	13	P	1,000	
111	POTASSIUM HYDROXIDE	1310583	QC	L	10	P	1,000	
112	POTASSIUM PERMANGANATE	7722647	OSL	L	10	P	100	
113	POTASSIUM PERMANGANATE	7722647	QC	L	10	P	100	
114	PROPIONIC ACID	79094	QC	L	10	P	5,000	
115	PYRIDINE	110861	OSL	L	11	G	1,000	
116	PYRIDINE (IN KARL FISHER)	110861	QC	L	10	G	1,000	
~~117~~	~~RANEY NICKEL~~	~~7440020~~	~~OS~~	~~R~~	~~12~~	~~P~~	~~1~~	~~1~~ — No longer used.
8	RESORCINOL	108463	QC	L	10	P	5,000	
	SELENIUM STD	7782492	QC	L	10	P	100	
	SILVER DIETHYLDITHIOCARBAMATE	1470617	QC	L	10	P	1,000	
121	SILVER NITRATE	7761888	QC	L	10	P	1	
122	SODIUM ARSENITE	7784465	QC	L	10	P	1,000	1,000
123	SODIUM AZIDE	26628228	OSL	L	10	P	1,000	1,000
124	SODIUM BISULFITE	7631905	OSL	L	10	P	5,000	
125	SODIUM CYANIDE	143339	QC	L	10	P	10	10
126	SODIUM FLUORIDE	7681494	QC	L	10	P	1,000	
127	SODIUM HYDROSULFIDE	16721805	QC	L	10	P	5,000	
128	SODIUM HYDROXIDE	1310732	OSL	L	11	G	1,000	
129	SODIUM HYDROXIDE	1310732	QC	L	10	P	1,000	
130	SODIUM HYDROXIDE pellets	1310732	OS	R	12	P	1,000	
131	SODIUM HYDROXIDE soln.	1310732	OS	R	13	G	1,000	
132	SODIUM HYDROXIDE soln.	1310732	ENG	M	12	G	1,000	
133	SODIUM METHOXIDE	124414	OS	R	12	P	1,000	
134	SODIUM METHOXIDE	124414	OSL	L	11	P	1,000	
135	SODIUM METHOXIDE	124414	QC	L	10	C	1,000	
136	SODIUM NITRITE	7632000	OSL	L	10	G	100	
137	SODIUM NITRITE	7632000	QC	L	10	P	100	
138	SODIUM PHOSPHATE DIBASIC	7558794	QC	L	10	P	5,000	
139	SODIUM SACCHARIN	126449	OS	R	12	P	1	
140	SODIUM SACCHARIN	126449	OSL	L	11	P	1	
141	SODIUM SACCHARIN	126449	MFG	R	12	P	1	
142	SODIUM STD	7440235	QC	L	10	P	10	
3	SULFURIC ACID	7664939	OS	R	12	G	1,000	1,000
*4	SULFURIC ACID	7664939	ENG	M	12	G	1,000	1,000
	SULFURIC ACID	7664939	QC	L	10	G	1,000	1,000
146	TETRAHYDROFURAN	109999	OS	R	13	G	1,000	
147	TETRAHYDROFURAN	109999	QC	L	10	G	1,000	
148	TOLUENE	108883	OS	R	13	G	1,000	
149	TOLUENE	108883	QC	L	11	G	1,000	
150	TRICHLOROETHYLENE	79016	OS	M	12	G	1,000	

CERCLA/SARA HAZARDOUS SUBSTANCES PRESENT AT PPI

THESE ARE THE SUBSTANCES COVERED BY THE EMERGENCY REPORTING REQUIREMENTS DESCRIBED IN TECHNICAL SERVICES PROCEDURE NO TS-003

6/87

ITEM	SUBSTANCE	CAS NO	DEP	USE	ANNUAL USE	UNITS	CERCLA RQ (lbs)	SARA RQ (lbs)
151	TRIETHYLAMINE	121448	OS	R	13	G	5,000	
152	TRIETHYLAMINE	121448	QC	L	10	G	5,000	
153	XYLENES	1330207	OS	R	13	G	1,000	
154	ZINC ACETATE	557346	QC	L	10	P	1,000	
155	ZINC METAL	7440666	QC	L	10	P	1,000	
156	ZINC STD	7440666	QC	L	10	P	1,000	
157	ZINC SULFATE	7733020	QC	L	10	P	1,000	

CERCLA/SARA HAZARDOUS SUBSTANCES PRESENT AT PPI

THESE ARE THE SUBSTANCES COVERED BY THE EMERGENCY REPORTING REQUIREMENTS DESCRIBED IN TECHNICAL SERVICES PROCEDURE NO TS-003

6/87

ITEM	SUBSTANCE	CAS NO	DEP	USE	ANNUAL USE	UNITS	CERCLA RQ (lbs)	SARA RQ (lbs)

DEPARTMENT
OS =ORGANIC SYNTHESIS
QC =QUALITY CONTROL
OSL=ORGANIC SYNTHESIS LAB
ENG=ENGINEERING
MFG=MANUFACTURING

USE
L=LAB
P=PROD
M=MAINT
R=RAW
I=INTER
B=BYPROD
S=STORED MATERIAL

ANNUAL USE
14= >500K
13= 10K-500K
12= 101-10K
11= 10-100
10= <10

UNITS
C=CUFT
P=LBS
G=GALS

CONTINGENCY PLAN
ATTACHMENT 3

COORDINATION AGREEMENTS FOR EMERGENCY SERVICES

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Héctor López Feliciano
Policia de Puerto Rico
Cuartel General
P.O. Box 70166
San Juan, P.R. 00936

Estimado Sr. López:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

Por tal razon le estamos proveyendo una revisión de nuestro plan de contingencia el cual describe en detalle nuestras facilidades.

Es necesario que se nos indique que se recibió dicho plan y se han familiarizado con el mismo para proveer ayuda en una emergencia según solicitada por nuestra compañía.

De necesitar información original o tener alguna pregunta, favor de comunicarse con el Sr. Ramón Marrero al teléfono 846-4300 Ext. 234.

Sinceramente,

N. S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Pedro Rivera Lugo
Doctors Center Hospital
P.O. Box 532
Manatí, P.R. 00621

Estimado Sr. Rivera:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N. S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Hiram Pérez
CECOS
P.O. Box 10489
Ponce, P.R. 00732

Estimado Sr. Pérez:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N.S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sra. Ivelisse Estrada
PROTECO
Ave. Hipodromo
Pda. 20 Santurce
Santurce, P.R. 00909

Estimada Sra. Estrada:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N.S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

October 12, 1988

Mr. Carlos A. Colley
Clean Ambient Serv. Co.
P.O. Box 1675
San Juan, P.R. 00936

Dear Mr. Colley:

As agreed by the Federal and State Regulation of Code 40 CFR 264.37, all facilities that handle hazardous wastes should forward a copy of their contingency plan to the different government agencies and private contractors so as to familiarize themselves with the facilities in order to provide assistance in an emergency situation.

For this reason we are providng you with a revised copy of our contingency plan which describes our facilities in detail.

It is necessary that you indicate that this plan has been received and that you have familiarized yourself with it so as to provide assistance in an emergency as requested.

If you need original information or have any questions, please feel free to contact Mr. Ramon Marrero at 846-4300 Ext. 234.

Sincerely,

N.S. Ricciardi

Natale S. Ricciardi
General Manager

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

October 12, 1988

Mr. Steven W. Berry
IT Corp.
G.P.O. Box 3028
San Juan, P.R. 00936

Dear Mr. Berry:

As agreed by the Federal and State Regulation of Code 40 CFR 264.37, all facilities that handle hazardous wastes should forward a copy of their contingency plan to the different government agencies and private contractors so as to familiarize themselves with the facilities in order to provide assistance in an emergency situation.

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Sincerely,

Natale S. Ricciardi
General Manager

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

October 12, 1988

Mr. Daniel Pagan
Safety Clean
P.O. Box 1098
Manati, P.R. 00701

Dear Mr. Pagan:

As agreed by the Federal and State Regulation of Code 40 CFR 264.37, all facilities that handle hazardous wastes should forward a copy of their contingency plan to the different government agencies and private contractors so as to familiarize themselves with the facilities in order to provide assistance in an emergency situation.

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Sincerely,

N. S. Ricciardi

Natale S. Ricciardi
General Manager

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Santos González
Ashland Chemical Co.
P.O. Box 1026
Bayamón, P.R. 00621

Estimado Sr. González:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

October 12, 1988

Mr. Felix Velazquez
Power Engineering
GPO Box 1905
San Juan, P.R. 00936

Dear Mr. Velazquez:

As agreed by the Federal and State Regulation of Code 40 CFR 264.37, all facilities that handle hazardous wastes should forward a copy of their contingency plan to the different government agencies and private contractors so as to familiarize themselves with the facilities in order to provide assistance in an emergency situation.

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Sincerely,

N. S. Ricciardi

Natale S. Ricciardi
General Manager

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Carlos Luzado Padilla
Dept. Policia de Barceloneta
P.O. Box 193
Barceloneta, P.R. 00617

Estimado Sr. Luzado:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N.S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sra. Laura Torres de Morales
Centro Médico de Rio Piedras
Adm. Servicios Médicos
Apt. C-M Caparra Heights Sta.
San Juan, P.R. 00935

Estimada Sra. Torres:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Gustavo Roman
Occupational Safety & Health Adm.
Ave Rotarios 372
Arecibo, P.R. 00612

Estimado Sr. Roman:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

October 12, 1988

Mr. John Comulada
Crowley Environmental
P.O. Box S-1072
San Juan, P.R. 00902

Dear Mr. Comulada:

As agreed by the Federal and State Regulation of Code 40 CFR 264.37, all facilities that handle hazardous wastes should forward a copy of their contingency plan to the different government agencies and private contractors so as to familiarize themselves with the facilities in order to provide assistance in an emergency situation.

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Sincerely,

N.S. Ricciardi

Natale S. Ricciardi
General Manager

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Edwin Torres Cubano
Dept. Bomberos de Barceloneta
Luis Munoz Rivera #1
Barceloneta, P.R. 00617

Estimado Sr. Torres:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N.S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Nestor Ortiz
Dept. Bomberos de Arecibo
Ave. Eugenio M. de Hostos
Arecibo, P.R. 00612

Estimado Sr. Ortiz:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Teudero Muñiz
Hospital Regional de Arecibo
Call Box 1500
Arecibo, P.R. 00613

Estimado Sr. Muñiz:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N.S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

12 de octubre de 1988

Sr. Felipe Aponte
Departamento de Policia de Arecibo
Apartado 1535
Arecibo, P.R. 00612

Estimado Sr. Aponte:

De acuerdo a la Reglamentación Federal y Estatal del Código 40 CFR 264.37, toda facilidad que maneje desperdicios peligrosos debe someter copia de su plan de contingencia donde las distintas agencias del gobierno y contratistas privados se familiarizen con la facilidad para proveerles asistencia en caso de una emergencia.

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Sinceramente,

N. S. Ricciardi

Natale S. Ricciardi
Gerente General

10-01-88

FECHA: 10/14/88

A: Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617
ATTN: Natale S. Ricciardi
Departamento de Administracion

RE: PLAN DE CONTINGENCIA RCRA

Certifico que hemos recibido el Plan de Contingencia revisado de Pfizer Pharmaceuticals Inc. El mismo se nos ha sido enviado en cumplimiento con los requisitos de la reglamentacion federal "Resource Conservation and Recovery Act" (RCRA).

En adicion, certificamos que hemos revisado y nos hemos familiarizado con el contenido de dicho plan. Basados en esto, acordamos proveer servicios de respuesta a emergencias segun sea requerido por dicha compania.

Atentamente,

RECEIVED
OCT 20 1988
Technical Services

10-10-88

CENTRO MÉDICO DE ARECIBO

14 de octubre de 1988

Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P. R. 00617
Atención: Natale S. Ricciardi
Departamento Administración

Estimados Sres:

Por este medio deseamos informarle que el Sr. Teodo Muñiz hace alrededor de un año que no trabaja para nuestra Institución. El Dr. José Luis Miranda es el Director Médico Ejecutivo actualmente.

Sin otro particular al cual hacer referencia, nos reiteramos como siempre a sus órdenes.

Cordialmente,

Dr. Rafael A. Jiménez
Director Médico
Centro Médico de Arecibo

RAJ/lmc

RECEIVED
OCT 20 1988
Technical Services

Call Box 1500, Arecibo, PR 00613 - Tel. (809) 878-7272

FECHA: 5 de diciembre de 1988

A: Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617
ATTN: Natale S. Ricciardi
Departamento de Administracion

RE: PLAN DE CONTINGENCIA RCRA

Certifico que hemos recibido el Plan de Contingencia revisado de Pfizer Pharmaceuticals Inc. El mismo se nos ha sido enviado en cumplimiento con los requisitos de la reglamentacion federal "Resource Conservation and Recovery Act" (RCRA).

En adicion, certificamos que hemos revisado y nos hemos familiarizado con el contenido de dicho plan. Basados en esto, acordamos proveer servicios de respuesta a emergencias segun sea requerido por dicha compania.

Atentamente,

Directora Ejecutiva - ASEM

NOTA: En la hoja adjunta presentamos nuestras recomendaciones con relación al contenido del Plan de Contingencia.

10-10-88

RECOMENDACIONES:

1. La Pfizer Pharmaceuticals debe hacer gestiones para incluir dentro del Plan de Contingencia los recursos del sistema de Emergencias Médicas Estatal para el manejo, triage, transporte de víctimas lesionadas en la eventualidad de un desastre.

2. Debe existir un plan que especifique las unidades locales de asistencia médica así como los hospitales que responderán a una situación de alerta o emergencia y en que capacidad responderán. La respuesta deberá estar limitada por los recursos disponibles y el tipo de situación.

3. La relación entre la Pfizer Pharmaceutical y el Fondo del Seguro del Estado y otros hospitales de la comunidad debe ser clasificada para garantizar que el cuidado médico sea provisto de forma eficiente.

4. Los acuerdos de ayuda mutua entre las unidades locales, dispensarios, hospitales y el Centro Médico deber ser revisados para lograr la mejor utilización de recursos y establecer normas de traslados. Esto debe realizarse con la coordinación de la Secretaria Auxiliar en Emergencias Médicas.

5. Inclusión y Revisión del número de teléfono de Emergencias Médicas, Centro de Información sobre Envenenamiento, Unidad de Quemados y la Unidad de Cuidado Especializado de Emergencia.

Emergencias Médicas, Area de Arecibo
878-3868

Emergencias Médicas, Estatal
343-2550

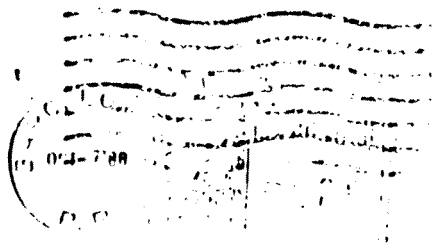
Centro de Información sobre Envenenamiento
754-8535

Unidad de Quemados
754-2052, 754-2352, 754-2354

Unidad de Cuidado Especializado de Emergencia
763-0774

Sra. Laura Torres de Morales
Centro Medico de Rio Piedras
Adm. Servicios Medicos
Apt. C-M Caparra Heights Sta.
San Juan, P.R. 00935





Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617

ATTN: TECHNICAL SERVICES DEPT.

Pfizer Pharmaceuticals Inc.
POST OFFICE BOX 628, BARCELONETA, PUERTO RICO 00617 • (809) 846-4300

February 28, 1989

Laura Torres de Morales
Centro Medico de Rio Piedras
Adm. Servicios Medicos
Apt. C-M Caparra Heights Sta.
San Juan, P.R. 00935

Estimada Sra. Torres:

Por este medio le damos las gracias por tomar en cuenta de forma tan expedita al responder a nuestro plan de contingencia con sus recomendaciones.

Todos los puntos se han tomado en consideracion y seran implementado en nuestro plan de contingencia.

Atentamente,

Ramon Marrero
Ingeniero Ambiental

xc: DOC: 5410

02-34-89

RECEIVED OCT 14 1988

FECHA: X-17-88

A: Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617
ATTN: Natale S. Ricciardi
Departamento de Administracion

RE: PLAN DE CONTINGENCIA RCRA

Certifico que hemos recibido el Plan de Contingencia revisado de Pfizer Pharmaceuticals Inc. El mismo se nos ha sido enviado en cumplimiento con los requisitos de la reglamentacion federal "Resource Conservation and Recovery Act" (RCRA).

En adicion, certificamos que hemos revisado y nos hemos familiarizado con el contenido de dicho plan. Basados en esto, acordamos proveer servicios de respuesta a emergencias segun sea requerido por dicha compania.

Atentamente,

Luis A. Ramos
Hato Tejas Sec. Director

10-10-88

ESTADO LIBRE ASOCIADO DE PUERTO RICO
SERVICIO DE BOMBEROS
Arecibo
PUERTO RICO

21 de octubre de 1988

Pfizer Pharmaceutical Inc.
P.O. Box 628
Barceloneta, PR 00617

Atención: Natale S. Ricciardi
Depto. de Administración

Estimado señor Ricciardi:

Certifico que hemos recibido el Plan de Contingencia revisado de Pfizer Pharmaceuticals Inc. El mismo se nos ha sido enviado en cumplimiento con los requisitos de la reglamentación federal "Resource Conservation and Recovery Act" (RCRA).

En adición, certificamos que el personal de Bomberos de Barceloneta ha participado en logueos en la Fire Incipient Brigade de la planta.

Basado en esto, acordamos proveer el servicio de respuesta a emergencia según esté a nuestro alcance.

Para su conocimiento y acción.

Atentamente,

Gilberto L. Torres Plumey
Capitán de Distrito
Arecibo, Puerto Rico

GTP/mcs

EVITAR INCENDIOS ES RESPONSABILIDAD DE TODOS
TELEFONO DE EMERGENCIA 343-2330

NOV 09 1988

FECHA: 31 de octubre de 1988

A: Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617
ATTN: Natale S. Ricciardi
Departamento de Administracion

RE: PLAN DE CONTINGENCIA RCRA

Certifico que hemos recibido el Plan de Contingencia revisado de Pfizer Pharmaceuticals Inc. El mismo se nos ha sido enviado en cumplimiento con los requisitos de la reglamentacion federal "Resource Conservation and Recovery Act" (RCRA).

En adicion, certificamos que hemos revisado y nos hemos familiarizado con el contenido de dicho plan. Basados en esto, acordamos proveer servicios de respuesta a emergencias segun sea requerido por dicha compania.

Atentamente,

Al-III Jesús M. García Avilés
Director
División Explosivos y Seguridad Pública

10-10-88

DATE: Oct. 10, 1988

A: Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617
ATTN: Natale S. Ricciardi
Departamento de Administracion

RE: RCRA CONTINGENCY PLAN

I hereby certify the receipt of the revised Pfizer Pharmaceuticals, Inc. Contingencia Plan in accordance with Resource Conservation and Recovery Acts Federal Regulation (RCRA).

In addition, I certify that such document has been revised by us and we have familiarized ourselves with its content. Based on this, we agree to provide emergency response services when requested by Pfizer Pharmaceuticals, Inc.

Cordially,

10-10-88

Route: C. López
F. Sánchez
R. Marrero

Pls file.

FECHA: 18 de octubre de 1988

A: Pfizer Pharmaceuticals Inc.
P.O. Box 628
Barceloneta, P.R. 00617
ATTN: Natale S. Ricciardi
Departamento de Administracion

RE: PLAN DE CONTINGENCIA RCRA

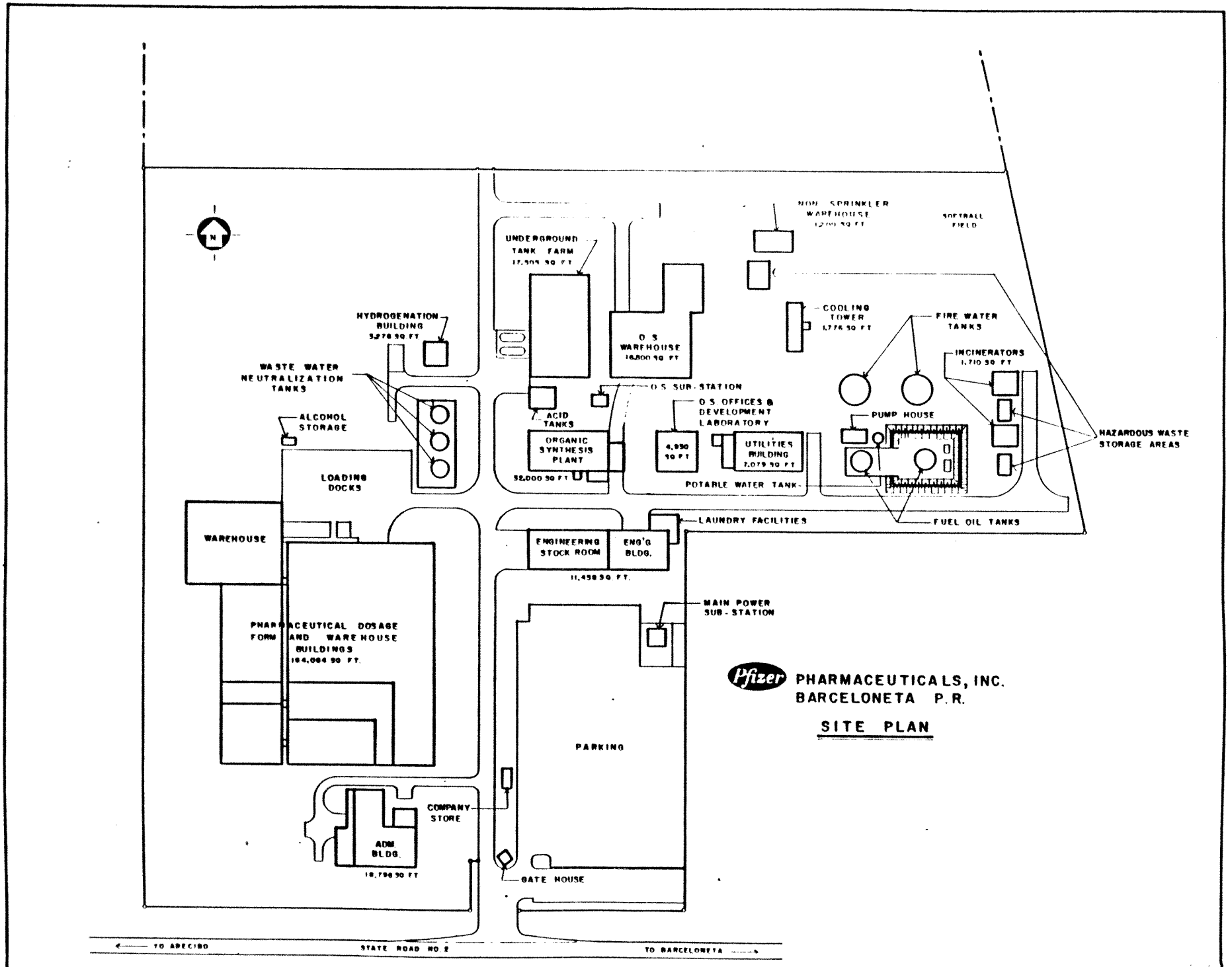
Certifico que hemos recibido el Plan de Contingencia revisado de Pfizer Pharmaceuticals Inc. El mismo se nos ha sido enviado en cumplimiento con los requisitos de la reglamentacion federal "Resource Conservation and Recovery Act" (RCRA).

En adicion, certificamos que hemos revisado y nos hemos familiarizado con el contenido de dicho plan. Basados en esto, acordamos proveer servicios de respuesta a emergencias segun sea requerido por dicha compania.

Atentamente,

/s/ José E. Ruiz Mercado
DIRECTOR DE AREA

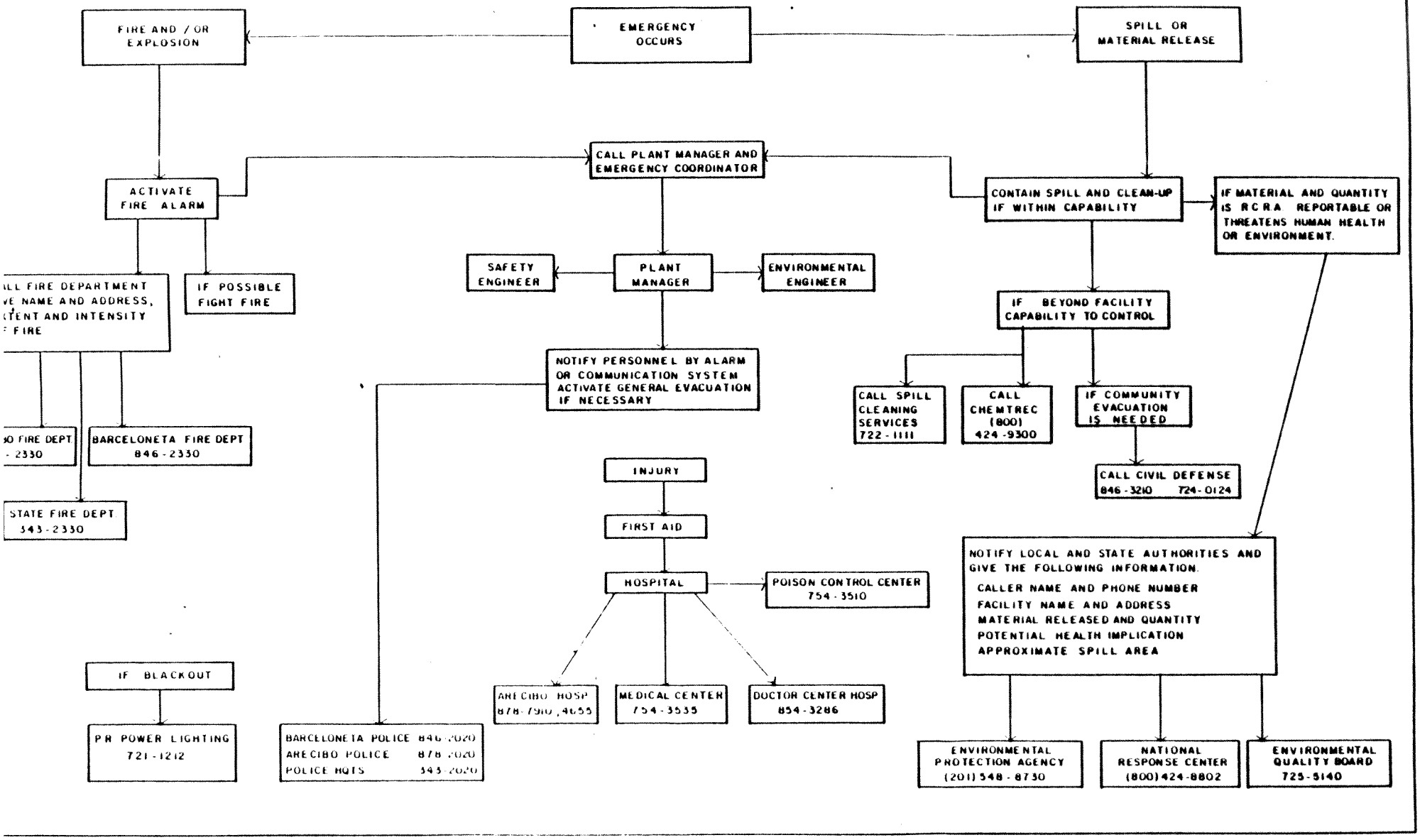
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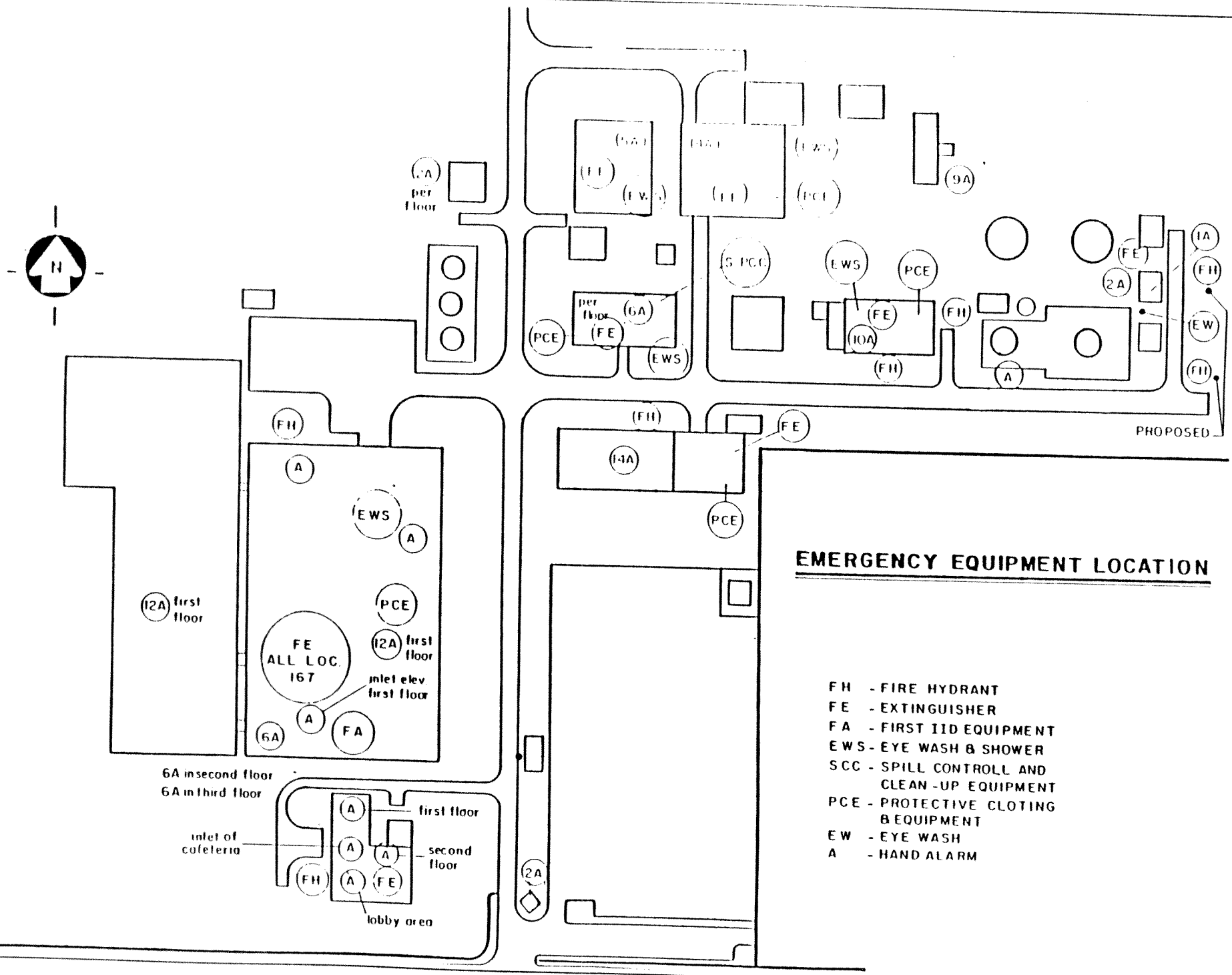


Pfizer PHARMACEUTICALS, INC.
BARCELONETA P.R.

SITE PLAN

EMERGENCY PLAN OF ACTION




N
(2A) per floor
(FE)
(EWS)
(PCE)
(9A)
(5 PCC)
(1A)
(FH)
(2A)
(EW)
(A)
PROPOSED
per floor (6A)
(10A)
(14A)
(12A) first floor
FE ALL LOC. 167
inlet elev. first floor
(FA)
6A in second floor
6A in third floor
inlet of cafeteria
first floor
second floor
lobby area
EMERGENCY EQUIPMENT LOCATION
FH - FIRE HYDRANT
FE - EXTINGUISHER
FA - FIRST IID EQUIPMENT
EWS - EYE WASH & SHOWER
SCC - SPILL CONTROLL AND CLEAN-UP EQUIPMENT
PCE - PROTECTIVE CLOTING & EQUIPMENT
EW - EYE WASH
A - HAND ALARM

ATTACHMENT E

CONTENT:

- Closure Plan
- Financial Requirements

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

K. CLOSURE PLAN AND FINANCIAL REQUIREMENTS

This closure plan identifies the steps to partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The plan also addresses the conditions and reasons under which partial closure will occur. A post closure plan is not included because all of the hazardous wastes and residues will be removed from the site.

Pfizer Pharmaceuticals, Inc., (PPI), will maintain an on-site copy of the approved closure plan and all revisions to the latest plan until the certification of closure completeness has been submitted and accepted by EPA, Region II.

Pfizer's General Manager will notify the Regional Administrator at least 180 days prior to the expected date for partial or final closure.

Within 90 days after receiving the final volume of hazardous wastes, all hazardous wastes will be treated or removed from the site in accordance with this plan. Upon completion of closure, Pfizer's General Manager will submit to the Regional Administrator a certification by both the Pfizer General Manager and by a local independent registered professional engineer that the facility has been closed in accordance with the approved closure plan.

This closure plan is designed to ensure that the facility will not require further maintenance and controls; minimizes or eliminates threats to human health and the environment, and avoids escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or waste decomposition products to the ground, surface waters or to the atmosphere. If there is evidence of any spills or leaks, samples will be taken and analyzed to determine the extent of contamination and steps will be taken to decontaminate the affected areas.

The following sections discuss in detail the procedures which will be followed to ensure proper closure.

1. General Description

The container storage areas, tank and incinerator are located in the East section of

plant's facilities. Pfizer Pharmaceuticals, Inc. facility is located on a 90 acre tract in an industrial zone area of which 40 acres are used to manufacture pharmaceutical products.

The hazardous waste facilities consist of a stainless steel 5,000 gallon storage tank, three container storage areas and an incinerator having a maximum capacity of 180 lbs/hr of waste solids and 55 gal/hr of liquid wastes.

This incinerator will be used for inventory reduction of the liquid solvent and ignitable filter cakes prior to final shut down. However, the cost estimates for inventory removal are based on shipping the waste offsite for disposal and using a third party for all labor, transportation, treatment, and disposal.

2. Partial and Final Closure Activities

Pfizer expects to perform partial closure when any one of the components of the hazard facilities described above needs to be replaced. In general, partial closure would follow the same procedures that would be followed for a total closure. The hazardous waste inventory would not be treated or removed unless the drum storage areas are to be closed. Final closure date of the all hazardous waste facilities is currently not known, however for the purposes of this plan is assumed to be the year 2010.

3. Maximum Waste Inventory

The following table shows the maximum inventory of wastes possible in the storage at any given time during the operating life of PPI. The waste characteristics are similar to these presented in Section C. The maximum inventory of toxic filter cakes is assumed to equal the total production for a 20 year period. The remainder of the storage capacity was assumed to be two thirds waste solvent and one third ignitable filter cakes. Note that the total 1000 maximum drum capacity could contain various combinations of the three

classifications. These assumptions result in very conservative cost estimates in handling, incinerating and/or disposing of these materials.

Waste Description	Volume
Spent solvent in storage tank	5,000 gallons
Spent solvent in 540 55 gallon drums	29,700 gallons
Total spent solvent	34,700 gallons
Ignitable Filter Cakes in 240 55 gal. drums (each containing 330 lbs)	79,200 pounds
Toxic Filter Cakes in 220 55 gal. drums (each containing 330 lbs)	72,600 pounds
Total Solid Waste	151,800 pounds

4. Disposal of Waste Inventory

The closure cost estimate for disposal of the waste inventory, assumes usage of offsite facilities. It is assumed that all of the filter cakes will be incinerated at the Rollins Environmental Services incinerator located in Louisiana. This facility is fully permitted to treat these wastes. All liquid wastes will be incinerated at the San Juan Cement Kiln in Puerto Rico. The maximum possible waste inventory would be 5000 gallons of liquid waste and 1000 drums that could contain solids and liquids.

5. Description of hazardous waste management facilities.

a. Three container storage areas

These facilities consist of diked concrete slabs fenced in with chain link fence and covered with a corrugated metal roof. The container storage areas are diked on three sides to prevent run-on, (see Figures D-1, D-2, and D-3). The elevation of the fourth side is higher than the surrounding area preventing run-on. The slab in each

storage area slopes to a concrete trench. The trenches are used for secondary containment.

b. 5,000 gallon storage tank

This stainless steel tank is mounted on steel saddles supported on individual footings. The tank is located within a coated concrete containment dike. Precipitation which accumulates in the containment dike is drained, (by opening a valve), to the concrete sump where it is pumped to the process waste sewer system.

The tank accessories include an agitator, nozzles, pump, piping, valves, filters, level indicators, sight glass, pressure gauges and electrical connections. The accessories listed are either mounted on the tank or within the piping runs described below. The associated piping runs includes: the connection from an air operated diaphram pump located at the south container storage area to the tank; the connection from the tank to the incinerator; and the connection from the organic synthesis area to the tank. The total piping runs are estimated to be 1500 feet of stainless steel piping ranging in size between 1 and 2 inch O.D.

c. Rotary Kiln Incinerator

The rotary kiln incinerator and its accessories are mounted within a coated concrete containment dike. It is supported by a structural steel frame also within the area of the pad. The area is protected by a roof and siding on the east side (to control rainfall from the direction of the prevailing wind). The principal components of the incinerator are the primary chamber, the secondary chamber, the by-pass stack, the venturi scrubber, the absorber, the induced draft fan and the discharge stack. The accessories include the

following: burners, burner air supply fan, ram feeder, screw feeder, interconnecting ducts, piping, valves, pumps, instrumentation and controls.

6. Summary of Decontamination Strategy

After removal of hazardous waste inventory the overall strategy will be to set up three decontamination areas. These areas will be the South container storage area (which would be clear of all drums), the diked pad under the incinerator, and the diked area of the storage tank. We will then decontaminate the storage tank and its piping and accessories. Up to this point the incinerator will remain operable. It will be used to destroy accumulated trash, absorbent pillows, spent solvents, etc. For purposes of the cost estimate, it is assumed that the incinerator would not be operating and that all waste will be disposed of offsite. The incinerator will then be dismantled and decontaminated followed by decontamination of the storage areas. All washings collected from decontamination procedures described below will be tested and will be appropriately disposed. For the purposes of this cost estimate, it has been assumed that an independent contractor will decontaminate and dismantle the equipment.

7. Equipment List

Equipment that is available on site for decontamination includes:

- A steam cleaning unit
- A Spark water blaster
- 55 gallon drums
- A portable O_2 and combustible vapor analyzer (explosimeter)
- Air masks
- Safety harness
- Acid/solvent resistant coveralls
- Spill control absorbent pillows
- Spill containment equipment
- Head protection
- Face shields
- Neoprene coated gloves

- Neoprene coated boots
- Industrial grade water hose

8. Safety procedures

The operations area will be off limits to plant personnel. Smoking in this area is prohibited and care will be exercised when using open flames. The plant's tank entry procedure will be followed by all persons for entering the tank or enclosed spaces.

Personnel will be clothed with appropriate coveralls, face shields, gloves, boots and hard hats. This gear will be hosed off at the end of each day of operation and left at the worksite. Prior to commencing closure, operation training will be held to describe the purpose, methods, and necessary precautions to be followed by each worker for the tasks described in this plan. The specific hazardous materials involved, their characteristics, and the hazards involved in the operation will also be explained.

9. General Decontamination Procedures

The principal hazardous wastes generated at this facility are spent solvents and solvent saturated filter cakes. While incineration is the preferred method of disposal for these materials, all of the hazardous constituents of these wastes are present in process waste water routinely discharged to the process sewer. These wastes are equalized, neutralized if necessary to meet local pretreatment standards and then discharged to the public sewerage system. The public sewer system flows to the Barceloneta Regional Waste Treatment Plant, (BRWTP). All floor washings and equipment washings as well as solvent recovery bottoms from routine plant operations are discharged to the BRWTP and are fully permitted. Therefore, the washings from the decontamination of PPI RCRA waste treatment and storage facilities should meet all of the criteria for discharge to the BRWTP.

Our decontamination plan utilizes the incinerator to dispose of the liquid solvents

and ignitable filter cakes. The remaining toxic filter cakes will be transported and treated off-site at a licensed hazardous waste incinerator. All the facilities which contacted the wastes will be decontaminated by steam cleaning and triple washing with a water spray. The effectiveness of the decontamination procedures will be determined by analyzing the final rinse water. Note that triple washing consists of an amount of water equal to three calculated volumes of the equipment.

Our experience in washing process equipment and floors has demonstrated that good cleaning can be achieved with this approach. If we find areas having more stubborn deposits we will water blast these areas with the Spark 6-300 Water Blaster. All of the water washings will be collected in the incinerator sump and pumped to a 6,000 gallon tank truck. It is noted that the incinerator sump meets the definition of a tank as per 40 CFR 260.10.

The contents of the tank truck will be transferred to one of the three 38,000 gallon equalization and pretreatment tanks where all of the decontamination waste waters will be accumulated. If an immiscible phase is detected, it will be decanted or absorbed with absorbent pillows. When all of the decontamination wastes have been collected in the treatment tank they will be mixed and tested against the pretreatment standards which are presented in Appendix Q. Presuming that the wastes can be discharged in compliance with the plants discharge permit and pretreatment standards, they will be released at a rate in conformance with the discharge permit. The expected quantity of wash water from each decontamination operation is detailed below. For the purposes of the cost estimate, we have assumed that all wash water will be treated offsite at a RCRA TSD facility.

If the waste characteristics exceed the discharge limitations, the wastes will be pretreated to reduce the constituent to the permitted level. Treatment might consist of pH

adjustment, aerobic biological treatment using the existing tanks as biological reactors, steam stripping using an existing solvent recovery column, or chemical oxidation such as using hydrogen peroxide. Such a condition is considered extremely unlikely.

Since the concrete sump and the equalization system meets the definition of a tank, and the waste water is subject to regulation under Section 307 (b) of the Clean Water Act, the on site treatment of any generated wash water is exempt from RCRA regulations.

10. Cleanup of storage tank and piping

Cleanup of this equipment will begin with purging the pipe lines with nitrogen to displace solvent into the hazardous waste storage tank. These residues would be pumped from the tank into drums. The piping would then be flushed with three pipe volumes, (three times the calculated volume of the piping), of hot water followed by steam. The water and condensate would be directed to the hazardous waste tank. The final rinse from each section of pipe will be sampled and analyzed for constituents that might be present in the waste. Appropriate cleanup standards in effect at that time will be used to assess whether the piping has been effectively cleaned. If the piping is not sufficiently cleaned, the washing process can be continued or a decision can be made to dispose of the piping at a Subtitle C landfill. All of the piping would be dismantled for final disposition. When the piping is cleaned, it will be sold for scrap or disposed in a municipal landfill. For purposes of the estimate it has been assumed that the material would be disposed at a Subtitle C landfill. All of the piping would be dismantled for final disposition.

The tank will be cleaned by water wash followed by steam cleaning. All the wash water and steam condensate from the tank and piping will be pumped to a rental tank truck. The tank accessories will be disconnected from the tank and placed in the concrete dike near the

drain. Note that an explosimeter will also be used to detect combustibles, prior to entering the tank. The tank will be cleaned through the 18 inch manway on the top of the tank. When the explosimeter shows a lack of combustibles, a person will enter the tank using an air line respirator following the plant's tank entry procedure. He will inspect the interior of the tank for residues, etc.

If additional cleaning is required, the water blaster will be used to remove residues, etc. When completely clean, the independent engineer will obtain four wipe samples, one from each quadrant of the tank. The sampling protocol will be as recommended by EPA PCB Spill Cleanup Policy. EPA guidance available at the time of closure will be used to assess what clean up standards should be used. The tank will then be moved to another site, for disposal or reuse. The diked area surrounding the storage tank will be washed and steam cleaned to remove all traces of solvent or other residues. The wash water will be pumped to a tank truck. Four wipe samples, one from each quadrant, will be collected and analyzed to confirm that the dike area is clean. If cracks are noted in the dike area, either chip samples will be collected to confirm the integrity of the dike and pad and/or soil samples will be collected in the vicinity of the cracked surfaces.

The total expected wash water to clean the storage tank and piping and its accessories is estimated at 2,330 gallons. All of the wash water generated during closure will be collected, then pumped to a tank truck, and transported to the equalization tank. As previously discussed, the contents would be sampled and analyzed to confirm compliance with pretreatment standards. The wash water would be pretreated as necessary using methods described in previous sections, and then discharged to the BRWTP. However, for the purposes of cost estimate we assumed that the wash water would be disposed at a RCRA approved TSD facility.

10. Cleanup and decontamination of the incinerator

The first step in decontamination of the incinerator will be to drain all of the scrubber water to the incinerator's sump for disposal as previously discussed. The fuel lines will be dismantled at the burners and at the point where the incinerator piping ties into the kerosene tank discharge header after the fuel system has been drained and cleaned. The next step will be to remove the fuel burners, the ram feeder, the screw feeder, and the ash gate. This equipment will be moved to the South container area for decontamination via waterwash/steam cleaning. Following tank entry procedures, a person will enter the incinerator primary chamber and sweep it clean collecting all ash and debris. The cost estimate assumes that the ash will be disposed of in an EPA approved hazardous waste landfill. Note that a delisting petition for this ash will be filed and disposal as a hazardous waste at closure may not be necessary. At this point the interior of the primary chamber will be washed via the process described. Tools, ladders, etc. will be placed in the primary chamber for movement into the secondary chamber.

The secondary chamber and connecting breeching to the quench section and venturi scrubber will also be washed. All of the wash water from these operations will flow out of the primary and secondary chambers to the diked incinerator pad through the ash gate opening or through the scrubber sections to the incinerator's sump.

The wash water contained in the incinerator pad will also be sluiced to the incinerator sump and pumped to the tank truck. At this point all refractory will be removed. Four wipe samples will be collected and analyzed from the incinerator equipment.

The absorber will be opened and the packing material removed to the South container storage area where it will be cleaned with hot water and steam. All other incinerator feed

equipment or gas cleaning equipment will be disassembled and decontaminated either on the incinerator pad or in the South storage area.

Finally, the structural steel and the building sidings, instrumentation panels, stairways, gratings and concrete pad will be inspected and cleaned. Four wipe samples will be collected, (one in each quadrant), of the incinerator diked concrete area.

Any hazardous wastes such as the absorbent pillows and ash will be shipped off-site to a permitted hazardous treatment disposal facility.

12. Container Storage Areas

Components in the three container areas will be cleaned via water and the steam cleaning procedure described earlier. The washings will be pumped to the tank truck. Four wipe samples will be collected from each container storage area and analyzed. Note that one sample will be taken in each quadrant of each of the storage areas. If cracks are noted in the storage area pads, either chip samples will be collected to confirm the integrity of the dike and pad and/or soil samples will be collected in the vicinity of the cracked surfaces.

Finally the incinerator sump will be cleaned using the water blaster or steam cleaning equipment as before. The total wash from clean up of the storage areas is estimated to be 2,600 gallons or less. As indicated, all wash waters will be transferred to the equalization tank and will be checked against permit conditions and treated as necessary prior to discharge to the BRWTP. As mentioned earlier, the closure cost estimate assumes that this waste water is disposed of at a RCRA TSD facility as a worst case scenario. The total washing from all closure operations is estimated to be approximately 11,000 gallons.

At the time of closure, a decision will be made concerning the final disposition of the various facilities after they are decontaminated. For

the purpose of this plan, it will be assumed that the equipment will be sold for scrap and removed from the premises.

13. Completing Closure

The closure plan requires that an independent contractor and an independent professional engineer be used to complete closure. The professional engineer will certify that the site has been closed in accordance with this plan. The estimated costs to complete closure are based upon proposals received on other similar projects. This closure cost estimate will be kept on file at Pfizer Pharmaceuticals, Inc. It will be revised whenever a change in the closure plan affects the cost of closure and will be adjusted accordingly (from the date of its original development) to reflect changes in closure cost due to inflation. The estimated cost to close the facility is presented in Table K-1. The Department of Commerce's Annual Implicit Price Deflator for Gross National Products will be used to make annual adjustments.

14. Financial Assurance Mechanism for Closure

The financial assurance mechanism is presented in Appendix O.

15. Post-closure Cost Estimate

Since all waste will be removed from the facility, there will be no post-closure activities or costs.

16. Financial Assurance Mechanism for Post-closure

Since all wastes will be properly disposed of in an approved hazardous facility there will be no post-closure activities or costs.

17. Liability Insurance

a. Sudden Insurance
Pfizer Inc. has obtained insurance for sudden and accidental occurrences in the amount of $250 million dollars. An originally signed certificate of liability

insurance has been sent to the Regional Administrator by certified mail.

b. Non-sudden Insurance
Pfizer Inc. has $50 million of environmental impairment liability insurance for non-sudden accidents with $1 million deductible.

c. Financial Test
Since Pfizer Inc. has an insurance policy for sudden and non-sudden accidental occurrences, the financial test is not necessary.

d. Variance Procedure
Pfizer Inc. will not request a reduction of liability amount from the Regional Administrator.

e. Adjustment Procedures
If the Regional Administrator increases the amount of liability coverage or elects to improve non-sudden liability coverage requirements, Pfizer Pharmaceuticals, Inc. will evaluate and seek an adjustment to the insurance policy discussed above, if necessary.

18. State Assumption of Responsibility
Pfizer Pharmaceuticals, Inc. will not request Commonwealth assumption of the legal or financial responsibilities.

19. Closure Schedule
The proposed closure schedule is presented in Table K-2.

TABLE K-1
CLOSURE COST ESTIMATE

	COST
A. Disposal of Hazardous Waste Inventory	
1) Off-site disposal of liquid waste solvents (5000 gallon tank and 540 55 gallon drums) Costs assumed $0.75/gallon	22,275
2) Off-site incineration of ignitable filter cakes (240 55 gallon drums at 330 lbs/drum) Costs assumed $2.25/lb	178,200
3) Off-site incineration of toxic filter cakes, (220 55 gallon drums at 400 lbs/drum) Costs at $2.25/lb	163,350
B. Decontamination, Dismantling, and Disposal of Piping and Hazardous Waste Storage Tank	
1) Decontamination of Piping, Tank and Tank Dike Area	
a. Labor: Supervision - 20 hrs at $100/hr	2,000
Labor (2 men) - 40 hrs at $80/hr	3,200
b. Wash water disposal 7000 gallons at $0.50/gallon treatment, $1.50/gallon shipping	14,000
c. Waste disposal 1 drum of absorbent pillows at $800/drum	800
d. Rental of 8,000 gallon tank trailer- 10 days at $200/day	2,000
2) Dismantling and Disposal of Pipe	
a. Labor: Supervision- 20 hrs at $100/hr	2,000
Labor (2men)- 40 hrs at $80/hr	3,200
b. Disposal of 10 cubic yards (2 tons/yd) of piping and valving at $1.50/lb	60,000
(Note stainless steel waste tank will be sold for reuse. Analytical costs for cleanup sampling are included below.)	
C. Decontamination of Incinerator and Associated Equipment	
1) Labor: Supervision- 80 hrs at $100/hr	8,000
Labor (3 men) - 240 hrs at $80/hr	19,200
2) Wash Water Disposal, 5700 gallons at $0.50/gallon treatment, $1.50/gallon shipping costs	11,400
3) Waste Disposal	
a. 6 drums of ash (55 gal capacity at 400lbs/drum) Cost $1.50/lb	3,600
b. 5 drums of absorbent pillows at $800/drum	4,000
4) Rental of 8,000 gallon tank trailer- 20 days at $200/day	4,000
(Note the dike area and incinerator equipment sampling and analytical costs for cleanup sampling are included below. Dismantling and cleaning of incinerator piping was included in item B above.)	

TABLE K-1
CLOSURE COST ESTIMATE (continued)

	COST
D. Decontamination of Drum Storage Areas	
1) Labor: Supervision - 20 hrs at $100/hr	2,000
Labor (2men) - 40 hrs at $80/hr	3,200
2) Disposal of Wash Water , (2200 gallons at $0.50/gallon treatment, $1.50/gallon shipment)	4,400
3) Disposal of 1 drum of absorbent pillows at $800/drum	800
4) Rental of 8,000 gallon tank truck - 5 days at $200/day	1,000
E. Sampling and Analytical Costs	
1) Total of 20 wipe samples of concrete dike areas at $500 each	10,000
2) 4 wipe samples from incinerator equipment at $500 each	2,000
3) 3 tank truck samples of wash water,and 3 samples of final wash water from each pipe section at $500 each	3,000
4) Total of 4 wipe samples from hazardous waste storage tank at $500 each	2,000
F. Closure Certification	
1) Labor: PE- 80 hours at $100/hr	8,000
2) Expense 14 days at $80/day	1,120
SUBTOTAL	475,405
G. Contingency at 15%	71,311
TOTAL CLOSURE COST ESTIMATE	**546,716**

TABLE K-2

ANTICIPATED CLOSURE SCHEDULE

ACTIVITY	DAYS 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180
1. Receipt of final volume of hazardous waste	—
2. Removal/disposal of final waste inventory	————
3. Decontamination of storage and piping	—
4. Dismantling and decontamination of incinerator	——
5. Decontamination of drums storage area	—
6. Removal/disposal of decontamination washings	—
7. Dismantling and scrapping or selling of storage tanks piping and incinerator	————
8. Inspection of decontamination by Certified Engineer	————
9. Completion of closure and certification submittal to EPA Regional Administrator	————

ATTACHMENT F

CONTENT:

- Requirements For Ignitable, Reactive, or Incomplatible Waste

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes

Reactive waste are not stored in the waste storage facilities. Containers and tanks are compatible with the stored wastes; the only source of ignition is external to the containers. Signs are placed in the container storage area clearly marked with the legend "NO SMOKING" and "DANGER-UNAUTHORIZED PERSONNEL KEEP OUT". Spark proof tools (brass hammers, wrenches, etc.) are used on all containers and tanks storing materials. The tank is equipped with a flame-arrestor and is shown in Figure D-7. A work permit is required to conduct corrective work maintenance. The work permit as shown in Figure E-2, provides a checklist of necessary safety items to be used/followed and precautions for the employee(s). The work permit is prepared by a Supervisor who evaluates the safety conditions prior to beginning work.

General Precautions for Handling Incompatible Wastes

All of the wastes that are stored in the containers, the tank, and the tank storage areas are compatible.

Management of Ignitable Wastes in Containers

Precautions taken in the container storage area to prevent accidental fire and explosion include the use of proper storage containers, appropriate warning signs, covered area to minimize radiant heat input, enclosed area (fence) to eliminate exposure, grounding during transfer, and adequate aisle space. Figure B-1 shows that container storage areas are more than 50 feet from the property line.

Management of Incompatible Waste in Containers

All of the hazardous wastes generated at PPI are compatible.

Management of Ignitable or Reactive Wastes in Tanks

There are no reactive hazardous wastes generated. Pfizer Pharmaceuticals, Inc. takes precautions to prevent accidental waste ignition protecting the tank from sources of ignition including: open flames, smoking, cutting, welding, hot surfaces, and sparks (static, electrical or mechanical). These operating conditions are reinforced by the work permit. Proper equipment such as nonsparking tools are used. In addition, the tank is equipped with a flame arrestor. While ignitable wastes are handled, Pfizer Pharmaceuticals, Inc. confines smoking and open flame to specially designated locations. "No Smoking" signs are conspicuously placed

wherever there is a hazard from ignitable waste.

The standards in NF PM 30-1981 were reviewed to determine buffer zone requirements. In accordance with Table 2-1 and 2-6 of this standard the minimum distance required between the tank and the property line is 30 feet. This distance is based upon storage of stable flammable liquids in a 5000 gallon horizontal tank that has an emergency vent capable of limiting the pressure in the tank to less than 2.5 psig. The incinerator storage tank is located 115 feet from the PPI property line.

FIGURE E-2

WORK PERMIT

DISTRIBUTION:
ORIGINAL: ENG./CONT.
GOLD: SAFETY DEPT.
YELLOW: DEPT. OF AUTHORIZATION

PFIZER PHARMACEUTICALS INC.
BARCELONETA, PUERTO RICO

1988

WORK PERMIT FOR DANGEROUS TASKS

DATE _____ 198___ WO # _____ _____ TIME (MILITARY)

WORK DESCRIPTION _____

_____

_____

The following precautions should be taken in the work area:
(Specified by the Department Supervisor) Name of Supervisor _____

- [X] NO SMOKING
- [X] USE SAFETY GLASSES, HARD HAT AND SAFETY SHOES
- [ ] USE RUBBER GLOVES
- [ ] USE AIR MASKS
- [ ] USE NOISE PROTECTION
- [ ] USE COMPLETE PROTECTIVE CLOTHING
- [X] DO NOT WORK ALONE
- [ ] HAVE APPROPRIATE FIRE EXTINGUISHERS ON HAND
- [ ] USE WELDING SHIELD
- [ ] DO NOT USE ELECTRIC TOOLS
- [ ] HAVE SUFFICIENT WATER ON HAND
- [ ] USE SAFETY BELTS
- [ ] AVOID DIRECT CONTACT WITH PROCESS MATERIALS
- [ ] IDENTIFY EMERGENCY ESCAPE ROUTE
- [ ] REQUEST APPROVAL FROM WORK PERMIT ISSUER TO CONNECT ELECTRICITY
- [ ] DO NOT CARRY OUT WORK WITHOUT SAFETY GUARD RAIL
- [ ] MAINTAIN HUMID AREA
- [ ] USE FIREPROOF BLANKETS TO CONTAIN SPARKS
- [ ] USE SPARK PROOF TOOLS

SPECIAL PRECAUTIONS:
Verify explosive danger in the atmosphere.

☐ Continuously ☐ every _____ by _____

Others _____

_____

_____

I, _____ am satisfied with all the preparations which have been put in practice for the protection of the persons who will carry out the work. These preparations include:

- [ ] CLEANING AND WASHING OF EQUIPMENT
- [ ] NEUTRALIZING SOLUTION PREPARED AND AVAILABLE IN THE AREA
- [ ] CONFIRMED EXPLOSIVE - DANGER FREE ATMOSPHERE
- [ ] ALL FLAMABLE AND/OR TOXIC MATERIALS WERE REMOVED FROM THE WORK AREA
- [ ] PLACEMENT OF LOCKS AND/OR SAFETY WARNINGS IN ALL ELECTRICAL VALVES AND CONTROLS
- [ ] CLEAN AND UNPRESSURIZED PIPING AND EQUIPMENT
- [ ] PERSONNEL ORIENTED TO THE NEAREST LOCATION OF SAFETY EYE-WASH AND SHOWER STATION
- [ ] PLACEMENT OF BARRICADES TO IMPEDE ACCESS TO PERSONS AND/OR VEHICLES TO THE WORK AREA

SPECIAL PREPARATIONS: _____

_____

I declare that we have carefully read and understood the above instructions, that we will obey them, and will inform all personnel who participate in this work about the dangers and precautions indicated above.

Signed _____ Occupation _____
Signed _____ Occupation _____
Signed _____ Occupation _____
Signed _____ Occupation _____
Signed _____ Occupation _____

AUTORIZACION PARA REALIZAR TRABAJOS PELIGROSOS

FECHA _____ 198_ W O # _____ _____ HORA (MILITAR)

DESCRIPCION DEL TRABAJO _____

LAS SIGUIENTES PRECAUCIONES DEBERAN TOMARSE EN EL AREA DE TRABAJO (ESPECIFICADAS POR EL SUPERVISOR DEL DEPARTAMENTO) NOMBRE SUPERVISOR _____

- X NO FUMAR
- X USAR LENTES, CASCO Y ZAPATOS DE SEGURIDAD
- ____ USAR GUANTES DE GOMA
- ____ USAR MASCARA DE AIRE
- ____ USAR PROTECCION CONTRA RUIDOS
- ____ USAR ROPA DE PROTECCION COMPLETA
- X NO TRABAJAR SOLO
- ____ TENER EXTINGUIDOR DE INCENDIOS ADECUADO A LA MANO
- ____ USAR PANTALLA PARA SOLDAR
- ____ NO USAR HERRAMIENTAS ELECTRICAS
- ____ TENER BASTANTE AGUA A LA MANO
- ____ USAR CINTURONES DE SEGURIDAD
- ____ EVITAR CONTACTO DIRECTO CON MATERIAL DE PROCESO
- ____ PREVEER E IDENTIFICAR RUTA ESCAPE EMERGENCIA
- ____ SOLICITAR APROBACION DEL QUE EMITE ESTA AUTORIZACION PARA CONECTAR ENERGIA
- ____ NO REALIZAR EL TRABAJO SIN GUARDIA
- ____ MANTENER AREA HUMEDA
- ____ USAR FRIZAS A PRUEBA DE FUEGO PARA DETENER LAS CHISPAS
- ____ USAR HERRAMIENTAS ANTICHISPA

PRECAUCIONES ESPECIALES:

VERIFICAR PELIGRO DE EXPLOSION EN LA ATMOSFERA

☐ CONTINUAMENTE ☐ CADA _____ POR _____

OTRAS _____

YO _____ ESTOY SATISFECHO CON TODOS LOS PREPARATIVOS QUE SE HAN PUESTO EN PRACTICA PARA LA PROTECCION DE LOS QUE VAN A REALIZAR EL TRABAJO ESTOS PREPARATIVOS INCLUYEN

- ____ LIMPIEZA Y ENJUAGUE DE EQUIPO
- ____ SOLUCION NEUTRALIZANTE PREPARADA Y DISPONIBLE EN EL AREA
- ____ AUSENCIA DE PELIGRO DE EXPLOSION COMPROBADA EN LA ATMOSFERRA
- ____ TODOS LOS MATERIALES INFLAMABLES Y/O TOXICOS FUERON RETIRADOS DEL AREA DE TRABAJO
- ____ COLOCACION DE CANDADOS Y/O AVISOS DE SEGURIDAD EN TODAS LAS VALVULAS Y CONTROLES ELECTRICOS
- ____ TUBERIA Y EQUIPO LIMPIO Y LIBRE DE PRESION
- ____ INDICACION DADA AL PERSONAL SOBRE LA LOCALIZACION DE LA DUCHA Y LAVA-OJOS MAS CERCANO
- ____ COLOCACION DE OBSTACULOS PARA IMPEDIR EL ACCESO DE PERSONAS Y/O VEHICULOS AL AREA DE TRABAJO

PREPARATIVOS ESPECIALES _____

DECLARO QUE HEMOS LEIDO CUIDADOSAMENTE LAS INSTRUCCIONES QUE ANTECEDEN, QUE LAS HEMOS ENTENDIDO Y QUE LAS OBEDECEREMOS. INFORMAREMOS A TODO EL PERSONAL QUE PARTICIPE EN ESTE TRABAJO, SOBRE LOS PELIGROS Y PRECAUCIONES ARRIBA INDICADOS

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

FIRMADO _____ OCUPACION _____

ATTACHMENT G

CONTENT:

- Container Storage Area Design and Management

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

D. PROCESS INFORMATION

This section presents a detailed description of the hazardous waste storage and treatment facilities. PPI has three container storage areas, a nominal 5,000 gallon storage tank and a rotary kiln incinerator. The location of these facilities is shown in Figures A-4 and B-1.

1. Container Storage Area

a. General

The storage areas are referred to as the north, south, and west drum storage areas. A plan and section of each area is presented in Figures D-1, D-2,and D-3. The maximum drum inventory in the north, south, and west areas are 220, 240, and 540 drums respectively. Each area is surrounded by a chain link fence equipped with a locked gate.

b. Construction Details

Each container storage area consists of diked concrete pad which is sloped to a drainage trench equipped with a sump for containment and collection of spilled material. The slopes of the north, south, and west areas are 0.023, 0.028, and 0.011 feet/foot respectively. The containment systems are designed to contain greater than 10% of the maximum storage inventory volume. Containment volume calculations are presented in Appendix D. The concrete containment structure will be treated with a chemical compatible and impervious surface coating of Atlas Rezklad Hi-Build 100, or equivalent, to prevent the migration of spilled material into the concrete surface of the base (see Appendix D-2).

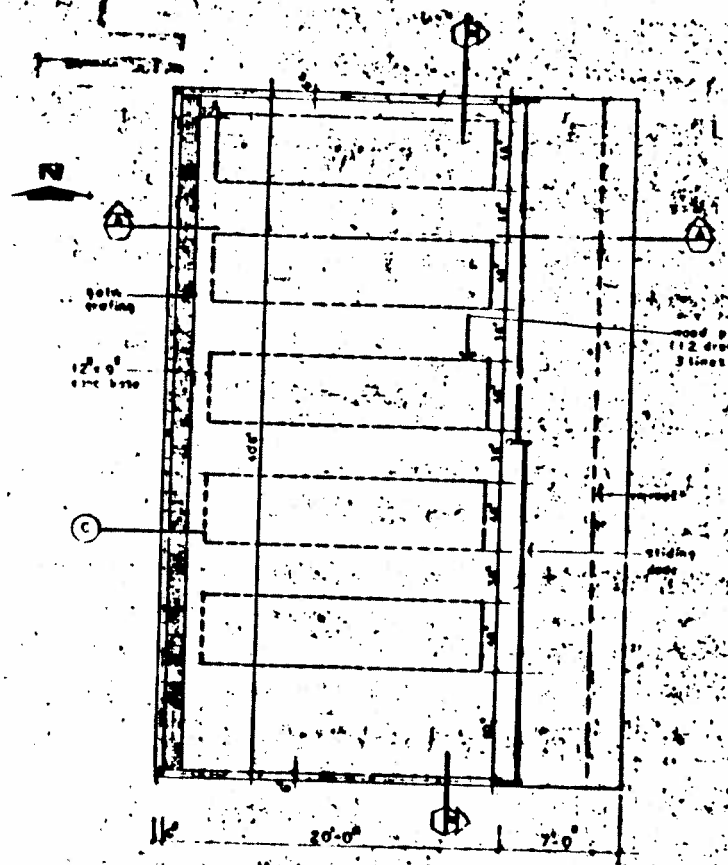
The concrete slabs that support the drums vary in thickness from 5 to 7 inches. The slab for each containment area was installed without joints (monolithic pours). Each slab rests on compacted limestone which has excellent load bearing characteristics. The slabs are constructed of 3000 psi concrete containing No. 3 reinforcing bars on 18 inch centers. The slabs were designed

to support the loading of a forklift carrying a full pallet of drums.

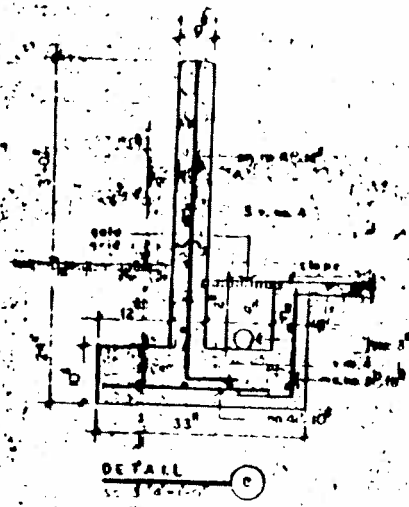
Inspections on a weekly will be conducted to insure that the base remains free of cracks and gaps. Cracks or gaps that may develop in the bases will be patched with cement and covered with Atlas Rezklad Hi-Build 100 coating, or equivalent compound. Repairs to the damaged coating will be initiated immediately upon its detection. Damage and subsequent repairs will be recorded.

FIGURE D-1

NORTH CONTAINER STORAGE AREA

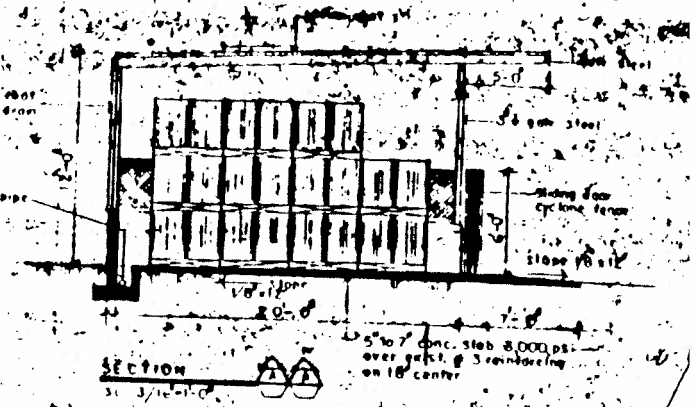


FLOOR PLAN

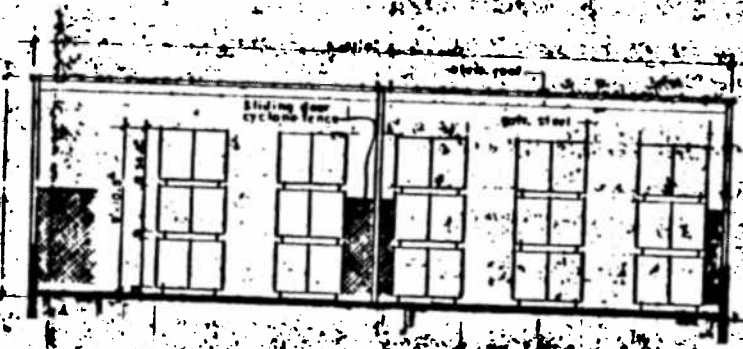


DETAIL

NOTE: SLAB AND FOOTINGS MUST BE POURED MONOLITHIC UP TO THE SHOWN CONSTRUCTION JOINT



SECTION



SECTION

HAZARDOUS DRUM STORAGE (NO)

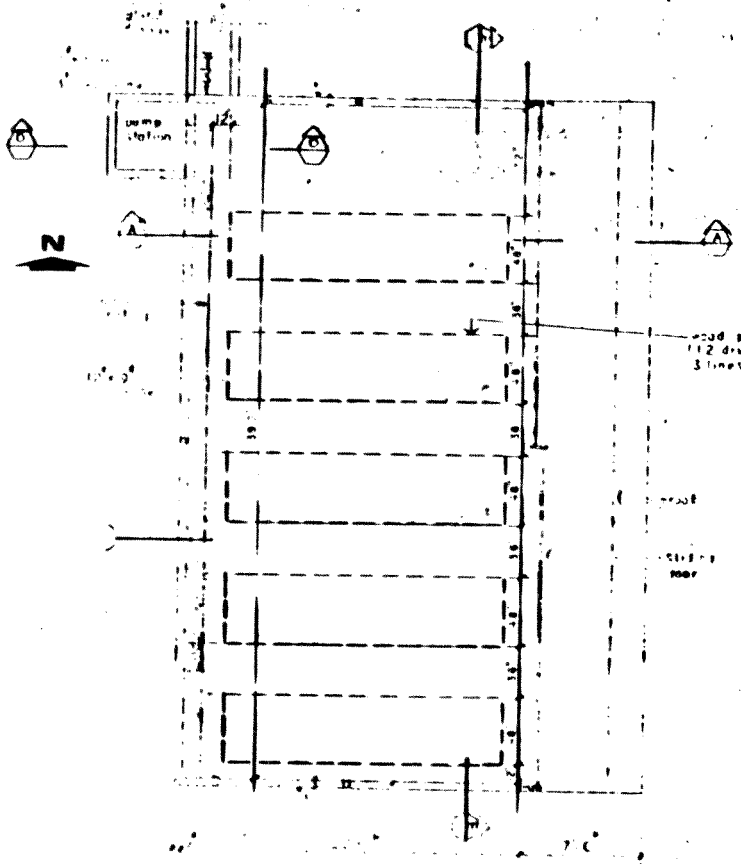
BLDG INCINERATOR AREA

FLOOR PLAN, DETAIL & SECTIONS

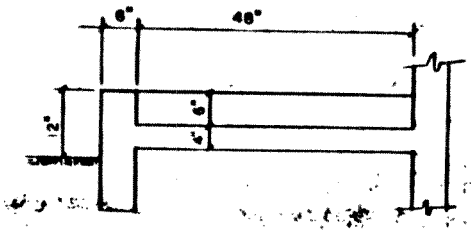
PFIZER PHARMACEUTICALS

FIGURE D-2

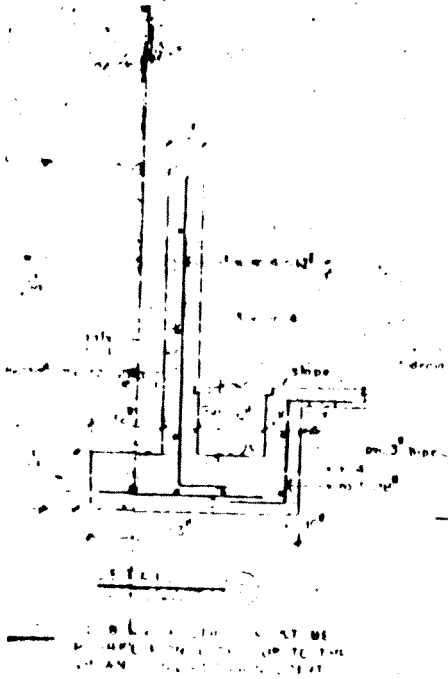
SOUTH CONTAINER STORAGE AREA

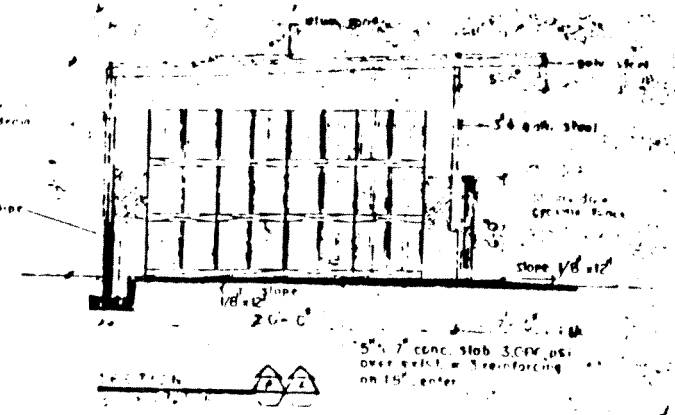


FLOOR PLAN

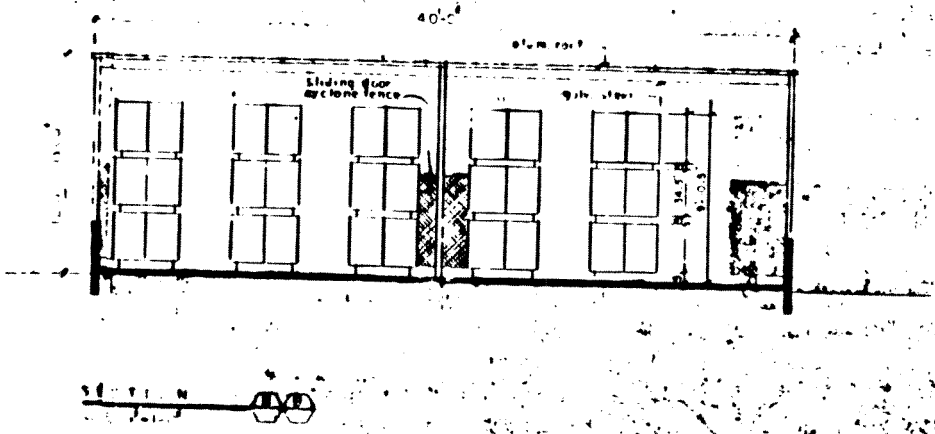


SECTION D-D
NOT TO SCALE





5" x 7" conc. slab 3,000 psi over polyet. w. 3 reinforcing on 15" center



HAZARDOUS DRUM STORAGE (ISO

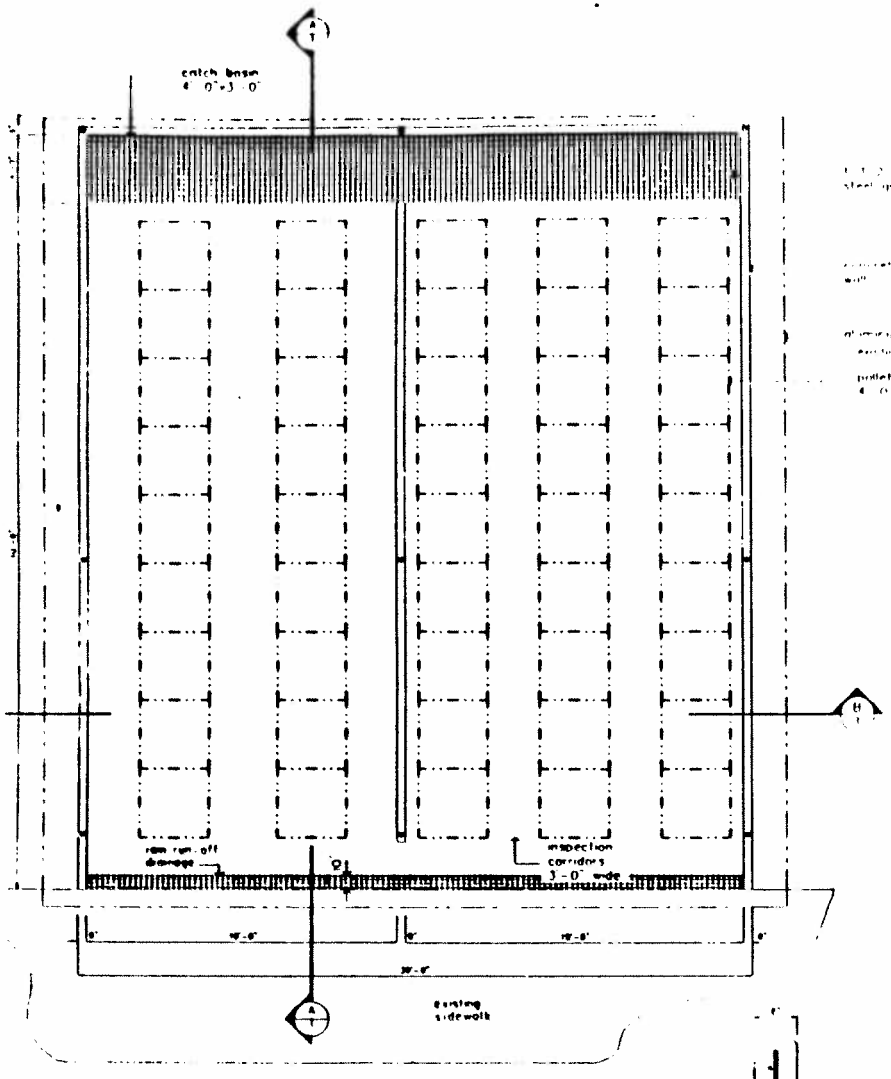
BLDG INCINERATOR AREA

FLOOR PLAN, DETAIL & Sections

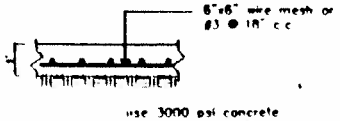
PFIZER PHARMACEUTICALS INC

FIGURE D-3

WEST CONTAINER STORAGE AREA

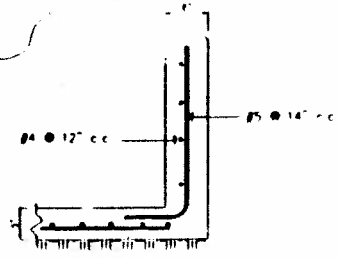


FLOOR PLAN

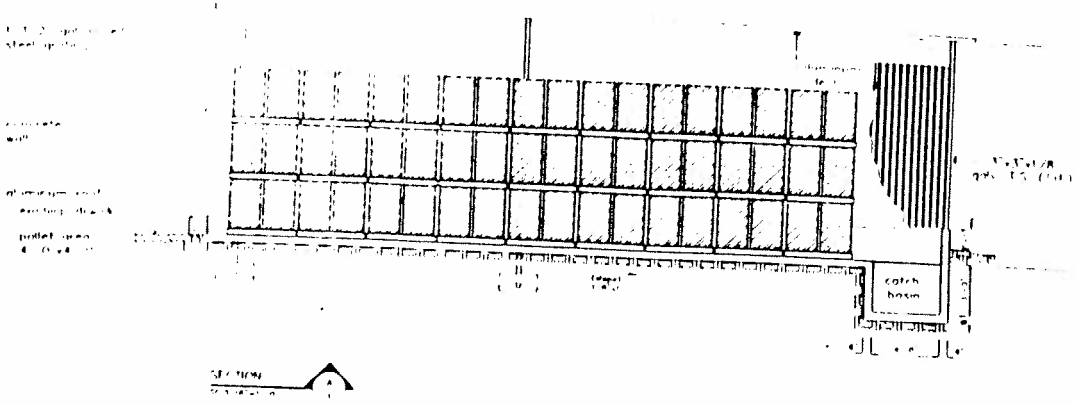


use 3000 psi concrete
slab to be monolitic

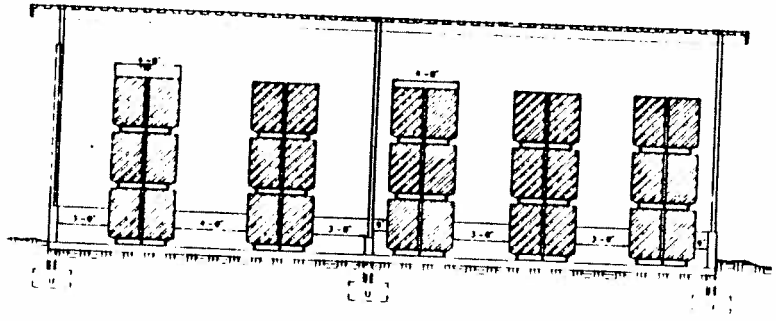
GROUND SLAB DETAIL



WALL DETAIL



SECTION



SECTION

NOTES

(1) 43'-0"x48'-0" aluminum roof with galvanized steel channels and pipes must be included

(2) roof elevation should be 13'-0" clear (sloped to the south)

(3) net volume dike - 4851 gallons

PHARMACEUTICALS, INC.

HAZARDOUS DRUM STORAGE (BESIDE BLDG 105)

FIGURE D-4

DRUM SHIPMENT TRAFFIC ROUTES

TO CONTANMENT STORAGE AREAS

c. Provisions to Minimize Surface Water Run On

There is a roof over each of the drum storage areas to reduce radiant heat input and minimize run on by precipitation. The containment areas are diked on three sides. The dike walls are approximately 2.5 to 3.0 feet in height. Details of the containment systems are shown in Figures D-1, D-2, and D-3. The area surrounding the opening of the north and south container storage areas slopes away from the entrance, thereby eliminating surface water run on. The west container storage area has rain run-off drainage to eliminate surface water run on. The topography of the surrounding area is indicated in Figure B-1. Discharge valves in containment sumps remain close until precipitation or spilled material is removed (See Figure D-5).

d. Description of Containers

The hazardous wastes that are generated are stored in 55 gallon drums constructed of carbon steel meeting the DOT Specification No. 17E or 17H. The drums are either new, reconditioned or previously used for the storage of raw materials at the facility. If the containers are former raw material drums, they will be emptied, cleaned, inspected, and relabeled. A drum is considered emptied if no more than 2.5 centimeters of residue remain on the bottom of the container or inner liner.

e. Container Without Free Liquid

In estimating the required containment volume in the container storage area, it was assumed that all of the wastes contain free liquids. This is probably a conservative assumption because some of the filter cakes should be dry enough to pass the paint filter test.

f. Container Management Practices

Containers holding hazardous wastes will not be opened, handled or transported in a manner which may cause the container to rupture or

leak. All containers holding hazardous waste will be closed during their handling and storage, except when it is necessary to add or remove waste. Closed head drums will have bungs in place and be tightly secured with a spark-proof bung wrench. Open-top drums will have covers, gaskets, and bolt rings tightly secured. Wastes in leaking drums or containers having questionable structural integrity will be immediately overpacked or the contents transferred into an acceptable container. Container management practices described below will be followed by personnel at the PPI facility.

Manufacturing Areas

Hazardous wastes are deposited in new or empty 55-gallon drums in the manufacturing areas.

Those drums that are stored for less than 90 days in the manufacturing areas (buildings 103, 104 and 105) are managed in accordance with 262.34 (a) 1 through (a) 4 and in the following manner:

- The container will be closed during storage.

- Hazardous waste which is stored in a container that is not in good condition or is leaking will be transferred to another container.

- The container and the waste will be compatible. The waste must not react with the container materials. The wastes are stored in DOT 17E or 17H drums. These drums are compatible with all of PPI's hazardous wastes.

- The containers will be inspected weekly.

- The date upon which each period of accumulation begins will be marked on the drum.

- The department which generated the waste will label the drum based on process

knowledge or sample the containers in order to confirm their contents. This will ensure that the containers will be stored with other compatible wastes. Sampling analysis will be in accordance with the Waste Analysis Plan (refer to Section C). The container will also be clearly labeled "Hazardous Waste."

- Personnel who handle the drums is trained in accordance with the training plan.

- Procedures to prevent fire, explosions and the uncontrolled release of hazardous materials are in effect in accordance with Section G of this application.

Drum Shipment to Container Storage Areas

Closed drums that are in good condition will be carried from the manufacturing areas on pallets by fork truck operated by trained waste disposal operators to one of the following container storage areas.

- North container storage area.

- West container storage area.

- South container storage area.

The routes that the forklifts will take in transferring containers to the three container storage areas is shown in Figure D-4. Forklift operators are licensed yearly according to Pfizer Plant requirements. Plant vehicle traffic along these routes is limited and is controlled by PPI's traffic control procedures. Forklift speeds of not greater then 10 mph are permitted. Waste disposal operators will segregate incompatible waste to ensure that they are not transferred together or stored at the same container storage area.

Only the south container storage area has the capability via an above ground pipeline to transfer the drummed waste to the 5,000 gallon hazardous waste storage tank. Drums that are transferred from the manufacturing areas to

either the west or north container storage area via forklift are ultimately transferred to the south container storage area for subsequent transfer to the hazardous waste storage tank.

Containers that arrive at container storage area leaking or representing a potential leakage problem will be handled in one of the following manners:

- The contents will be transferred to other containers that are compatible with the waste.

- The containers will be overpacked and stored until the contents can be pumped or transferred to other containers.

After the hazardous waste is transferred to a new container, the damaged container would be cleaned thoroughly with hot water and detergent, rinsed with water, emptied (as needed) and disposed in a municipal land fill. The cleaning and rinse water are transferred to the facilities neutralization tank. A representative sample of the neutralization tank is analyzed daily for BOD_5 and pH. The neutralization tank discharge to the Barceloneta regional wastewater treatment plant.

Management in Container Storage Areas

Absorbent material will be available at container storage areas and the waste generating departments to clean up any minor spills which may occur during handling or sampling. Appropriate clothing will be worn at all times by facility personnel involved in container handling operations. Weekly routine inspections (see Section E) will be performed at the three container storage areas. Inspections primarily consist of examination of drum integrity and looking for leaks and spills. Each container in a storage area will be inspected for signs of leakage, corrosion, and structural defects on a weekly basis. Contents of drums found to be leaking will be transferred into an appropriate container, or

the leaking drum will be placed in an overpack drum. Drums which have leaked or are in poor condition will be taken out of service.

While stored in the three container storage areas all containers will be stored on pallets to prevent their contact with spilled or leaked material and to allow all drums to be moved safely with a fork truck. Pallets will typically contain four drums and will be stacked a maximum of three (3) pallets high. A minimum aisle space of 36 inches will be maintained at all times to allow for inspection and unobstructed movement of personnel (see Figures D-1 and D-2, and D-3).

Designated aisles will be indicated by painted or taped lines. Adequacy of container storage aisle space will be checked weekly, as specified in Section E, Table E-1,"Inspection Schedule."

g. Management of Spills in Containment Areas

All drums with free liquids will be handled and stored in a manner that will minimize spillage and leakage in the manufacturing and the three container storage areas. The container storage areas are inspected weekly for evidence of spills, leakage or liquid accumulation. Since the areas are roofed and diked, minimum quantities of precipitation accumulates in the containment sumps. Provided there is no evidence of spilled material in the area, this precipitation is transferred to the facility's wastewater neutralization tanks for subsequent discharge to the regional wastewater treatment facility.

The slope on the container storage areas bases will promote free drainage of liquids into the collection sumps. Spills would either be drummed or pumped into a tank truck depending upon the volume of the leak or spill. Spills that are placed in a tank truck will either be transferred to the hazardous waste storage tank or disposed off-site at an approved RCRA facility. The tanked spill would be transferred to the storage tank if adequate

capacity exists within the storage tank. In addition, the spill will also have to be compatible with any waste already present in the storage tank. If either of the previous two criteria are not met, the tanked spill would be disposed off-site at a RCRA facility. All drummed spills and those transferred to the hazardous waste storage tank will be incinerated on-site. A Wilden Model M-8 air-operated diaphram portable pump will be used to pump the spill to either drums or tanker truck.

Samples for analysis will be taken with a coliwasa sampler. If the origin of the leak or spill is unknown, or if the material will be shipped off-site the sample would be analyzed for parameters presented in Table C-4 and by EPA methods for the hazardous constituents that are used in the plant. Using these procedures, the presence and concentration of all of the Appendix VIII constituents (used in the plant) will be determined. A list of the analytical methods to determine hazardous constituents is as follows:

Material	Method of Analysis	Reference
Xylene	8020, 8240	SW-846
Toluene	8020, 8024	"
Methyl iodide	8250	"
Methanol	8010, 8240	"
Chloroform	8010, 8240	"
Saccharin	8250	"
Phenol	8040, 8250	"
Methylene chloride	8010, 8240	"

Spilled material from unknown origins will only be incinerated on-site if results of analysis reveals that the material is acceptable for on-site incineration. If the waste is not acceptable for on-site incineration it will be shipped to a permitted off site RCRA facility.

Spill material of known origin will be sampled and analyzed for parameters presented in Table C-4 after being transferred to the hazardous waste storage tank.

Residual wastes after a sump pump-out and small

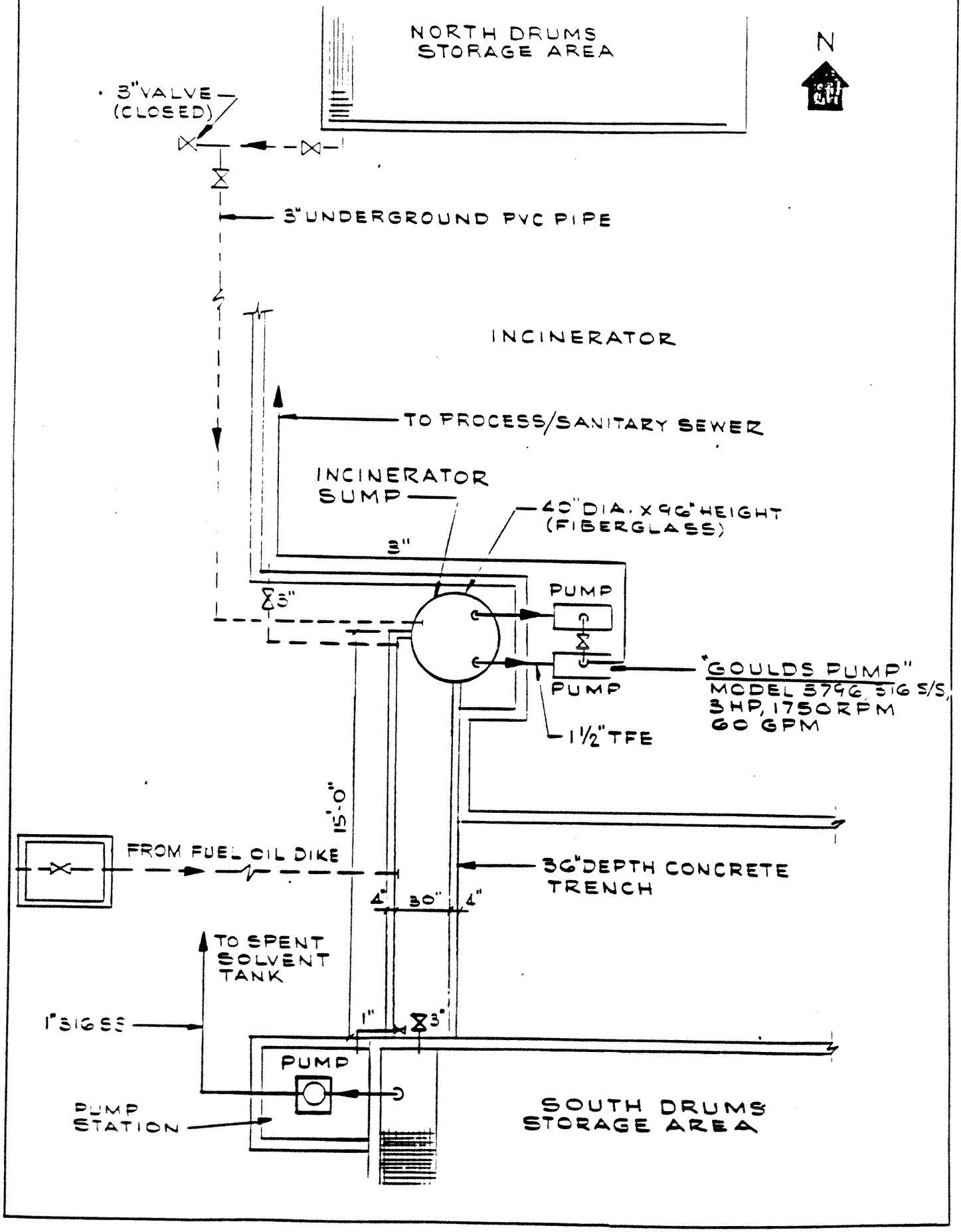
spills and leakages onto the storage area base will be removed with an absorbent material which will be placed into a drum and on site incineration or shipped to a permitted off-site RCRA hazardous waste management facility depending on the spilled material.

The spilled containment area will be washed. The first wash of the contaminated area would be contained and a representative sample for BOD_5 and pH analysis would be taken. The wash water would be transported to a neutralization tank provided that it would not result in non-compliance with the PRASA discharge permit. If the analysis indicate that transfer of the waste water would result in non-compliance, the wash water would be disposed in the same manner as the resulting spill. Analysis will be in accordance with "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, 1982. Quality assurance will be in accordance with "Handbook for Analytical Control in Water and Wastewater Laboratories," EPA-600/4-79-019, March 1979. This wash water would be discharged to the Barceloneta wastewater treatment plant in compliance with the PRASA discharge limits. The quality assurance for BOD_5 includes duplicates, blanks, seed dilutions, EPA check samples and winkler titrationto check the calibration of the dissolved oxygen equipment.

For the north and south container areas, subsequent wash waters would be discharged to the on-site process/sanitary sewer provided resulting concentrations will not exceed limits imposed by the PRASA for discharge of wastewater to the Barceloneta regional wastewater treatment plant. The north and south container storage areas sumps have pipes with valves that discharge to the incinerator sump which has a discharge pipe to the process/sanitary sewer (see Figure D-5). For the west container area, subsequent wash water that are in compliance with the PRASA facility agreement would be transported (drummed) to the neutralization tank since its sump does not have a direct discharge line to the facilities sewer or incinerator sump.

FIGURE D-5

STORAGE CONTAINER AREAS - SUMP DISCHARGE PIPING


NORTH DRUMS STORAGE AREA
N
3" VALVE (CLOSED)
3" UNDERGROUND PVC PIPE
INCINERATOR
TO PROCESS/SANITARY SEWER
INCINERATOR SUMP
40" DIA. X 96" HEIGHT (FIBERGLASS)
3"
3"
PUMP
PUMP
"GOULDS PUMP" MODEL 3796, 316 S/S, 3HP, 1750RPM 60 GPM
1½" TFE
15'-0"
FROM FUEL OIL DIKE
36" DEPTH CONCRETE TRENCH
4"
30"
4"
TO SPENT SOLVENT TANK
1" SIGSS
1"
3"
PUMP
PUMP STATION
SOUTH DRUMS STORAGE AREA

As previously described in Section D.1.f., only the south container storage has the capability of transferring drummed waste solvent to the hazardous waste storage tank. The drummed waste is transferred at the northwest corner of the storage area near the pump station which is bermed (see Figure D-2). Spills within this area would be small (less than 55-gallons). Absorbent material would be used to clean up any spill within the pump station. Wash water would be sampled and handled in the manner described above. As shown in Figure D-5, the pump station has a discharge line to the incinerator sump.

2. Tanks

a. Design Features

Process liquors which are hazardous wastes are stored in a nominal 5,000 gallon horizontal tank . This tank is used as a feed tank for the incinerator. This tank was fabricated in accordance with ASME Code Section VIII, 1972, Division 1. A fabrication drawing of the tank and the attached manufacturers report is presented as Figure D-6. The tank shell and heads are constructed of SA-240-316 stainless steel. The shell and heads are welded. The tank is 8 feet 6 inches in diameter by 11 feet 3 inches long. The tank is neither lined or coated.

The tank is supported on two saddles supported by a concrete foundation. A section of the foundation supporting the tank is presented as Figure D-7.

The tank was designed for liquid with a specific gravity of 1.0, the specific gravity of the mixed liquid waste generated is less than 1.0.

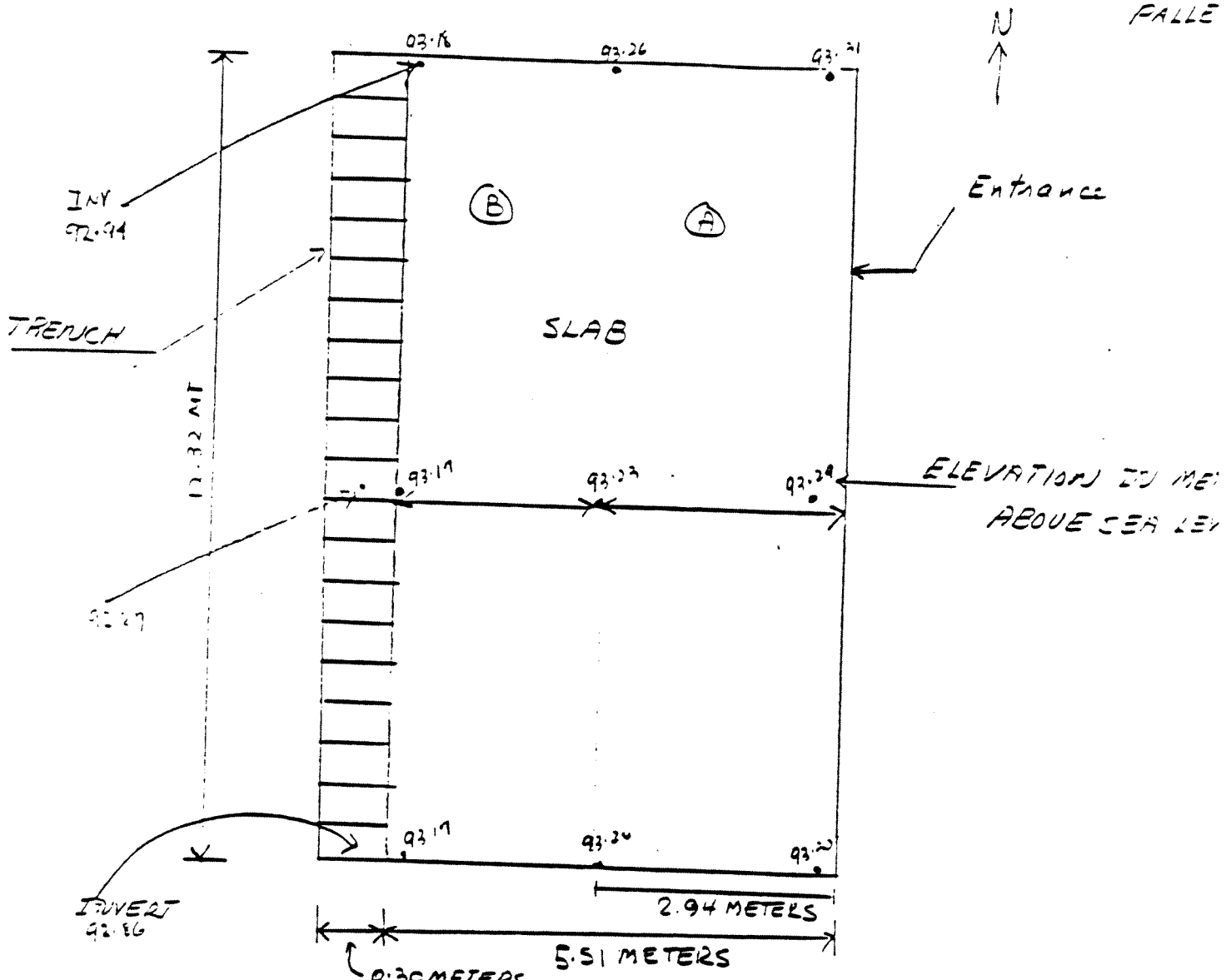
The tank was designed to withstand an internal pressure of 15 psig and was tested at 25 psig. The tank is vented and will be operated at atmospheric pressure.

Appendix D

Containment Calculations-
Container Storage Areas

PROJECT NO. 22 A 3D 6/19/9

CONTAINMENT VOLUME = VOLUME OF TRENCH + VOLUME ON SLAB − VOLUME OF FALLE



Volume of trench = Length x width x depth

$$V = \left[\frac{93.19+93.19+93.19}{3} - \left(\frac{92.90+92.97+92.94}{3}\right)\right] \times 0.30 \times 12.32$$

Volume on slab = Volume of Area (A) − Volume of Area (B) = ½ x L x W x d − (d x d)/2 x

$$V = \left[\left(\frac{93.30+93.29+93.31}{3}\right) - \left(\frac{93.24+93.23+93.26}{3}\right)\right] \times \frac{1}{2} \times 2.94 \times 12.32 -$$

$$\frac{1}{2} \times 2.37 \times 12.32 \left[\left(\frac{93.30+93.29+93.31}{3} - \frac{93.24+93.23+93.26}{3}\right) + \left(\frac{93.30+93.29+93.31}{3}\right) + \frac{\quad}{3}\right.$$

V = −.976 cubic meters x 264.2 = 7315 gallons

Actual = Containment volume − Volume occupied by pallet

Containment volume = 1315 gallons - 5 x 4 x 5.23 gallons/pallet

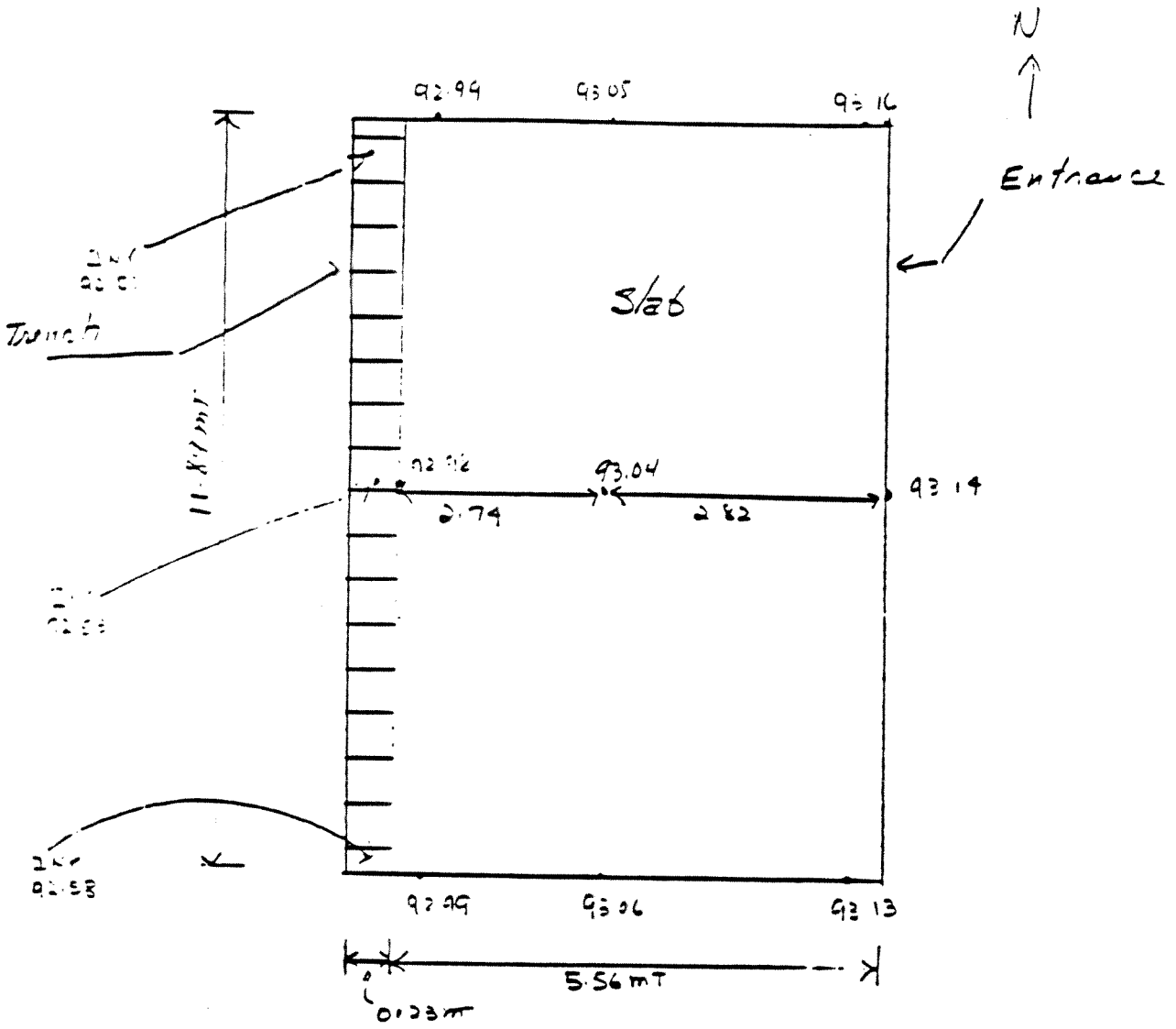
= 1210 gallons

Allowable storage volume = $\frac{1210}{0.1}$ = 12,100 gallons

Allowable number of drums = $\frac{12,100}{55}$ = 220 drums

Proposed Storage = 220 drums ok

Containment Volume = Volume of Trench + Volume in Storage Area − Pallet Volume



Volume [illegible]

$$V = [illegible](11.89)\left[\frac{(92.99 + 93.05 + 93.16)}{3} - \frac{(92.51 + 92.53 + 92.53)}{3}\right] + \frac{1}{2}(11.89)(-0.5)\left[\frac{(93.13 + 93.14 + 93.13)}{3} - \frac{(93.06 + 93.04 + 93.05)}{3}\right] + \left[\left(\frac{(93.13 + 93.14 + 93.16)}{3}\right) - \left(\frac{(93.05 + 93.04 + 93.05)}{3}\right)\right] + \left[\left(\frac{(92.99 + 93.05 + 93.16)}{3}\right) - \left(\frac{(92.96 + 93.04 + 93.14)}{3}\right)\right]\left[(2.74)(11.89)(0.5)\right]$$

$V = 1031.1544 - 4.072 = 6.957 \text{ meters}^3 \times 264.4 = 1813.$ [illegible]

Volume Displaced of pallets x 4 pallets/row x 23 rows/pallet =

Total Volume: 1813 − 5 x 4 x 3.23 = 1709 gallons

Allowable Number of Drums = 1709/[illegible] = 33 drums / 24 OK

PFIZER PHARMACEUTICAL, INC.
PART A JUN 1989-ADDITIONAL STORAGE CAPACITY
HAZARDOUS DRUM STORAGE
DIKE CAPACITY CALCULATION
West Storage Area

A- CATCH BASIN VOLUME CALCULATION: 1 cubic foot = 7.48 gal

LENGTH (FEET)	38
WIDTH (FEET)	4
HEIGHT (FEET)	3
VOLUME = L*W*H	= 3,411 GAL

B- STORAGE BASIN VOLUME CALCULATION:

LENGTH (FEET)	38
WIDTH (FEET)	40
HEIGHT (FEET)	0.42 SLOPE = 1/8" BY FOOT
VOLUME = 1/2*L*W*H	= 2,311 GAL

C- TOTAL DIKE VOLUME (A+B) = 5,780 GAL

D- STORED PALLET VOLUME 45 PALLETS------PER LEVEL:

LENGTH (FEET)	4
WIDTH (FEET)	4
HEIGHT (FEET)	0.17
VOLUME = 1/2*L*W*H	= 898 GAL

E- VOLUME OF DIVISION WALL

LENGTH (FEET)	40
WIDTH (FEET)	0.5
HEIGHT (FEET)	0.42 SLOPE = 1/8" BY FOOT
VOLUME = 1/2*L*W*H	= 31 GAL

NET DIKE CAPACITY (C-D-E) 4,851 GAL

TOTAL STORAGE CAPACITY = # PALLETS*4 DRUMS/PALLET*55-GAL/DRUM = 29,700 GAL
——— 3 LEVEL OF PALLETS ———
45 PALLETS------PER LEVEL

DIKE % OF TOTAL STORAGE CAPACITY 16%

Appendix D-2

Epoxy Coating Information
for Containment Areas

atlas

DATA SHEET

NO. 7-67 PI (5/89)

REZKLAD® HI-BUILD 100

DESCRIPTION AND USES

REZKLAD HI-BUILD 100 is a versatile premium corrosion resistant, epoxy novolac coating designed to provide economical protection for dikes and storage areas exposed to a variety of solvents.

REZKLAD HI-BUILD 100 is resistant to Ketones, alcohols, aromatic and chlorinated solvents such as Methylene Chloride. At room temperature it is also resistant to many organic and inorganic acids including Sulfuric Acid to 66%. It is recommended for protection against corrosive fumes, splash and intermittent immersion service.

REZKLAD HI-BUILD 100 is easily applied by brush, roller or spray on concrete, wood and most metals.

A slip-resistant finish is obtained by broadcasting an abrasive grit between the final two coats. REZKLAD HI-BUILD 100 is normally applied 6-8 mils per coat.

PHYSICAL PROPERTIES

Property	Typical Value
Shore Hardness D-2	80-85
Temperature Resistance	
Constant:	150°F (66°C)
Intermittent:	210°F (99°C)
Abrasion Resistance	
Taber CS-17 Wheel	Taber Wear Index
1,000 Gr. Wt. 1,000 Cycles (Smooth finish)	100 mg loss
Standard Colors	White, Gray, Red, Tan
% Solids	84 - 88

CHEMICAL RESISTANCE

REZKLAD HI-BUILD 100 is resistant to many acids, alkalies, salts and solvents at varying concentrations. See attached corrosion chart for resistance to specific chemicals. REZKLAD HI-BUILD 100 is suitable for continual exposure to 150°F (66°C) and intermittent exposure to 210°F (99°C). Exposure to strong acids will discolor the coating; however, it will not affect the performance. Discolored areas can be cleaned, sanded and recoated.

SURFACE PREPARATION

For details on preparing surfaces to receive REZKLAD HI-BUILD 100 refer to ATLAS Data Sheet PS-30, "Surface Preparation."

MIXING AND APPLICATION

REZKLAD HI-BUILD 100 is applied as a minimum three-coat system for corrosion resistant service. Alternating color coats are recommended to insure total coverage.

The first coat of REZKLAD HI-BUILD 100 is used as a primer coat by diluting and thoroughly mixing one (1) pint of REZKLAD HI-BUILD 100 Thinner per gallon of REZKLAD HI-BUILD 100 Resin. The first coat should be roll or brush applied. For a three-coat system, if a slip-resistant finish is required, seed the second coat of REZKLAD HI-BUILD 100 with abrasive grit, allow to set, then remove excess grit and apply the third coat. Recoating can take place when the coating is firm enough to support foot traffic, usually 6-8 hours at 75°F (24°C). If more than 16 hours elapse between coats, it is necessary to lightly sand the surface to obtain intercoat adhesion.

Temperature of the substrate must be between 65-85°F (18-29°C). When applying REZKLAD HI-BUILD 100 at 65°F (18°C), store material for at least 24 hours at 75°F (24°C) or higher before using. Do not apply when room temperature is below 65°F (18°C) or above 100°F (38°C). Below 65°F (18°C) proper cure will not take place. Above 100°F (38°C) the working life will be too short. For best results, apply when the relative humidity is below 75% and the surface moisture is less than 8%.

REZKLAD HI-BUILD 100

Thoroughly stir the contents of each container before using. Pour the Resin, 9 lb. 4 oz. (4.20 kg), into a clean mixing container. For the first coat, add 1 pint REZKLAD HI-BUILD 100 Thinner and mix thoroughly. Add the 1 lb. 10 oz. (.74 kg) of Hardener and mix thoroughly for two minutes. When using 5 gallon units, it is recommended that batch sizes be limited to a quantity that can be applied in 30 minutes. This will vary with crew size, substrate, material and ambient temperatures. REZKLAD HI-BUILD 100 has a working life of approximately 30-40 minutes at 75°F (24°C). For smaller batches, mix 74 parts Resin to 13 parts Hardener by weight. Brush or roller apply the first coat.

On horizontal surfaces, a properly applied coat will result in a wet film thickness of 6-8 mils. On vertical surfaces, the film thickness will be 3-5 mils. For a three-coat system where slip resistance is required, seed the second coat with ATLAS Aggregate No. 2 or No. 8 and allow to set. Coverage is approximately ¼ lb. of aggregate per square foot. Use Aggregate No. 2 to achieve a coarse slip resistant finish and Aggregate No. 8 for a fine slip resistant finish. Allow each coat to dry, usually a minimum of 8 hours at 75°F (24°C). Remove excess grit before applying the third coat.

CURING

Keep REZKLAD HI-BUILD 100 free of traffic, or other contaminants until hard. The rate of cure is dependent upon the room temperature and the thickness of the material. At 75°F (24°C), REZKLAD HI-BUILD 100 will be hard enough to bear foot traffic in 6-8 hours. Maximum chemical resistance and physical properties will be attained after seven (7) days.

CLEANING OF EQUIPMENT

Use Methyl Ethyl Ketone, 1,1,1, Trichloroethane or Xylene for cleaning tools and equipment before materials begin to harden. Follow manufacturer's recommended safety precautions when using these solvents.

atlas Atlas Minerals & Chemicals, Inc.
Pennington Road, Mertztown, Pennsylvania 19560
Telephone 215-682-7771

PACKAGING AND COVERAGE
REZKLAD HI-BUILD 100

One 10 lb. 5 oz. Unit Contains:
- One-1 lb. 10 oz. (.74 kg) can Hardener
- One-9 lb. 4 oz. (4.20 kg) can Resin

COVERAGE: Approximately 165 sq. ft. (15.3 sq.m)/coat/Unit at a thickness of 7 mils wet.

Approximately 120 sq.ft. (11.1 sq.m)/coat/Unit at a thickness of 7 mils wet as a sealer coat over grit.

One-54 lb. 1 oz. Unit Contains:
- One-8 lb. 1 oz. (3.66 kg) can Hardener
- One-46 lb. (20.86 kg) pail Resin

COVERAGE: Approximately 875 sq.ft/coat/Unit at a thickness of 7 mils wet.

Approximately 620 sq.ft./coat/Unit at a thickness of 7 mils wet as sealer coat over grit.

ATLAS Aggregates:

Aggregate No. 2 - 100 lb. (45.4 kg)/bag
Aggregate No. 6 - 100 lb. (45.4 kg)/bag
COVERAGE: Approximately .25 lbs. per sq.ft. (1.22 kg/sq.m.)

REZKLAD HI-BUILD 100 THINNER

One-1 Gallon Can
- One-5 Gallon Pail

COLOR
REZKLAD HI-BUILD 100 System is available in white, gray or reddish tan. Special colors are available with minimum order of 100 gallons.

STORAGE LIFE
Store in cool dry place, keep out of direct sunlight. In unopened original containers, REZKLAD HI-BUILD 100 components can be stored at least one year without deterioration.

MAINTENANCE
Should the coating be damaged in any way, it can be repaired. Remove back to solidly bonded coating. Prepare the exposed surfaces and apply REZKLAD HI-BUILD 100 as described for new work.

TECHNICAL SERVICES
ATLAS maintains a staff of Technical Service Representatives who are available to assist you with the use of ATLAS products. In the event of any difficulties on any job with the use of ATLAS materials, the job should be stopped immediately and ATLAS Technical Service Department consulted for assistance.

WARRANTY
ATLAS warrants that its products will be free from defects in workmanship and materials under normal use for a period of one (1) year from the date of shipment by ATLAS (provided the products are installed before the expiration of the shelf life). THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR THE PURPOSE FOR THIS PRODUCT WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ATLAS LIABILITY FOR BREACH OF THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT (BUT NOT INCLUDING REMOVAL OF THE DEFECTIVE PRODUCT OR INSTALLATION OF REPLACEMENT PRODUCTS), AND ATLAS SHALL NOT BE LIABLE FOR ANY INCIDENTAL AND CONSEQUENTIAL DAMAGES FOR BREACH OF THIS WARRANTY.

PRECAUTIONS
REZKLAD HI-BUILD 100, REZKLAD HI-BUILD 100 THINNER, ATLAS Aggregates and the Cleaning Solvents are for Industrial Use Only. They contain materials that present handling and potential health hazards. Consult Material Safety Data Sheets and the container labels for complete precautionary information before use.

CHEMICAL RESISTANCE OF REZKLAD HI-BUILD 100

7-67 PI (5/89)

	R.T.	150°F
Acetic Acid, below 5%	R	R
Acetic Acid, 5% to 10%	R	R
Acetic Acid, 10% to 50%	R	C
Acetone	R	
Alum or Aluminum Sulfate	R	R
Ammonium Chloride, Nitrate, Sulfate, 50%	R	R
Ammonium Hydroxide, 10%	R	R
Ammonium Hydroxide, 30%	R	R
Aniline	C	R
Aqua Regia	R	R
Barium Chloride Sulfate	R	R
Beer	R	R
Benzene	R	
Benzene Sulfonic Acid, 10%	R	R
Benzoic Acid	R	R
Black Liquor	R	R
Bleaching Liquor below 2%	R	C
Bleaching Liquor, Concc.	C	R
Boric Acid	R	R
Butyl Acetate	R	C
Butyl Alcohol	R	C
Butyric Acid	C	R
Calcium Chloride, Nitrate, Sulfate	R	R
Calcium Hydroxide	R	R
Calcium Hypochlorite	R	C
Chlorine, Dry	C	R
Chlorine, Wet	C	C
Chlorine Water	R	C
Chloroacetic Acid, below 10%	R	C
Chloroform	R	C
Chromic Acid, below 5%	C	R
Chromic Acid, 5% to 10%	C	R
Citric Acid 10%	R	R
Copper Chloride, Nitrate, Sulfate	R	R
Ether	R	
Ethyl Acetate	R	C
Ethyl Alcohol	R	C
Ethylene Dichloride	R	C
Ethylene Glycol	R	R
Fatty Acids	R	C
Ferric Chloride, Nitrate, Sulfate	R	R
Fluosilicic Acid	A	A
Formaldehyde, below 10%	R	R
Formic Acid 10%	C	C
Grape Juice	R	R
Hydrobromic Acid 20%	R	R
Hydrochloric Acid to 20%	R	R
Hydrochloric Acid 20% to 36%	R	C

	R.T.	150°F
Hydrofluoric Acid to 20%	A	A
Hydrofluoric Acid 20% to 70%	A	NR
Hydrogen Peroxide	B	
Hypochlorous Acid to 5%	R	C
Jet Fuel	A	C
Kerosene	R	R
Lactic Acid below 5%	A	R
Lactic Acid 5% to 10%	R	R
Lactic Acid above 10%	R	C
Lard	R	C
Lux Liquid	R	R
Magnesium Chloride, Nitrate, Sulfate	R	R
Maleic Acid	R	C
Methyl Alcohol	R	C
Methylene Chloride	R	C
Methy Ethyl Ketone	R	
Milk	R	R
Mineral Oil	R	R
Nickel Chloride, Nitrate, Sulfate	R	R
Nitric Acid below 5%	R	R
Nitric Acid 5% to 10%	R	C
Oils, Vegetable	R	C
Oleic Acid	R	C
Oxalic Acid	R	C
Perchloroethylene	R	C
Petroleum	R	R
Phenol below 5%	R	
Phosphoric Acid to 25%	R	R
Phosphoric Acid 25% to 50%	R	C
Phosphoric Acid above 50%	R	C
Picric Acid to 5%	R	C
Potassium Chloride, Nitrate, Sulfate	R	R
Potassium Hydroxide below 25%	R	R
Potassium Hydroxide 25% to 50%	R	C
Sodium bicarbonate, Carbonate	R	R
Sodium Chloride, Nitrate, Phosphate	R	R
Sodium Sulfate, Sulfide	R	R
Sodium Hydroxide to 25%	R	
Sodium Hydroxide 25% to 50%	R	C
Sodium Hypochlorite below 6%	R	C
Sodium Hypochlorite 10%	C	R
Stannic Chloride	R	C
Stearic acid	R	C
Sugar, Salt Solution	R	R
Sulfuric Acid below 40%	R	R
Sulfuric Acid 50%	R	R
Sulfuric Acid above 50%	R	C
Sulfurous Acid below 10%	R	R

	R.T.	150°F
Toluene	R	C
Toluene Sulfonic Acid	R	C
Tomato Juice	R	R
Trichloroethylene	R	C
Trisodium Phosphate	R	R
Turpentine	R	C
Urea to 20%	R	R
Urine	R	
Vegetable Oil	R	C
Vinegar	R	R
Water, Fresh	R	R
Water, Distilled	R	R
Water and Sewage	R	R
Xylene	R	C
Zinc Chloride, Nitrate, Sulfate	R	R

NOTE: The information presented in the chemical resistance tables is based on judgements derived from laboratory testing and field service performance. The tables have been prepared as a guide to performance. No guarantee of results is made or implied and no liability in connection with this information is assumed. In actual service floors protected with REZKLAD HI-BUILD 100 are subjected to splash and spillage, as well as dilution effects of wash water, mixing with other solutions, wetting and drying cycles, temperature cycling and cleaning procedures.

The information presented herein should be supplemented by in-service testing. The data furnished in the tables may be revised on the basis of further testing.

R-Recommended

NR-Not Recommended

C-Conditional. May be serviceable if the contaminant is immediately removed or washed off the surface.

A-Silica Filler will be attached. Sealing the surface may prolong the life. Carbon filled REZKLAD is recommended.

ATTACHMENT H

CONTENT:

- Location of Hazardous Waste Tank Systems
- Design of Existing Tank Systems
- Tank Management Practices
- Secondary Containment System

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

Tanks

a. Design Features

Process liquors which are hazardous wastes are stored in a nominal 5,000 gallon horizontal tank . This tank is used as a feed tank for the incinerator. This tank was fabricated in accordance with ASME Code Section VIII, 1972, Division 1. A fabrication drawing of the tank and the attached manufacturers report is presented as Figure D-6. The tank shell and heads are constructed of SA-240-316 stainless steel. The shell and heads are welded. The tank is 8 feet 6 inches in diameter by 11 feet 3 inches long. The tank is neither lined or coated.

The tank is supported on two saddles supported by a concrete foundation. A section of the foundation supporting the tank is presented as Figure D-7.

The tank was designed for liquid with a specific gravity of 1.0, the specific gravity of the mixed liquid waste generated is less than 1.0.

The tank was designed to withstand an internal pressure of 15 psig and was tested at 25 psig. The tank is vented and will be operated at atmospheric pressure.

b. Operating Procedures

General

A schematic drawing of the storage tank which shows the instrumentation and controls is presented as Figure D-8. As indicated in Figure D-8, waste solvents are transferred to the hazardous waste storage tank from either the south container storage area or the organic synthesis tank farm area. Waste solvents from the hazardous waste storage tank are fed to the incinerator. The operators will also be required to compare the waste analysis of the material in the tank with the waste characteristics of the material to be transferred to insure that the wastes are compatible.

Transfer to the Hazardous Waste Storage Tank

Process liquors are transferred from the containers in the south container storage area to the hazardous waste storage tank via an above

ground 1-inch, Schedule 10, 316 stainless steel pipe. Waste solvents from solvent recovery operations are also transferred from the organic synthesis tank farm area directly to the hazardous waste storage tank via an above ground 2-inch, Schedule 10, 316 stainless steel piping. Nitrogen is used to displace residual solvent waste in the pipeline from the organic synthesis area.

The piping from the organic synthesis tank farm area and the south container area are joined into a common 2-inch, Schedule 40, 316 stainless steel pipe in the vicinity of the waste storage tank. This pipe is equipped with an automatic shut-off valve which is activated by a Delta Model 103 capacitance probe, located in the tank, when the volume of the tank reaches approximately 4800 gallons. When the automatic shut-off valve is activated an alarm system is sounded.

The storage tank is also equipped with a stainless steel, teflon insert level indicator gauge made with transparent plexiglass. This sight glass will be calibrated. A stick gauge opening is also provided on the tank.

Prior to transfer the operator checks the volume of the hazardous waste storage tank with a gauge stick. A volume calibration chart is used to determine the volume based on the gauge stick reading. The gauge stick reading is also compared to the sight glass level gauge reading to ensure that the level gauge indicator is operating properly.

Transfer operations from the organic synthesis area to the hazardous storage tank involve an operator located at both the transfer pump in the organic synthesis tank farm area and an operator located near the hazardous waste storage tank. Prior to the transfer, the operator in the organic synthesis area checks the volume of the tank from which the material will be transferred. The operators communicate via walkie-talkie. The operator near the hazardous waste storage tank indicates when transfer operations are to commence.

Solvent is pumped with a Durco Mark II pump at 90 gpm. This type of pump is equipped on each tank located in the Organic Synthesis Tank Farm. The operator near the hazardous waste storage tank monitors the filling of the tank using the level indicator site glass. The operator in this area

communicates with the pump operator during the course of the transfer and directs the pump operator when to terminate transfer operations. The automatic shut-off valve and alarm system acts as backup device to prevent tank overfill in the event of an operator error or communication problem.

Transfer operations from the south container storage area are conducted by one operator since the container area is only sixty feet from the hazardous waste storage tank. Transfers from this south container area to the hazardous waste storage tank are conducted using an air operated diaphragm pump (Wilden Model M-8). The waste is transferred at approximately 10 gpm. The drums will be kept within the storage area during the transfer operations. A flexible stainless steel hose is used as the suction line. The container and hazardous waste storage tank is properly grounded prior to transfer.

After the transfer of each 55-gallon drum the operator will check the hazardous waste storage tank level indicator gauge to determine if sufficient capacity remains in the tank to transfer the next drum. Again, in the event of operator error the automatic shut-off valve and alarm system provide additional tank overfill protection.

Transfer From The Hazardous Waste Storage Tank to Incinerator

Periodically, the incinerator is started up to incinerate waste solvents and filter cakes. At that time the agitator that is mounted on the tank is started up to blend the tank contents to provide uniform feed to the incinerator. The agitator is run for at least 15 minutes prior to transfer of material to the incinerator, and remains running during the transfer to insure a uniform feed. A small positive displacement pump (Viking Model UL FT009191) is used to feed solvent to the incinerator through a one-half inch Schedule 40, 316 stainless steel feed line. There is a solenoid valve on the solvent feed line at the incinerator which opens and closes depending upon the temperature in the incinerator.

When the solenoid valve closes due to high temperatures in the secondary chamber, the pressure in the pipe line increases opening the back pressure valve allowing solvent to recycle

back to the solvent storage tank. Note that the pump also has an internal relief valve to protect the pump and piping from over pressurization. A third back pressure valve is provided to prevent over pressurization in case the pump is started while the valve downstream from the positive displacement pump is closed. All pressure relief valves are set at 90 psig. The stainless steel piping is rated at 150 psig.

This piping scheme is used because the burners operate within a relatively narrow pressure range. Note that there is a filtration system downstream from the positive displacement pump to ensure that fine solids are removed prior to burners.

A differential pressure indicator will be provided across the filter to indicate when the filters should be replaced. Pressure gauges are provided on the suction and discharge. The used filters are incinerator on site.

A temperature gauge is also provided to indicate the temperature of the tank contents. Sample tapes are provided which allow the operator to collect samples from the tank. A drain port and valve are provided to facilitate emptying the tank.

c. Tank Corrosion and Erosion

Corrosion rate data was obtained for most of the solvents used in the plant from the Fifth Edition of the Corrosion Data Survey published by the National Association of Corrosion Engineers. Manufacturers were contacted for about solvents for which there were no published data. The corrosion rate data are presented in Table D-1. Excerpts of the publication are presented in Appendix F.

TABLE D-1
CORROSION RATES [1]
OF
316SS

Acetone	Less than 0.002 inches/yr.
Chloroform	" 0.002 "
Dimethyl formamide	" 0.002 "
Ethanol	" 0.020 "
Ethyl acetate	" 0.002 "
Heptane	" 0.002 "
Isopropanol	" 0.002 "
Methylene chloride	" 0.020 "
Methyl iodide	" 0.002 "
Methanol	" 0.002 "
Phenol	" 0.020 "
Toluene	" 0.002 "
Xylene	" 0.020 "
Tetrahydrofuran	NO EFFECT [2]
Dimethyl acetamine	NO EFFECT [2]
Isoamyl alcohol	NO EFFECT [2]

(1) Corrosion Data Survey, 5th Edition, National Association of Corrosion Engineers.

(2) Based upon telephone contact with manufacturer.

Erosion is not a problem since the waste solvents do not contain solid matter which could erode the tank. Additionally, there is a filter on the discharge of the pump used to transfer solvent from the south container storage area to the hazardous waste storage tank and on discharge of the incinerator feed pump.

The recommended minimum metal thickness for a horizontal stainless steel tank with a maximum diameter of 144 inches per Underwriters Laboratories Publication, UL 142, July, 1984 is 0.158 inches. As indicated in the tank fabrication drawing, Figure D-6, the nominal thickness of the tank is 0.188 inches. The corrosion allowance for the storage tank which has a thickness of 0.188 inches is 0.0295 inches or an allowable shell thickness of 0.158 inches (0.188 -

0.0245 inches).

The thickness of the shell is measured annually to ensure that the actual thickness is greater than the minimum allowable. Shell thickness is measured using a Kraut Kramer Sonic Thickness Tester Model D-M-2-LCD with Model X20378A Probe. The shell is mapped in a matrix of cells with appropriate reference coordinates. Each cell is tested for shell thickness using the sonic tester. The results are recorded and compared to the minimum allowable corrosion tolerance. Results of tank shell thickness testing conducted in December 1988 reveal that the shell thickness ranges from 0.255 to 0.274 inches. Testing conducted in September of 1989 confirmed this range of thickness. These results revealed that shell thickness is greater than the nominal design thickness and that the tank has not exhibited appreciable corrosion. These results are maintained on file as part of the facilities documentation of the tank system's integrity.

Since the tank is located in a secondary containment area that will meet the requirements of Section 264.193, an assessment of the tank's integrity by an independent registered engineer is not required.

d. Tank Secondary Containment and Leak Detection

The hazardous waste storage tank is located within a concrete lined secondary containment system that contains two number six fuel oil tanks, a kerosene tank and a caustic storage tank (for incineration use). All of these materials are compatible (Reference: Toxic Substance Storage Tank Containment, NOYES Publication, 1685, Appendix A and B).

All of the tanks are supported on their own foundations. The containment structure is constructed of reinforced concrete. The structure includes a 4" concrete slab with 6" x 6" wire mesh. The containment system is free of cracks and gaps.

The containment system will be upgraded by constructing a new concrete containment system around the hazardous waste storage tank. This will in effect create two separate containment systems, one for the hazardous waste stofage tank and one for the tanks storing non-hazardous waste material. The hazardous waste secondary

containment system will be designed and installed to provide sufficient strength and thickness to prevent failure from pressure gradients (including static head and external hydrological forces), settlement, compression, or uplift. The design and installation will also include the following:

1. Capacity to contain 100 percent of the volume of the hazardous waste storage tank plus the precipitation from a twenty five (25) year, twenty four (24) hour rain fall (9 inches).

2. Coating of the interior walls and floor of the containment structure with Atlas Rezklad Hi-Build 100 or equivalent, or prevent migration of waste into the concrete. All construction joints will be packed and sealed with chemical resistant materials.

3. A sloped floor to a collection system to drain and remove liquids resulting from leaks, spills, and precipitation.

The upgraded containment system will be inspected daily for evidence of cracks and gaps. In the event that cracks or gaps are discovered they will be patched with cement and covered with Atlas Rezklad Hi-Build 100 coating, or equivalent. Repairs to the damage coating will be initiated immediately. The source of the damage will be determined and the repairs made to the structure will be recorded and maintained on file.

The system will be inspected on a daily basis for the presence of leaked or spill material or accumulated precipitation and if present procedures will be implemented to remove the material within twenty hours of detection. The discharge valve for the containment system will remain closed until such time that collected liquids are removed from the containment system.

If inspection reveals that the material is solely accumulated precipitation it will be pumped to the facility's wastewater neutralization tank. Wastewater from this tank is analyzed for BOD_5 and pH to ensure compliance with facility's discharge agreement with the Barceloneta regional wastewater treatment plant.

In the event of a spill or leak from the tank system, or the secondary containment system, or if either system becomes unfit for continued use, the facility will remove the system from service

immediately and satisfy the requirements of 40 CFR 264.296(a) through (f) and perform the following:

1. Immediately stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

2. Remove waste and accumulated precipitation from the system within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the facility finds that it will be impossible to meet this time period, the facility will notify the Regional Administrator and demonstrate that the longer time period is required. Leaks and spills from the hazardous waste storage tank will be pumped into either drums or a tank truck. The contained waste will either be processed in the incinerator or shipped to a permitted RCRA hazardous waste management facility. Sampling and analysis of this material will follow the procedures outlined in Section D.1.g. Washwaters will be discharged into the facility's sewer for subsequent discharge to the Barceloneta regional wastewater treatment plant provided concentrations of wastes will not result in an exceedance of the facility's discharge agreement.

3. Contain visible releases to the environment. The facility will immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water. All releases will be subject to reporting under 40 CFR Part 302. The facility will comply with all notification and reporting requirements set forth in 40 CFR 264.196(d).

4. For a release caused by a spill that has not damaged the integrity of the system, the facility will remove the released waste and make any necessary repairs before returning the tank system to service.

5. For a release caused by a leak from the hazardous waste storage system tank system to the secondary containment system, the facility will repair the primary hazardous waste storage system prior to returning it to

service.

6. For a release to the environment caused by a leak from the aboveground portion of the tank system or ancillary equipment that does not have secondary containment and can be visually inspected, the facility will repair the tank system (and/or ancillary equipment before returning it to service).

7. If the facility replaces a component of the tank system to eliminate the leak, that component will satisfy the requirements for new tank systems or components in 40 CFR 264.192 and 264.193.

8. For all major repairs to eliminate leaks or restore the integrity of the tank system, the facility will obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault. This certification will be submitted to the Regional Administrator within 30 days after returning the tank to use.

e. Leak Detection For Piping and Ancillary Equipment

All hazardous waste piping systems and ancillary equipment are above ground. They are inspected daily for leaks in accordance with the procedures described in Section E. All above ground piping and ancillary equipment is visible from the ground, nearby platforms and/or walkways. Since the piping system is equipped with an automatic shut-off valve secondary containment of the piping systems and ancillary equipment is not required. Flanges on all the hazardous waste above ground piping are welded.

FIGURE D-6

TANK FABRICATION DRAWING

FIGURE D-7

HAZARDOUS WASTE STORAGE TANK FOUNDATION DRAWING

Appendix E
Tank Farm Containment
Volumn Calculations

SEE ATTACHED FIGURE FOR PLAN VIEW & DIMENSIONS
DEPTH IN DIKED AREA IS 3.5 feet
VOLUME = VOLUME OF A + VOLUME OF B

$$\text{VOLUME OF A} = \frac{\left(\left(\frac{78.75+77.33}{2}\right)\times\left(\frac{56.0+57}{2}\right)\right)+\left(97.166\times 76.33\right)}{2}\times 3$$

$$= 20{,}690 \text{ ft}^3$$

Volume of B = 12.6 meters × 3.28 × 24.2 × 3.28 × 3.5'

= 11,480

Total Volume = A + B = 32,170 ft³ = 240,630 gallons
Diked Area

Volume of the largest Tank = 160,000 gallons

Volume of other tanks in diked Area -

Solvent tank = 5,000 gallons

Kerosene tank = 10,000

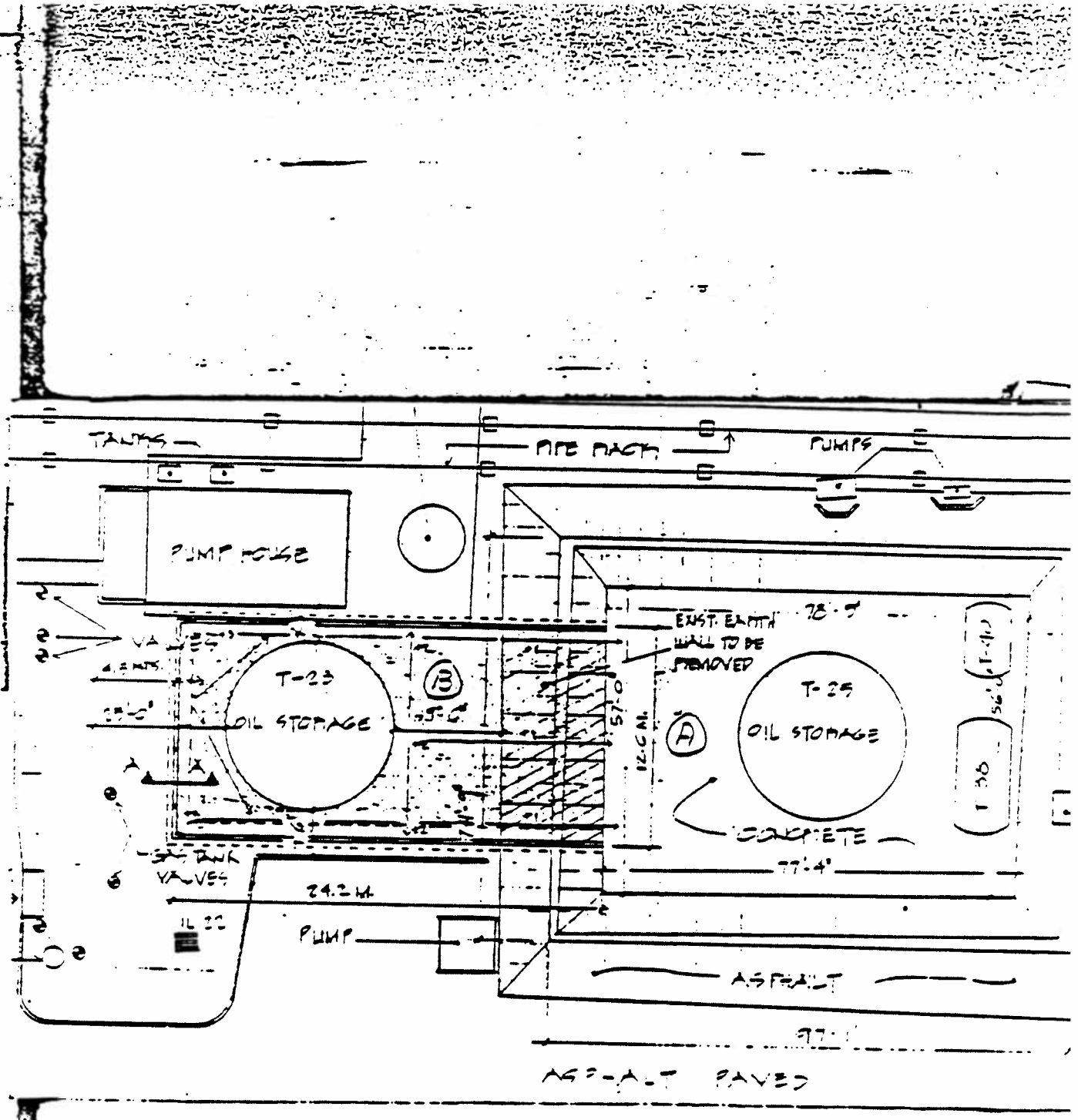
Caustic tank = 2,000

Other fuel oil tank at 3.5 feet depth = (30'×30')(785)×3...

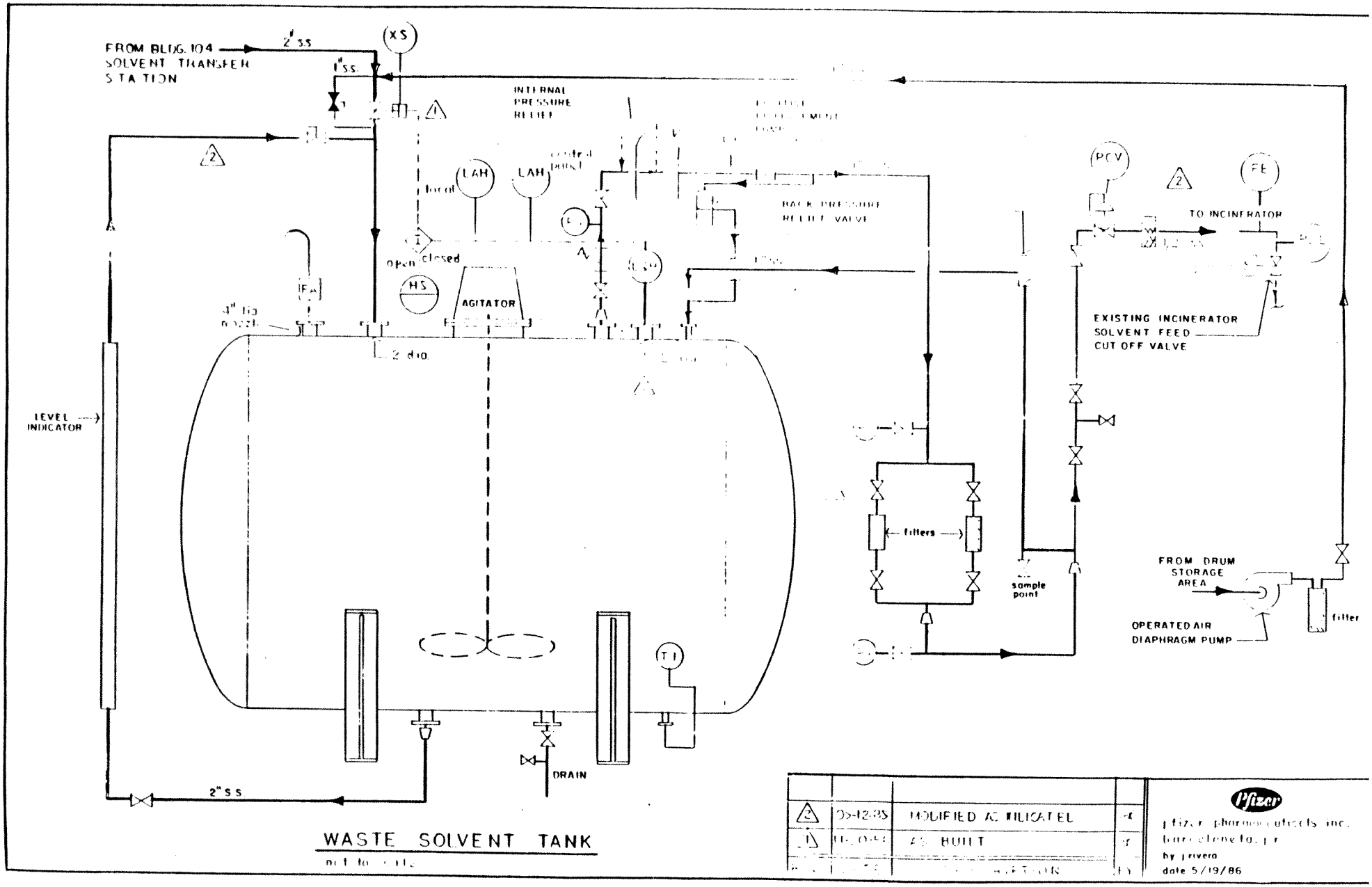
= 18,500

Volume for containment = 240,630 − 5,000 − 10,000 − 2,000 − 18,500

= 205,130 gallons > 160,000 OK



Plan View of Tank Farm Dike



WASTE SOLVENT TANK

not to scale

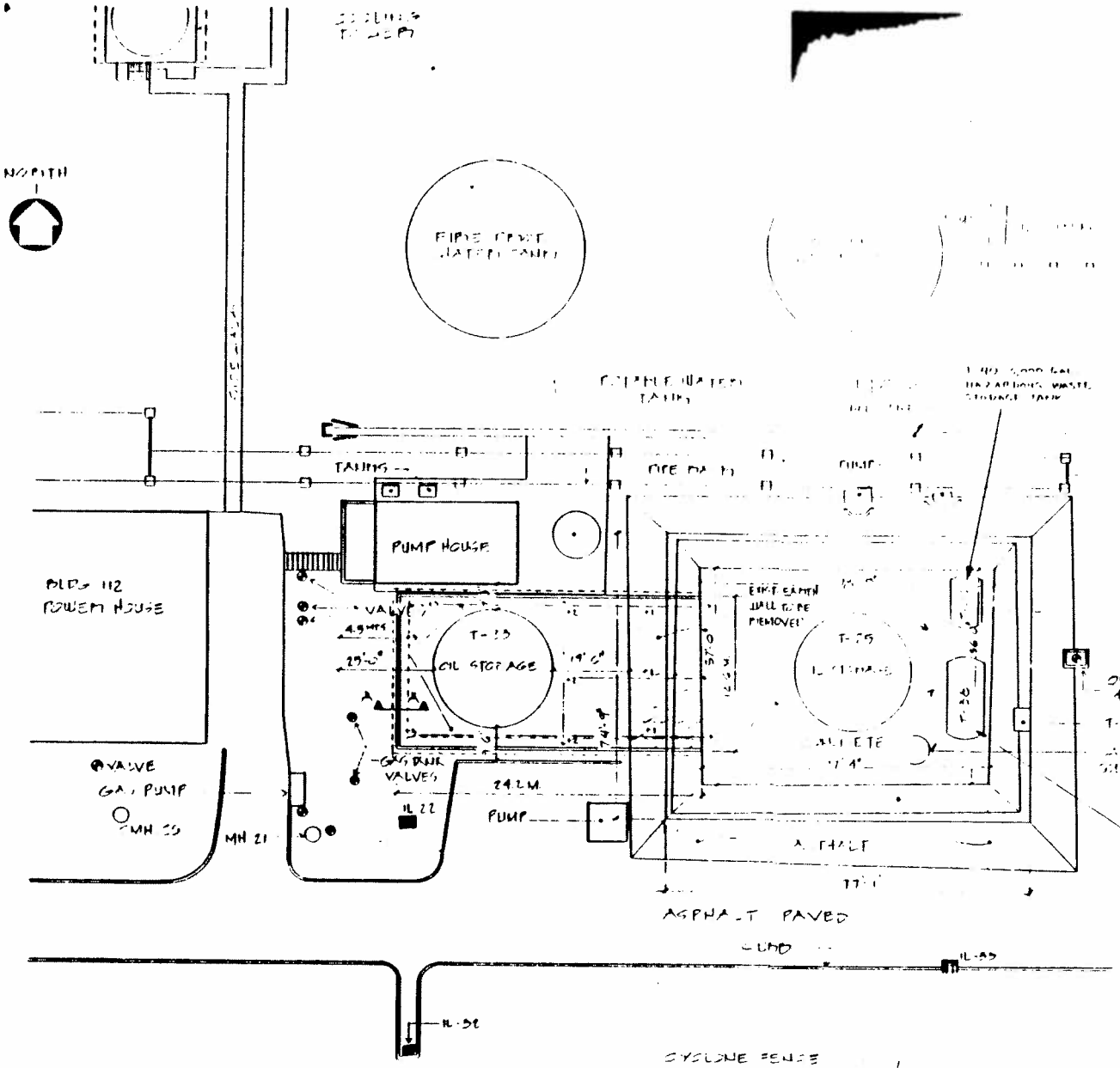
2	05-12-86	MODIFIED AS INDICATED	K
1	11-05-85	AS BUILT	F
		[illegible]	[illegible]

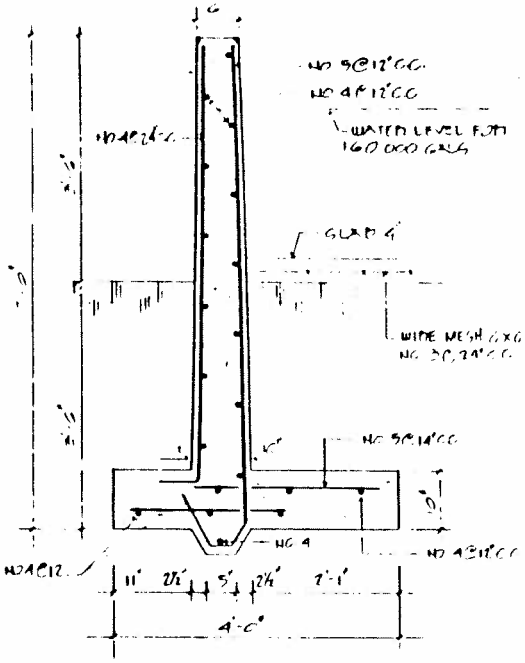
Pfizer

pfizer pharmaceuticals inc.
barceloneta, p.r.

by j.rivera

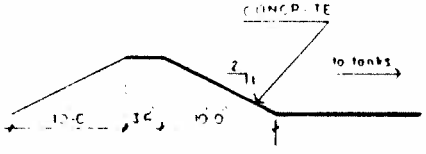
date 5/19/86



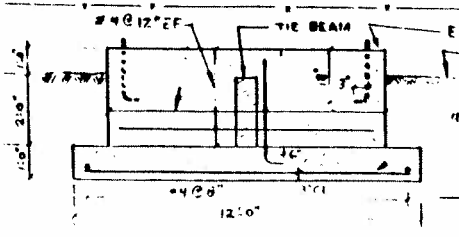


DETAIL A-A SC 3/4"-1'-0"

NOTE: CONCRETE JOINTS BETWEEN SLABS AT BETWEEN SLAB AND VERTICAL SURFACES BE MOLDED EXPANSION JOINT FILL (ASTM D 994) STRIPS INSTALLED THE LENGTH OF THE SLAB EXCEPT 3/4" TOP OF THE SLAB AND FILLED WI SEALER



FUEL TANK DIKE IMPERMETIZATION DETAIL
not to scale



T-40 & T-38
FOUNDATION DTLS.
ART TO SCALE

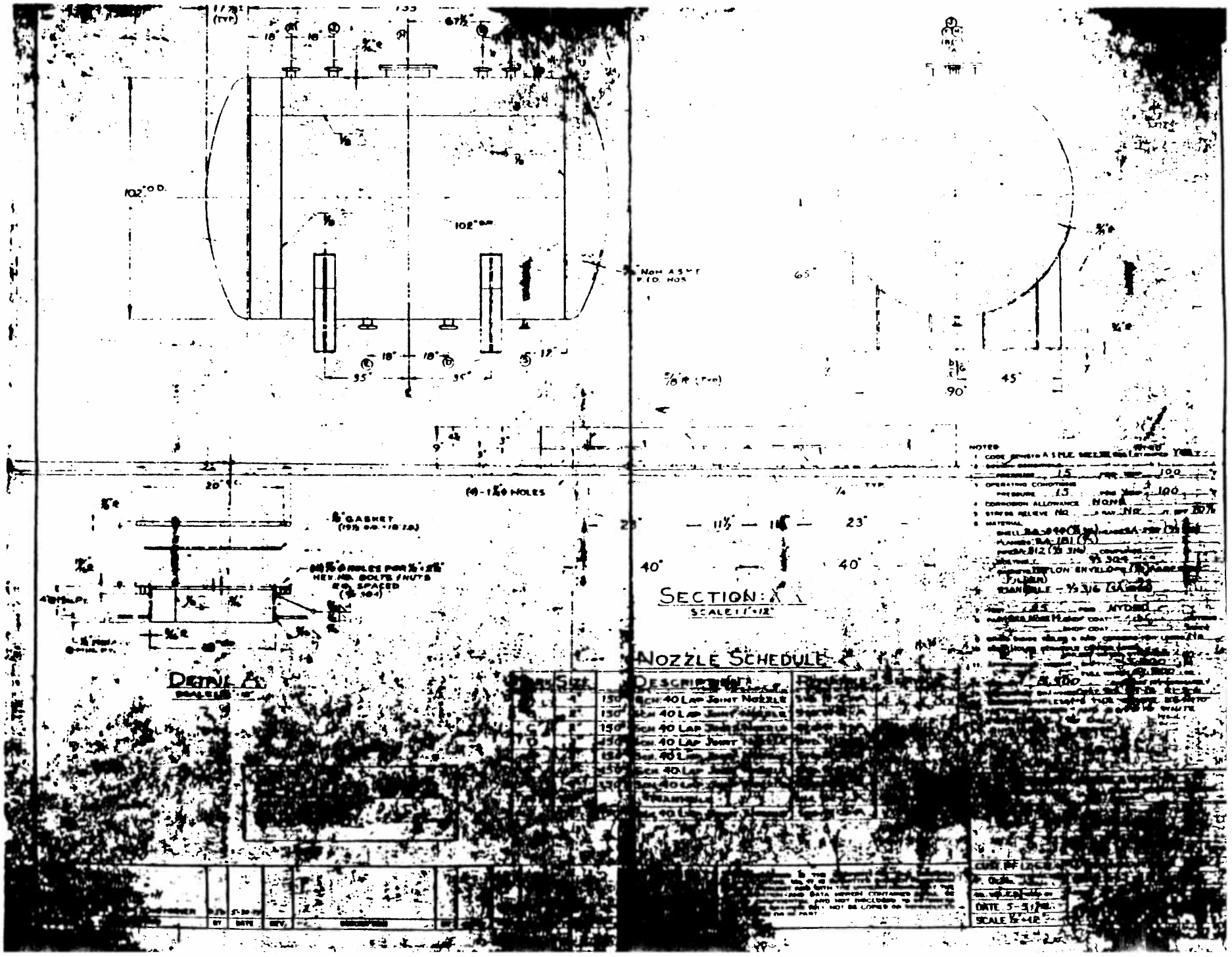
NOTES

1. THE CAPACITY OF EACH OIL STORAGE TANK (T-29 & T-39) IS 160,000 GALLONS.
2. THE DIKE HEIGHT IS 3'-0".

EXISTING LAYOUT PLAN
OIL STORAGE TANKS

FEB @ 178
JL PROJECTS

111-FM-0313


102" O.D.
102" I.D.
NOM A.S.M.E. P.I.D. NOS
(4) - 1 1/8 HOLES
GASKET
SECTION: X
SCALE: 1" = 1'-0"
DETAIL A
NOZZLE SCHEDULE
DESCRIPTION
SCH 40 LAP JOINT NOZZLE
SCH 40 LAP JOINT
DATE 5-31-91
SCALE 1/4" = 1'-0"

Appendix D-2

Epoxy Coating Information
for Containment Areas

atlas

DATA SHEET

NO. 7-67 PI (5/89)

REZKLAD® HI-BUILD 100

DESCRIPTION AND USES

REZKLAD HI-BUILD 100 is a versatile premium corrosion resistant, epoxy novolac coating designed to provide economical protection for dikes and storage areas exposed to a variety of solvents.

REZKLAD HI-BUILD 100 is resistant to Ketones, alcohols, aromatic and chlorinated solvents such as Methylene Chloride. At room temperature it is also resistant to many organic and inorganic acids including Sulfuric Acid to 96%. It is recommended for protection against corrosive fumes, splash and intermittent immersion service.

REZKLAD HI-BUILD 100 is easily applied by brush, roller or spray on concrete, wood and most metals.

A slip-resistant finish is obtained by broadcasting an abrasive grit between the final two coats. REZKLAD HI-BUILD 100 is normally applied 6-8 mils per coat.

PHYSICAL PROPERTIES

Property	Typical Value
Shore Hardness D-2	80-85
Temperature Resistance	
Constant	150°F (66°C)
Intermittent	210°F (99°C)
Abrasion Resistance	
Taber CS-17 Wheel	Taber Wear Index
1,000 Gr. Wt. 1,000 Cycles (Smooth finish)	100 mg loss
Standard Colors	White, Gray, Red, Tan
% Solids	84 - 88

CHEMICAL RESISTANCE

REZKLAD HI-BUILD 100 is resistant to many acids, alkalies, salts and solvents at varying concentrations. See attached corrosion chart for resistance to specific chemicals. REZKLAD HI-BUILD 100 is suitable for continual exposure to 150°F (66°C) and intermittent exposure to 210°F (99°C). Exposure to strong acids will discolor the coating; however, it will not affect the performance. Discolored areas can be cleaned, sanded and recoated.

SURFACE PREPARATION

For details on preparing surfaces to receive REZKLAD HI-BUILD 100 refer to ATLAS Data Sheet PS-30, "Surface Preparation."

MIXING AND APPLICATION

REZKLAD HI-BUILD 100 is applied as a minimum three-coat system for corrosion resistant service. Alternating color coats are recommended to insure total coverage.

The first coat of REZKLAD HI-BUILD 100 is used as a primer coat by diluting and thoroughly mixing one (1) pint of REZKLAD HI-BUILD 100 Thinner per gallon of REZKLAD HI-BUILD 100 Resin. The first coat should be roll or brush applied. For a three-coat system, if a slip-resistant finish is required, seed the second coat of REZKLAD HI-BUILD 100 with abrasive grit, allow to set, then remove excess grit and apply the third coat. Recoating can take place when the coating is firm enough to support foot traffic, usually 6-8 hours at 75°F (24°C). If more than 16 hours elapse between coats, it is necessary to lightly sand the surface to obtain intercoat adhesion.

Temperature of the substrate must be between 65-85°F (18-29°C). When applying REZKLAD HI-BUILD 100 at 65°F (18°C), store material for at least 24 hours at 75°F (24°C) or higher before using. Do not apply when room temperature is below 65°F (18°C) or above 100°F (38°C). Below 65°F (18°C) proper cure will not take place. Above 100°F (38°C) the working life will be too short. For best results, apply when the relative humidity is below 75% and the surface moisture is less than 8%.

REZKLAD HI-BUILD 100

Thoroughly stir the contents of each container before using. Pour the Resin, 9 lb. 4 oz. (4.20 kg), into a clean mixing container. For the first coat, add 1 pint REZKLAD HI-BUILD 100 Thinner and mix thoroughly. Add the 1 lb. 10 oz. (.74 kg) of Hardener and mix thoroughly for two minutes. When using 5 gallon units, it is recommended that batch sizes be limited to a quantity that can be applied in 30 minutes. This will vary with crew size, substrate, material and ambient temperatures. REZKLAD HI-BUILD 100 has a working life of approximately 30-40 minutes at 75°F (24°C). For smaller batches, mix 74 parts Resin to 13 parts Hardener by weight. Brush or roller apply the first coat.

On horizontal surfaces, a properly applied coat will result in a wet film thickness of 6-8 mils. On vertical surfaces, the film thickness will be 3-5 mils. For a three-coat system where slip resistance is required, seed the second coat with ATLAS Aggregate No. 2 or No. 8 and allow to set. Coverage is approximately ¼ lb. of aggregate per square foot. Use Aggregate No. 2 to achieve a coarse slip resistant finish and Aggregate No. 8 for a fine slip resistant finish. Allow each coat to dry, usually a minimum of 6 hours at 75°F (24°C). Remove excess grit before applying the third coat.

CURING

Keep REZKLAD HI-BUILD 100 free of traffic, or other contaminants until hard. The rate of cure is dependent upon the room temperature and the thickness of the material. At 75°F (24°C), REZKLAD HI-BUILD 100 will be hard enough to bear foot traffic in 6-8 hours. Maximum chemical resistance and physical properties will be attained after seven (7) days.

CLEANING OF EQUIPMENT

Use Methyl Ethyl Ketone, 1,1,1, Trichloroethane or Xylene for cleaning tools and equipment before materials begin to harden. Follow manufacturer's recommended safety precautions when using these solvents.

atlas Atlas Minerals & Chemicals, Inc.
Pennington Road, Mertztown, Pennsylvania 19560
Telephone 215-682-7171

PACKAGING AND COVERAGE

REZKLAD HI-BUILD 100

One 10 lb. 5 oz. Unit Contains:
One-1 lb. 10 oz. (.74 kg) can Hardener
One-9 lb. 4 oz. (4.20 kg) can Resin

COVERAGE: Approximately 165 sq. ft. (15.3 sq.m)/coat/Unit at a thickness of 7 mils wet.

Approximately 120 sq.ft. (11.1 sq.m)/coat/Unit at a thickness of 7 mils wet as a sealer coat over grit.

One-54 lb. 1 oz. Unit Contains:
One-8 lb. 1 oz. (3.66 kg) can Hardener
One-46 lb. (20.86 kg) pail Resin

COVERAGE: Approximately 875 sq.ft/coat/Unit at a thickness of 7 mils wet.

Approximately 620 sq.ft./coat/Unit at a thickness of 7 mils as a sealer coat over grit.

ATLAS Aggregates

Aggregate No. 2 - 100 lb. (45.4 kg)/bag
Aggregate No. 6 - 100 lb. (45.4 kg)/bag
COVERAGE: Approximately .25 lbs. per sq.ft. (1.22 kg/sq.m.)

REZKLAD HI-BUILD 100 THINNER

One-1 Gallon Can
One-5 Gallon Pail

COLOR

REZKLAD HI-BUILD 100 System is available in white, gray or red or tan. Special colors are available with minimum order of 100 gallons.

STORAGE LIFE

Store in cool dry place, keep out of direct sunlight. In unopened original containers, REZKLAD HI-BUILD 100 components can be stored at least one year without deterioration.

MAINTENANCE

Should the coating be damaged in any way, it can be repaired. Remove back to solidly bonded coating. Prepare the exposed surfaces and apply REZKLAD HI-BUILD 100 as described for new work.

TECHNICAL SERVICES

ATLAS maintains a staff of Technical Service Representatives who are available to assist you with the use of ATLAS products. In the event of any difficulties on any job with the use of ATLAS materials, the job should be stopped immediately and ATLAS Technical Service Department consulted for assistance.

WARRANTY

ATLAS warrants that its products will be free from defects in workmanship and materials under normal use for a period of one (1) year from the date of shipment by ATLAS (provided the products are installed before the expiration of the shelf life). THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR THE PURPOSE FOR THIS PRODUCT WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ATLAS LIABILITY FOR BREACH OF THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT (BUT NOT INCLUDING REMOVAL OF THE DEFECTIVE PRODUCT OR INSTALLATION OF REPLACEMENT PRODUCTS), AND ATLAS SHALL NOT BE LIABLE FOR ANY INCIDENTAL AND CONSEQUENTIAL DAMAGES FOR BREACH OF THIS WARRANTY.

PRECAUTIONS

REZKLAD HI-BUILD 100, REZKLAD HI-BUILD 100 THINNER, ATLAS Aggregates and the Cleaning Solvents are for Industrial Use Only. They contain materials that present handling and potential health hazards. Consult Material Safety Data Sheets and the container labels for complete precautionary information before use.

CHEMICAL RESISTANCE OF REZKLAD HI-BUILD 100

7-67 PI (5/89)

	R.T.	150°F
Acetic Acid, below 5%	R	R
Acetic Acid, 5% to 10%	R	R
Acetic Acid, 10% to 50%	R	C
Acetone	R	
Alum or Aluminum Sulfate	R	R
Ammonium Chloride, Nitrate, Sulfate, 50%	R	R
Ammonium Hydroxide, 10%	R	R
Ammonium Hydroxide, 30%	R	R
Aniline	C	B
Aqua Regia	B	B
Barium Chloride Sulfate	R	R
Beer	R	R
Benzene	R	
Benzene Sulfonic Acid, 10%	R	R
Benzoic Acid	R	R
Black Liquor	R	R
Bleaching Liquor below 2%	R	C
Bleaching Liquor, Conc.	C	B
Boric Acid	R	R
Butyl Acetate	R	C
Butyl Alcohol	R	C
Butyric Acid	C	B
Calcium Chloride, Nitrate, Sulfate	R	R
Calcium Hydroxide	R	R
Calcium Hypochlorite	R	C
Chlorine, Dry	C	B
Chlorine, Wet	C	C
Chlorine Water	R	C
Chloroacetic Acid, below 10%	R	C
Chloroform	R	C
Chromic Acid, below 5%	C	B
Chromic Acid, 5% to 10%	C	B
Citric Acid 10%	R	R
Copper Chloride, Nitrate, Sulfate	R	R
Ether	R	
Ethyl Acetate	R	C
Ethyl Alcohol	R	C
Ethylene Dichloride	R	C
Ethylene Glycol	R	R
Fatty Acids	R	C
Ferric Chloride, Nitrate, Sulfate	R	R
Fluosilicic Acid	A	A
Formaldehyde, below 37%	R	R
Formic Acid 90%	C	C
Grape Juice	R	R
Hydrobromic Acid 20%	R	R
Hydrochloric Acid to 20%	R	R
Hydrochloric Acid 20% to 36%	R	C

	R.T.	150°F
Hydrofluoric Acid to 20%	A	A
Hydrofluoric Acid 20% to 70%	A	NR
Hydrogen Peroxide	A	
Hypochlorous Acid to 5%	R	C
Jet Fuel	R	R
Kerosene	R	R
Lactic Acid below 5%	R	R
Lactic Acid 5% to 10%	R	R
Lactic Acid above 10%	R	C
Lard	R	C
Lox Liquid	R	R
Magnesium Chloride, Nitrate, Sulfate	R	R
Maleic Acid	R	C
Methyl Alcohol	R	C
Methylene Chloride	R	C
Methy Ethyl Ketone	R	
Milk	R	R
Mineral Oil	R	R
Nickel Chloride, Nitrate, Sulfate	R	R
Nitric Acid below 5%	R	R
Nitric Acid 5% to 10%	R	C
Oils, Vegetable	R	C
Oleic Acid	R	C
Oxalic Acid	R	C
Perchloroethylene	R	C
Petroleum	R	R
Phenol below 5%	R	
Phosphoric Acid to 25%	R	R
Phosphoric Acid 25% to 50%	R	C
Phosphoric Acid above 50%	R	C
Picric Acid to 5%	R	C
Potassium Chloride, Nitrate, Sulfate	R	R
Potassium Hydroxide below 25%	R	R
Potassium Hydroxide 25% to 50%	R	C
Sodium bicarbonate, Carbonate	R	R
Sodium Chloride, Nitrate, Phosphate	R	R
Sodium Sulfate, Sulfide	R	R
Sodium Hydroxide to 25%	R	
Sodium Hydroxide 25% to 50%	R	C
Sodium Hypochlorite below 6%	R	C
Sodium Hypochlorite 15%	C	B
Stannic Chloride	R	C
Stearic acid	R	C
Sugar, Salt Solution	R	R
Sulfuric Acid below 40%	R	R
Sulfuric Acid 50%	R	R
Sulfuric Acid above 50%	R	C
Sulfurous Acid below 10%	R	R

	R.T.	150°F
Toluene	R	C
Toluene Sulfonic Acid	R	C
Tomato Juice	R	R
Trichloroethylene	R	C
Trisodium Phosphate	R	R
Turpentine	R	C
Urea to 20%	R	R
Urine	R	
Vegetable Oil	R	C
Vinegar	R	R
Water, Fresh	R	R
Water, Distilled	R	R
Water and Sewage	R	R
Xylene	R	C
Zinc Chloride, Nitrate, Sulfate	R	R

NOTE: The information presented in the chemical resista tables is based on judgements derived from laboratory test and field service performance. The tables have been prepa as a guide to performance. No guarantee of results is m or implied and no liability in connection with t information is assumed. In actual service floors protec with REZKLAD HI-BUILD 100 are subjected to splash spillage, as well as dilution effects of wash water, mix with other solutions, wetting and drying cycles, temperat cycling and cleaning procedures.

The information presented herein should be supplemen by in-service testing. The data furnished in the tab may be revised on the basis of further testing.

R-Recommended

NR-Not Recommended

C-Conditional. May be serviceable if the contaminant immediately removed or washed off the surface.

A-Silica Filler will be attached. Sealing the surface m prolong the life. Carbon filled REZKLAD is recommended.

ATTACHMENT I

CONTENT:

- Incinerator Design and Operation

* Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

BURNER SYSTEM

BASIC BURNER SYSTEM DESCRIPTION

The rotary kiln incinerator system, as purchased by Pfizer Pharmaceuticals, Inc., has been equipped with three (3) industrial type burners manufactured by Maxon, Inc. One burner has been selected, designed and piped to burn waste solvents having an approximate heating value of 100,000 Btu/gallon, another No. 1 fuel oil and the third, which is mounted on the Primary Chamber, for either waste solvent or No. 1 fuel oil. Selection of fuel switchover is on a manual basis and can not be accomplished without first shutting down the particular burner to be transferred.

Each burner fuel train is equipped with a motorized fuel valve and a solenoid, mounted in series. Final control is accomplished with a linear ratio fuel air valve which constantly modulates via an air operator to control at a preset temperature. The air (pneumatic) operator will fail closed on loss of air pressure.

Both solvent and oil supply trains have been piped with both low and high pressure fuel interlock switches as manufactured by Mercoid and meet both UL and FM requirements.

The three burners are of the air atomizing type and incorporate propane pilot systems. Maximum fuel pressure at the burner will be 16 lbs. at a maximum capacity of 20 gph. Burners are "Maxon 4" Multifire" and are equipped with castable flame retention blocks.

The flame safeguard is manufactured by Honeywell, Model R4138D.

The flame safeguard system is equipped with a purge system interlocked to the manual pilot ignition system. The purge timer is adjustable from 8 to 60 seconds.

The unit is equipped with a pilot trial lockout timer fixed at 15 seconds with flame response in 2 to 4 seconds. It has IRI approval. (File approval No. LR1620, Guide Numbers 140-A-2, 300-LO.2.)

The burner is equipped with a flame scanner manufactured by Honeywell, Model C7012E. It has IRI approval.

All three burners have over temperature protection which will shut off fuel supply.

ThermAll, Inc. has also installed IRI required interlocks for low combustion air pressure, air flow through the unit, starter interlocks and a minimum position fuel valve ignition limit.

BURNER SYSTEM

Three burners are employed: Burner #1 is located on the front panel of the Primary Combustion Chamber; Burners #2 and #3 at the entry to the Secondary Combustion Chamber.

The installed fuel piping is such that Burner #1 can be fired on either solvent or kerosene while Burner #2 is piped for solvents and Burner #3 for kerosene. However, and to simplify future maintenance, all three burners are identical in construction and have solvent resistant components.

Permissive Controls

The burners will not fire until the system has been brought to a safe operational status. To insure this condition, various safety interlocks have been incorporated into the burner firing circuits and these must be satisfied previous to allowing burner operation:

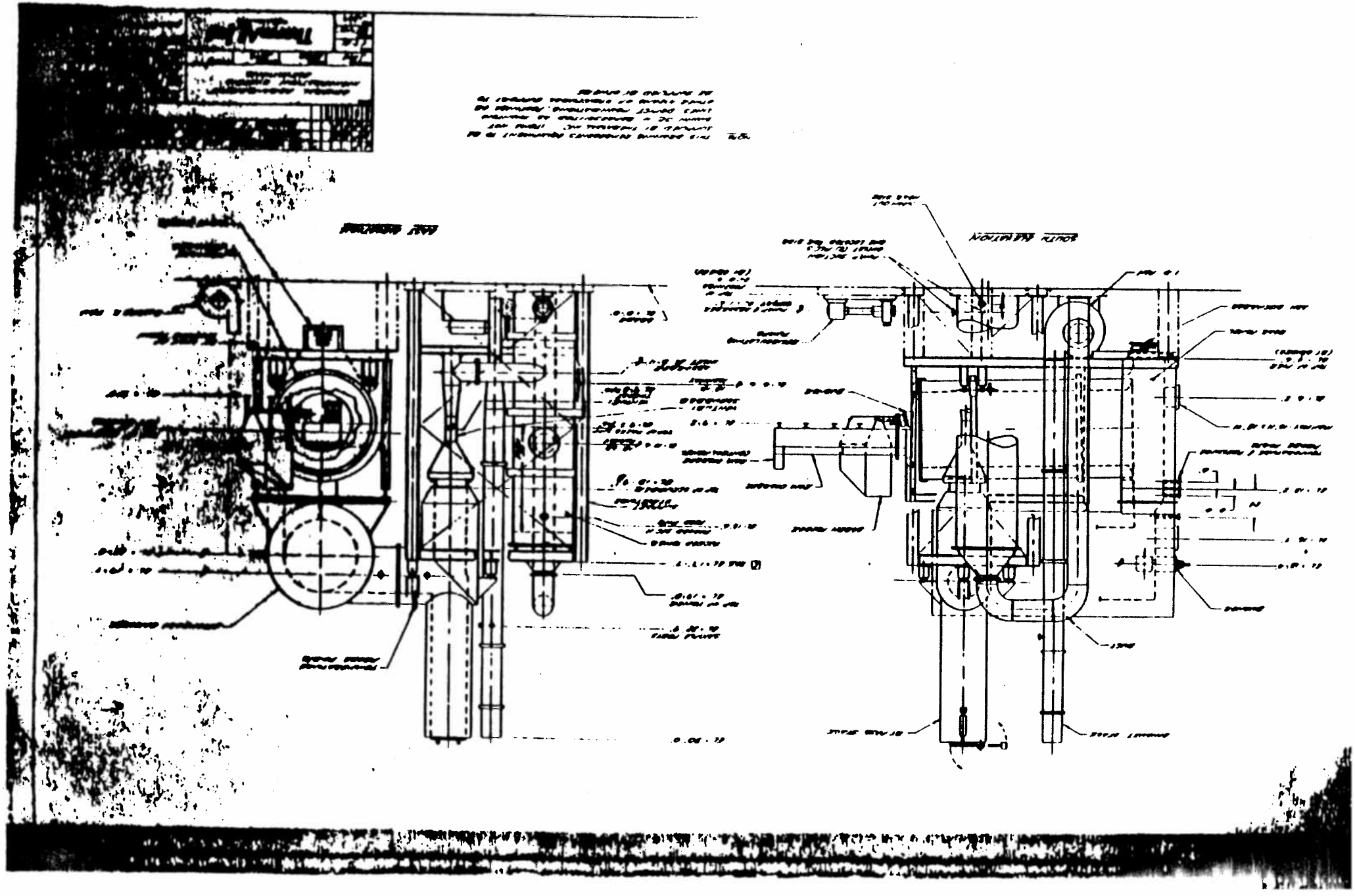
Scrubber System - The scrubber system must be operative with either of the recirculating pumps in use, proof of water flow insured, and proper gas temperature to the absorber.

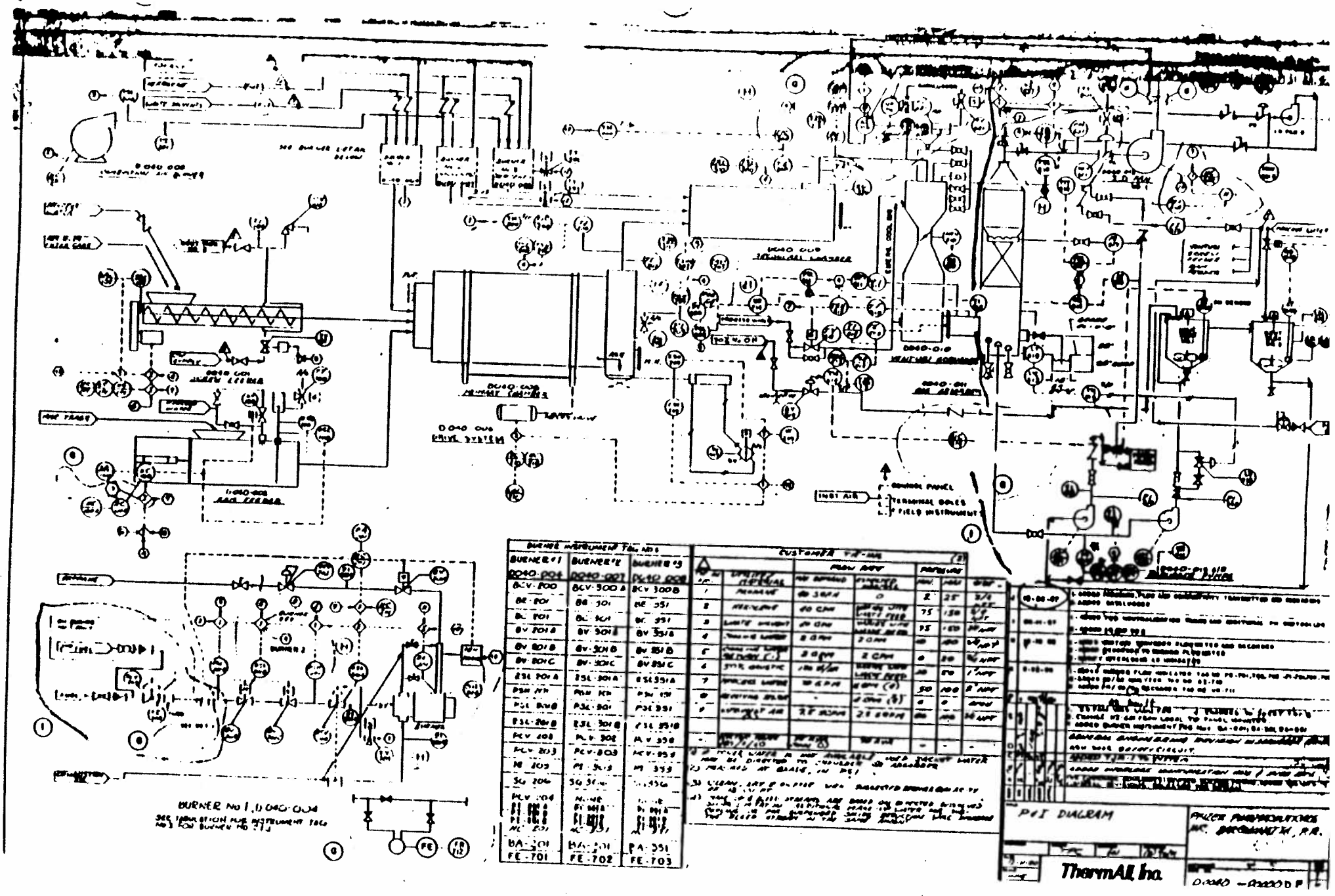
Air Flows - The air flow in the system must be initiated via the induced draft fan, the by-pass stack cap closed, the air flow to the induced draft fan proven, proper temperature discharge from the Primary Combustion Chamber for Burner #1 operation, proper temperature discharge from the Secondary Combustion Chamber. For either Burner #2 or Burner #3 operation, the induced draft fan damper operative, and proper vacuum in the Primary Combustion Chamber.

Burner Support - Fuel must be deliverable to the burners at proper pressure as well as pressurized combustion air. Burners must be in the low fire position.

FIGURE I-1

PLAN AND EVEVATION DRAWING OF INCINERATOR




BURNER No 1, D 040-004
P&I DIAGRAM
ThermAll Inc.

ATTACHMENT J

CONTENT:

- RCRA Facility Assessment Report (1/88)

- Note: References and citations made to specific sections, tables, figures or other sources which are not included in this Attachment are available in Pfizer's revised Part B application, dated September 1989, and is in the Administrative Record. The Administrative Record is located at U.S. EPA Region II, Permits Administration Branch, 26 Federal Plaza, New York, N.Y. 10278 and the Puerto Rico Environmental Quality Board, Santurce, Puerto Rico 00910-1488.

FINAL REPORT
RCRA FACILITY ASSESSMENT
PFIZER PHARMACEUTICALS, INC.
BARCELONETA, PUERTO RICO

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

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EPA Region	: II
Facility I.D. No.	: PRD090346909
Contract No.	: 68-01-7331
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(JB3/34)

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1.0 INTRODUCTION

In April 1987, Versar, Inc., received a work assignment (CDM WA No. 460) under TES III, U.S. EPA Contract No. 68-01-7331, to provide enforcement support to U.S. Environmental Protection Agency (EPA) Region II by conducting a RCRA facility assessment (RFA) of Pfizer Pharmaceuticals, Inc. (PPI), in Barceloneta, Puerto Rico. This interim RFA report marks the completion of two significant RFA tasks, the preliminary review and the visual site inspection. It is submitted as partial fulfillment of the reporting requirements of this work assignment.

1.1 RFA Objectives

The 1984 Hazardous and Solid Waste Amendments (HSWA) established broad new authorities to assist EPA in the implementation of corrective actions under the RCRA program. The primary objective of the RCRA corrective action program is to clean up releases of hazardous waste or hazardous constituents that threaten human health or the environment. The RCRA corrective action program applies to all operating, closed, or closing, treatment, storage, or disposal facilities regulated under Subtitle C (Hazardous Waste Management) of RCRA and consists of three phases: the RCRA facility assessment (RFA), the RCRA facility investigation (RFI), and corrective measures (CM).

- The purposes of the RFA are to identify and gather information on releases or potential releases at RCRA facilities, to evaluate solid waste management units (SWMUs) and other areas of concern for releases to all environmental media, to evaluate regulated units for releases to all environmental media other than ground water, to make preliminary determinations regarding releases of concern and the need for further actions and interim measures at the facility, and to screen from further investigation the SWMUs and areas of concern that do not pose a threat to human health or the environment.

- The goal of the RFI is to fully characterize the extent of identified releases that require further action.

- During the CM phase, the extent of remedial measures required is determined, and remedies for the identified problems are selected and implemented.

This interim report is the result of an RFA conducted on the PPI facility. It presents the findings of the preliminary review (PR) and the visual site inspection (VSI), the first two steps of the RFA process. This report also assesses the need for a sampling visit (SV), the third step of the RFA.

All three steps of the RFA require the collection and analysis of data to support initial release determinations from specific SWMUs at the facility (SWMU will be further defined in Section 4.0). The three steps are:

- The PR focuses primarily on evaluating existing information, such as inspection reports, permit applications, SWMU responses, waste manifests, and historical monitoring data, and on conducting personnel interviews to ascertain the occurrence of actual or potential for releases to all environmental media at the facility.

- The VSI entails the onsite collection of visual information to obtain additional evidence of releases and to identify other areas of concern, to confirm the existence of all SWMUs, to fill in data gaps as appropriate, and to focus recommendations for further action.

- The SV fills in data gaps that remain upon completion of the PR and VSI by obtaining sampling and field data. This information is used to determine whether any identified releases warrant further investigation beyond the RFA. Based on the findings of the PR and VSI, the need for a sampling visit, if appropriate, is identified and recommended in the interim RFA report.

The RFA is complete when the investigation has identified all potential releases of concern, identified all SWMUs, determined the areas that need further investigation and areas where sufficient information was collected to focus these investigations, screened out releases that do not require any further investigation, and referred permitted releases to other authorities, as appropriate.

1.2 RFA Approach

The interim RFA conducted of PPI was performed in accordance with the "RCRA Facility Assessment Guidance" document (EPA, 1986). Versar collected documents at the U.S. EPA Region II office in New York in order to begin the PR

of the facility. Additional information was gathered from the EPA Caribbean field office and the Commonwealth of Puerto Rico Environmental Quality Board (EQB) office in Santurce, Puerto Rico. Versar examined the documents and other written materials to identify SWMUs and other areas where wastes have been managed at the facility. Versar also obtained information on the facility's location, waste characteristics, evidence of past releases, and potential environmental receptors.

The VSI for PPI was conducted by Versar and guided by facility representatives on Thursday, June 25, 1987 (see Appendix C for RFA field notes). The facility was visually assessed for evidence of releases, to ensure that all SWMUs and areas of concern have been identified, and to fill in any data gaps previously identified. Each identified SWMU was examined for the following:

- Unit characteristics
- Waste characteristics
- Pollutant migration pathways
- Evidence of release
- Exposure potential

The overall result of this effort has been an evaluation of the facility's potential for release of hazardous waste, which is documented in this report. The interim RFA report summarizes the findings of the PR and VSI and recommends further action, as necessary.

2.0 FACILITY DESCRIPTION

2.1 Site Location

Pfizer Pharmaceuticals is located on a 90-acre site in Barceloneta, Puerto Rico, within a zone of about 850 acres on which several pharmaceutical plants have been established. The plant site is located near the north-central shore of Puerto Rico in an unsurveyed area of the Barceloneta quadrangle (Figure 1). Major PPI facility buildings and process areas are shown in Figure 2. The facility contact, mailing address and telephone number are:

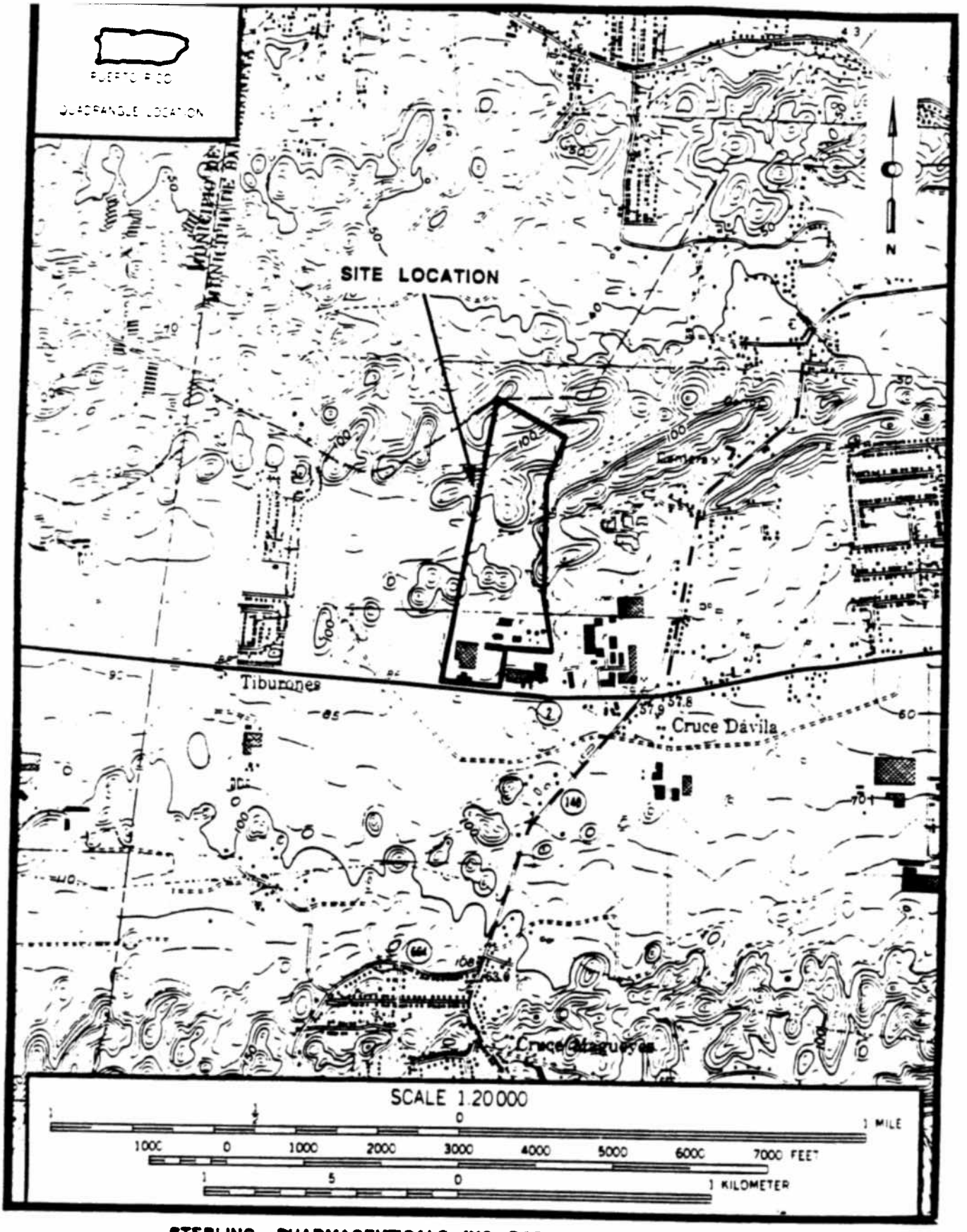
Mr. Carlos Lopez
Pfizer Pharmaceuticals, Inc.
P.O. Box 628
Barceloneta, Puerto Rico 00617
(809) 846-4300

The site is located along State Road Route 2, exit km. 58.2, in Barceloneta. Both the land and structures are owned by Pfizer Pharmaceuticals, Inc.

2.2 Environmental Setting

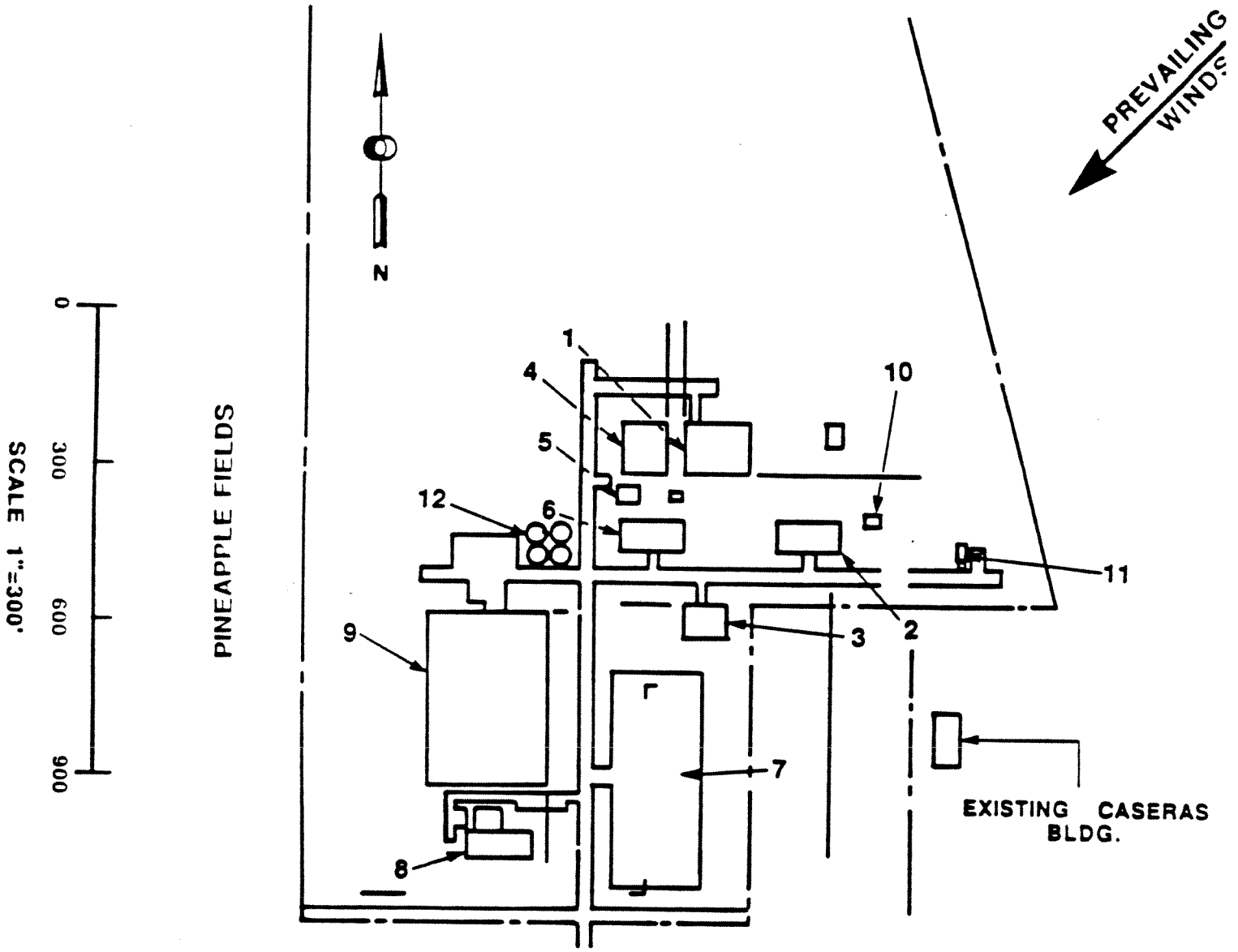
The plant is located in a rural area in the northern part of Puerto Rico. The nearest residential population is approximately 1.12 km (0.70 miles) west of the facility. There are food-processing industries to the east of the plant and pineapple fields to the south and to the west. Low hills are located on the northern part of the site. These hills are a result of the Karst topography on which the facility lies.

The facility is located on a relatively flat area (approximately 80 feet above sea level) well above the flood plain of the Manati River. The Manati River is the nearest body of water to PPI, located about three miles east of the facility. The Atlantic Ocean is to the north about six miles from the facility. Ground water use by the facility is limited to two withdrawal wells utilized to supply process and drinking water. The site has no injection wells. Ground water serves as the primary source of drinking water for all residents within the vicinity of PPI. The direction of ground water flow beneath the facility has not been determined.



STERLING PHARMACEUTICALS, INC. RCRA PART B APPLICATION, FEBRUARY 1984

FIGURE 1. PFIZER PHARMACEUTICALS, INC. SITE LOCATION



1. PRODUCTION WAREHOUSE (BLDG. # 105)
2. POWERHOUSE (BLDG. # 112)
3. ENGINEERING AND MAINTAINANCE SHOP (BLDG. # 110-111)
4. SOLVENT STORAGE TANK FARM (BURIED)
5. BULK LIQUID STORAGE TANK FARM.
6. PRODUCTION BLDG. (BLDG # 104)
7. PARKING LOT
8. ADMINISTRATION - QUALITY CONTROL-CAFETERIA (BLDG. # 102)
9. PHARMACEUTICAL-PACKAGING (BLDG. # 103)
10. PUMP HOUSE
11. NEW INCINERATOR
12. EQUALIZATION / NEUTRALIZATION AREA

FIGURE 2. PFIZER PHARMACEUTICALS, INC. FACILITIES PLAN

The facility is enclosed by fences, and the entrances are monitored and locked. The security of PPI is maintained by a staff of trained security guards 24 hours a day, 7 days a week.

3.0 FACILITY OPERATIONS

3.1 Current Operations

The PPI facility currently manufactures four products by organic synthesis processes. It periodically changes the production processes. In 1986, when PPI filed the Part B Permit application, it was producing Prazosin, Chloropropamide, Doxepin, and Meclizine. During the VSI, the inspector was informed that the current products are Procardia (a new anginal drug), Minipress (an antihypertension drug), Minipro (an antihypertension drug), and Antivert (an antihistamine). When the processes are changed, the solvents used may have to be changed accordingly. However, the changes may not be significant.

Typically, raw materials are charged to reactors varying in size from 500 to [illegible] gallons, where they are subsequently dissolved in solvents, reacted, crystallized, centrifuged, and dried. The products from the above processes are then warehoused until required for dosage form production, which occurs in a separate building. Here, the bulk material is mixed with excipients, encapsulated or tableted, and packaged (Riva, 1984).

In certain reaction steps, process liquors containing solvents and other organic chemicals are mixed with activated carbon and in some cases supercell (diatomaceous earth). The mixture is passed through a small filter, called a sparkler filter, washed, and dried. The filter cake is then discarded. Some of these filter cakes contain flammable solvents and some contain listed solvents. These cakes are classified as hazardous wastes (PPI, 1986) and are placed in 55-gallon drums to be transferred to the drum storage area approximately once a week. Such wastes are subsequently incinerated onsite. A list of filter cakes that were generated in 1986 is presented in Table 1 along with the source of the waste, the associated hazard classification, and the basis for the hazardous classification (PPI, 1986). These classifitions are based on raw materials which are used in the process and known to be present in the wastes.

There is a solvent recovery system onsite. The solvents that are recoverable are sent to the recovery system. The process liquors that contain solvents

TABLE I
FILTER CAKES

Process	Step	Step Name	Dry Weight of: Carbon (kg/lot)	Dry Weight of: Supercell (kg/lot)	Wet Weight (kg/lot)	Principal Solvent in Mother Liquor	1986 Lots/ Year	1986 EST Annual Wet Weight (kg/yr)	Appendix VIII Materials	Basis for Hazardous Classification	EPA Designation	Flash Point of Solvent (FP)
Piroxicam	4	Crude Piroxicam	10	0	28	Xylene	46	1,288	None	Ignitable	F003	80
Nifedipine	4	Raw Nifedipine	12.7	0	85	Ethanol Toluene	17	1,445	Toluene	Toxic	F005	65
Glipizide	3C	Crude Glipizide	10	0	28	Acetone	2	56	None	Ignitable	F003	42 -4
Glipizide	3B	Glipizide Raw	6	0	17	Acetone	2	34	None	Ignitable	F003	-4
Piroxicam	5	Pure Piroxicam	5	0	14	Acetone	65	910	None	Ignitable	F003	-4
Doxepin HCl	3	Crude Hydropin	10	0	27	Dimethylacetamide Toluene Methyl Iodide	31	837	Toluene Methyl Iodide	Toxic Toxic	F005	145 52 N/A
Doxepin HCl	4	Doxepin HCl	20	0	67	Ethyl Acetate	17	1,139	None	Ignitable	D001	26
Nacilsine HCl	2	Crude Nacilsine	45	7	100	Isopropanol Toluene	3	300	Toluene	Toxic	F005	53 42
Nacilsine HCl	1	M&P	57	11	90	Toluene	0	0	Toluene	Toxic	F005	42
Nacilsine HCl	3	Pure Nacilsine	18	0	45	Methanol	3	135	None	Ignitable	D001	52
Prenoxin HCl	5	Aminochloro-quinoxaline	0	10	60	Methanol Dimethylacetamide	5	300	None	Ignitable	D001	52
Prenoxin HCl	6	Furoyl Piperazine	18	0	75	Chloroform Ethanol	6	450	Chloroform	Ignitable	D001	145 N/A
Prenoxin HCl	7	Prenoxin			5		6	30	Isoamyl Alcohol	Ignitable	D001	65 65
TOTAL								6,924				

that are not recoverable are placed in 55-gallon drums, stored in the drum storage areas, and incinerated onsite. These hazardous liquid wastes are listed in Table 2 (PPI, 1986).

There are also certain solvents and raw materials that have to be discarded as off-specification or expired materials. These are also classified as hazardous wastes. A list of such wastes is presented in Table 3 (PPI, 1986).

Therefore, the hazardous wastes generated in this facility are mostly process liquors containing waste solvents, contaminated activated carbons (filter cakes), and off-specification solvents and raw materials. Currently, all hazardous wastes generated by PPI are incinerated onsite. Facility wastewaters are discharged to the Barceloneta Regional Wastewater Treatment Plant (BRWTP).

3.2 Historical Operations

Prior to 1972, the land on which the facility is now situated was owned by the Puerto Rico Land Authority and was used for growing pineapples. In 1973, PPI started producing pharmaceutical products at this site. From 1973 to 1981, all of PPI's process effluents were disposed of by ocean barging under a permit issued by the EPA. These wastes were stored in three above-ground storage tanks while awaiting shipment to the barge loading facilities in Arecibo, Puerto Rico. Subsequently, the PPI facility installed a number of incinerators onsite to handle all of the hazardous wastes generated.

In June 1986, PPI filed a RCRA Part B Permit application to operate this facility as a generator of and a treatment, storage, and disposal (TSD) facility for hazardous wastes. The EPA I.D. Number for this facility is PRD 090346909. The plant in the past disposed of its wastes through ocean barging, but now, it incinerates hazardous wastes onsite and discharges diluted process wastewater to the BRWTP.

TABLE 2
HAZARDOUS LIQUID WASTES

Process	Step	Solvent	Quantity (gal/lot)	Lots/Yr	Quantity (gal/yr)	Appendix VIII Constituents	Basis for Classification	EPA Designation	Flashpoint (°F)
Prazosin	Furoyl piperazine	Ethanol/toluene	1,567	6	9,400	Toluene (0.5%)	Toxic	F005	65/42
Prazosin	Furoyl piperazine	Ethyl acetate/ hexane	1,400	2	2,800	None	Ignitable	D001	26/-26
Prazosin	Furoyl piperazine	Hexane	400	2	800	None	Ignitable	D001	-26
Diabinese	Tableting operation	Isopropanol	208	24	5,000	None	Ignitable	D001	53
TOTAL					18,000				

TABLE 3
OFF-SPECIFICATION COMMERCIAL CHEMICAL PRODUCTS

Material	Quantity (lb/yr)	Basis for Classification	EPA Designation	Flashpoint (°F)
Acetone	800	Ignitable	U002	4
Chloroform	800	Toxic	U044	N/A
Ethyl acetate	800	Ignitable	U112	26
Methanol	800	Ignitable	U154	52
Phenol	800	Toxic	U188	N/A
Sodium saccharin	800	Toxic	U202	N/A
Tetrahydrofuran	800	Ignitable	U213	5
Toluene	800	Toxic	U220	42
Xylene	800	Ignitable	U239	80
Methylene chloride	800	Toxic	U080	N/A
Methyl iodide	800	Toxic	U138	N/A

4.0 SOLID WASTE MANAGEMENT UNITS

Under RCRA, Section 1004(28), the term "solid waste management" means the systematic administration of activities that provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste. A SWMU is defined as any discernable waste management unit at a RCRA facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of either solid waste or hazardous waste, or both.

PPI, in its Part B Permit Application, identified the following 11 SWMUs at the Barceloneta facility (Figure 3):

SWMU 1 - Waste Storage Tank/Fire Protection Tank
SWMU 2 - Waste Storage Tank/Fuel Oil Tank
SWMU 3 - 47,000-Gallon Waste Storage Tank
SWMU 4 - 5,000-Gallon Spent Solvent Tank
SWMU 5 - Evaporator/Incinerator
SWMU 6 - Thermal Research & Engineering Co. Liquid Waste Incinerator
SWMU 7 - Solid Waste Incinerator
SWMU 8 - Rotary Kiln Incinerator
SWMU 9 - Three 38,000-Gallon Waste Equalization & Neutralization Tanks
SWMU 10 - Drum Storage Areas
SWMU 11 - Solvent Recovery Facilities

Unit and waste characteristics, as well as release information for each SWMU identified, are discussed in this section of the report. Other areas of concern at the facility are discussed in Section 5.0.

4.1 SWMU 1 - Waste Storage Tank/Fire Protection Tank

This tank is 48 feet in diameter by 40 feet high and has a capacity of 500,000 gallons. It is adjacent to the North Drum Storage Area (Figure 3). Beginning in 1974, it was used as the feed tank for treatment equipment called the evaporator-incinerator. The material collected in this tank consisted of selected waste streams segregated for destruction in the evaporator-incinerator (PPI, 1986).

In 1981, analytical tests were conducted on the waste in this tank, and on the basis of these tests, permission was given by the U.S. EPA to dispose

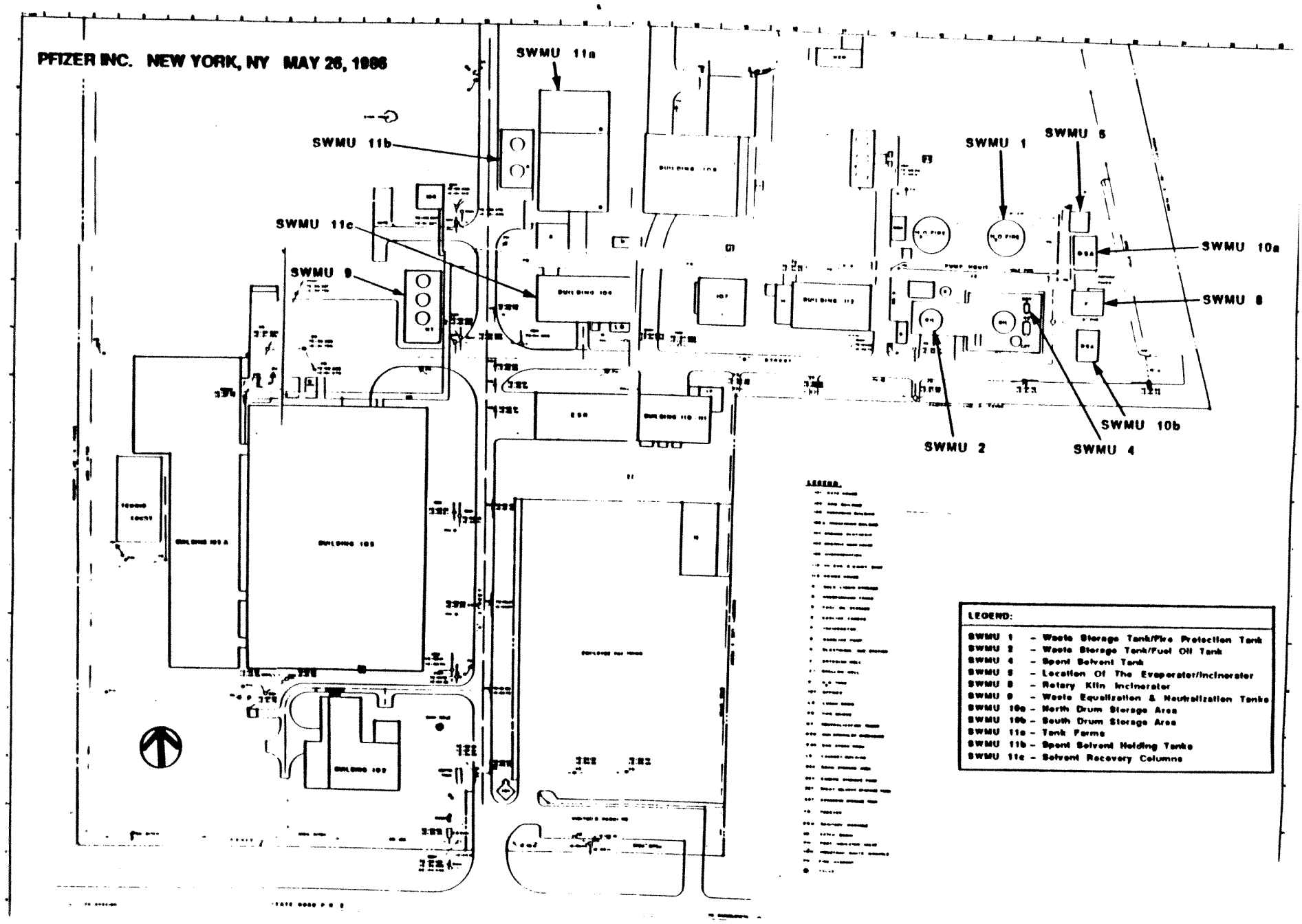


FIGURE 3. SOLID WASTE MANAGEMENT UNITS, PFIZER PHARMACEUTICALS, INC., BARCELONETA, PUERTO RICO

of it in the ocean along with other wastes (PPI, 1986). The results of these tests are shown in Table 4 (PPI, 1986). When the tank was finally emptied in 1981, it was cleaned and placed into service as a fire protection tank.

During the cleaning operation, 317,000 pounds of bottom sludges were removed from the tank and sent to the Resources Management, Inc., hazardous waste disposal facility in Ponce, Puerto Rico. Washwater was discharged to the BRWTP.

No release of waste materials to the environment from this tank has been recorded, and no evidence of release was observed during the VSI. Nevertheless, there is no containment around this tank except for a small curbed concrete area around the tank valves (See Appendix A, photo 1). If there had been any sizable spill during previous operations, the waste would have spilled directly onto the neighboring soil causing soil and potential ground-water contamination. Because this tank is adjacent to the sandblasting operation, the soil around this unit was covered with black sand. The plant personnel ensured Versar that the black sand they use is not a hazardous waste, and that it will not contaminate the soil. (A description of the black sand is presented in Appendix B.) There is, however, no vegetation growth in places where the soil is covered with the sand. No other discoloration or staining of the soil was observed.

Since the tank does not contain hazardous waste currently, the potential for human exposure to hazardous waste from this tank does not exist at this time. The potential for human exposure to the waste material from previous operations could be high considering the small containment area.

4.2 SWMU 2 - Waste Storage Tank/Fuel Oil Tank

The waste storage/fuel oil tank is 30 feet in diameter by 32 feet high and has a 150,000-gallon capacity (Figure 3 and Appendix A, photo 2a). This tank was used as a waste storage tank for process wastes awaiting transfer to the ocean discharge barging facility at Arecibo, Puerto Rico. Complete records of the barging operation are no longer available, but the last permit obtained by PPI was dated October 1980. It permitted the disposal of 21,000 wet tons per year of neutralized aqueous wastes resulting from the production of pharmaceuticals (PPI, 1986).

TABLE 4
FIRE PROTECTION/WASTE STORAGE TANK
WASTE CHARACTERISTICS

Parameter	Concentration (mg/l)	
	Sample 1	Sample 2
Phenol	7,551	4,200
COD		
Total	61,560	29,400
Filtered	57,760	29,200
BOD_5		
Total	42,750	17,400
Filtered	41,300	16,400
Dissolved Solids		
Total	203,000	50,100
Fixed	175,000	43,780
Total Kjeldahl Nitrogen	4,760	1,510
Ammonia	3,885	1,360
Total Suspended Solids	6,987	25
pH (standard units)	11.1	11.0
Cadmium	0.044	
Lead	0.2	
Barium	0.1	
Silver	0.11	
Chromium	0.05	
Mercury	0.0002	
Selenium	0.05	
Arsenic	0.005	

During 1980, this tank was emptied, and a 47,000-gallon tank, described below, was substituted. This waste storage tank was then converted to a fuel oil storage tank. A profile of the wastes stored in this tank is presented in Table 5 (PPI, 1986).

Currently the converted fuel storage tank is in a containment area with another No. 6 fuel storage tank, a kerosene storage tank, and a caustic storage tank (Figure 3). During the use of this tank for waste storage, no release of waste materials to the environment was recorded. However, during the VSI, Versar noticed some dead vegetation next to the dike outside the containment area (Appendix A, photos 2a and 2b). Soil sampling outside of the containment is recommended for this SWMU.

The plant personnel informed Versar that this tank did not have any containment when it was operated as a waste storage tank. Therefore, even though no spills were ever recorded, the wastes would have contaminated the surrounding soil should a spill have occurred. The exposure potential of hazardous wastes to humans and the environment could be high depending on the operating practices at the time. Currently, since the tank is no longer used for hazardous wastes storage and is contained in a diked area, the exposure potential of humans to hazardous material is minimal.

4.3 SWMU 3 - 47,000-Gallon Waste Storage Tank

This tank was 20 feet in diameter by 20 feet high. It was made of carbon steel and had a capacity of 47,000 gallons. It was used for storage of process wastes for transfer to the ocean barging facility and ocean discharge from mid-1980 to mid-1981. During this time, it probably contained as much as 21,000 wet tons (5,042,000 gallons) of the waste described in Table 5. In September of 1981, the plant began using the BRWTP, and this tank was taken out of service as a waste storage tank (PPI, 1986).

While the details are no longer available, it is PPI's belief that after the tank was taken out of service, it was cleaned with water. In November 1981, a decision was made by PPI to use this tank for process waste equalization and neutralization at another location within the plant. In attempting to move the tank, the lifting lugs were torn off. In the process of repairing

TABLE 5
PROCESS EFFLUENT PROFILE OCEAN DUMPING PERMIT
(In mg/l unless otherwise noted)

	Minimum	Maximum
Specific Gravity (units)	0.990	1.1
pH (standard units)	6.0	9.0
Alkalinity (normality)	0.004	0.093
Total Solids	34	186,000
Suspended Solids	17	2,010
Volatile Solids	10	13,508
C.O.D.	1,850	343,860
B.O.D.	383	27,400
Color (P.C.U.)	0.5	270
Turbidity (NTU)	25	800
Ammonia	14	19,375
Total Kjedahl Nitrogen	2	19,300
Sulfate	26	45,000
Phosphate	7.5	515
Phenol	10	1,756
Cyanide	0.1	0.4
TL 50 (96 hours)	710	160,000
Copper	0.013	0.3
Cadmium	0.002	0.17
Barium	0.01	0.05
Nickel	0.05	1.25
Zinc	0.01	0.6
Vanadium	0.05	0.1
Chromium	0.02	0.20
Mercury	0.0005	19
Silver	.001	1.3
Selenium	1.0	1.0
Iron	0.01	0.41
Total Hydrocarbon	350	4,300
T.O.C.	3,200	21,175

the damage to the lugs, welding was performed to reinforce the lugs. This resulted in an explosion which split the tank at the bottom seam and sprayed the liquid material in the bottom of the tank over approximately 8,000 ft^2.

It is presumed that the explosion was caused by ignition of solvent from either a layer on top of the liquid in the tank or from solid material on the walls of the tank. Table 6 shows the analysis of the tank contents sampled just prior to the explosion (PPI, 1986). The sample could have been taken in such a way that it failed to include a solvent layer.

The details of the cleanup following this explosion are not available, but PPI believes that the residual materials were flushed from the area with water via a fire hose. PPI estimates that the total amount of liquid in the bottom of the tank was no more than 2,500 gallons, and that it was mostly water (PPI, 1986). A few gallons of solvent may have been floating on top of the water. This is the only recorded release from the tank. The tank has since been sold for scrap and removed from the site.

During the VSI, the plant personnel informed Versar that this tank was located behind the current incinerator next to an open trench which encompasses part of the plant (Appendix A, photo 3). If the contents of this tank were indeed flushed to the ground with water, then the soil in the vicinity, including the soil in the ditch, could have been contaminated. Also, there are a number of sinkholes along the trench through which the contaminants might have contaminated the subsurface soil and possibly the ground water. Therefore, sampling is recommended from the trench and from the sinkholes.

The accident was reported by PPI in its Part B Permit application to the EPA. No other original documents regarding this incident could be identified, and no evidence of release was observed during the VSI. Nevertheless, samples should be collected from the tank location, the trench, and the sinkholes to identify any contaminants present in these areas.

When the tank exploded, the hazardous waste contents of the tank were spilled over approximately 8,000 ft^2. Some of the waste probably evaporated into the air during the explosion. Versar was informed that PPI did not evacuate the local areas, sample, or excavate the contaminated soil. To the

TABLE 6
LIQUID WASTE TANK DATA

DATE OF COLLECTION: 11/24/81

Parameter	Value
pH	10.49 standard units
Flashpoint	55.4 °F
Phenol	145 mg/l
Water content	96.54 weight percent
Solvent content	0.01 weight percent
Only significant solvent (expressed as benzene)	1.41 ng/l

contrary, PPI allowed the contaminated washwater to drain directly into the sinkholes. Therefore, the workers and the public had possibly been or may still be at risk of being exposed to contaminants through direct contact or through the water supply.

4.4 SWMU 4 - 5,000 Gallon Spent Solvent Tank

The 5,000-gallon spent solvent tank was installed in 1972 and currently contains those waste solvents and process wastes listed in Tables 1, 2, and 3. It has always been used as a feed tank for plant incinerators. This spent solvent tank was fabricated in accordance with ASME Code Section VIII, 1972, Division I. The tank shell and heads are constructed of SA-240-316 stainless steel. It is 8 feet 6 inches in diameter by 11 feet 3 inches long, and it is neither lined nor coated (PPI, 1986).

This 5,000-gallon spent solvent tank is in the same concrete diked area with SWMU 2 (Figure 3 and Appendix A, photo 4). PPI claimed that all of the materials in the tanks in this concrete area are compatible. The containment volume of the diked area is sufficient to store the contents of the largest tank.

During operation, the process liquors are pumped from 55-gallon drums in the drum storage areas to this spent solvent tank via an air-operated diaphram and a flexible stainless steel hose. Due to the large drum storage areas and the volume of this tank, pumping is required less than 10 times a year. When the incinerator is started up, the agitator in the tank blends the tank contents to provide a uniformed feed.

PPI claims that there has been no known release of hazardous waste from this tank to the environment since the beginning of its operation. It is currently located in a contained area. However, during the VSI, the plant personnel informed Versar that the plant has corrosion problems. All piping at the facility must be sandblasted and repainted each year. Since this unit has overhead piping leading from the drum storage areas, the corrosion of these pipes may create a potential threat to nearby workers and to the environment via soil and air migration. Observations made during the VSI did not indicate

evidence of release or loss of structural integrity from this piping. Routine cleaning and inspection should, however, be made in order to determine the need to upgrade associated piping before the end of its useful life.

4.5 SWMU 5 - Evaporator/Incinerator

The evaporator-incinerator, adjacent to the North Drum Storage Area, was purchased in 1973 as a potential treatment facility for all of PPI's wastes. This system was designed to treat approximately 8,000 pounds per hour (lb/hr) of concentrated aqueous wastes by the combined processes of evaporation and incineration (Simon, 1985). The principal wastes fed to this unit were those stored in the 500,000-gallon feed tank described in Section 4.1. This equipment was last used in 1980. It has since been dismantled and sold for scrap (PPI, 1986). The concrete pad on which it was situated is now being used for sandblasting. The sandblasting operation at this location is the source of the black sand near SWMU 1 (Figure 3 and Appendix A, photo 5).

The waste handled in this unit was the waste stored in the 500,000-gallon feed tank that was later converted to a fire protection tank. These wastes are described in Table 4.

PPI claimed that there was no known release of any hazardous waste from this unit to the environment during the time of its operation. However, had a release occurred, the pollutants would have migrated through the air.

No information was available on this unit other than that described in this section. The unit has been dismantled since 1980. No release evidence was documented during the PR or observed during the VSI.

When this unit was cleaned prior to being dismantled, all washwater was discharged to the BRWTP. The floors, foundations, and the structural steel supporting members are still in place. Since no known release was recorded, and since the unit is no longer in operation, the potential of human exposure to the hazardous waste handled by this unit is minimal.

4.6 SWMU 6 - Liquid Waste Incinerator

This incinerator was installed in 1972 for the purpose of burning spent solvents. It was sized for a heat release of 1.2 million BTU/hr and had a capacity of incinerating 500 lb/hr of wastes.

An attempt was made to burn the wastes described in Table 4 after the incinerator was installed, but because molten salt accumulated in the throat, no more than a few hundred gallons of such wastes were ever handled in this unit.

The unit was last used in 1978 and was finally dismantled and sold for scrap in 1984. At that time, the components were water washed, and the washwater was discharged to the BRWTP (PPI, 1986).

Since no release has occurred from this unit, and it is no longer in operation, no immediate potential exposure of hazardous waste to humans or to the environment can be identified. However, given the problems associated with this unit during its operation, pollutants might have been released to the environment through air emissions.

4.7 SWMU 7 - Solid Waste Incinerator

The solid waste incinerator was a TRECOR model 75, two-chamber, controlled-air incinerator. It was designed to burn trash, pharmaceutical rejects, filter cakes, and so forth. It had a volume of 75 ft^3 and a secondary burner with a capacity of 200,000 BTU/hr. It operated on a batch cycle with a 24-hour turnaround so that its capacity was 75 ft^3/day of the material described in Table 1 above.

It is estimated that during the life of this unit, it probably processed no more than 200 tons of waste (PPI, 1986). The ash generated from this incinerator was believed to be solvent free. It was collected in 55-gallon metal drums and disposed of along with regular plant trash at the Barceloneta landfill. The unit was not used after 1979, and it has since been dismantled and scrapped. Prior to disposal, its components were washed, and the washwaster was discharged to the BRWTP.

There are no records of any release of the hazardous waste handled by this unit to the environment, except that the ash generated from this incinerator was disposed of in a municipal landfill. No information was provided on the efficiency of this unit to determine whether the ash was indeed nonhazardous. If the efficiency of this unit was low, then the ash could be hazardous and pollutant migration could have been through the Barceloneta landfill to the soil or ground water. Another potential migration pathway for the pollutants is through air emission.

No evidence of release was found during the VSI. As mentioned above, no documents have been provided to support PPI's contention that the ash was nonhazardous. Therefore, there is a slight possibility that release of hazardous material to the environment occurred. The overall potential for human exposure to hazardous wastes from this unit is minimal.

4.8 SWMU 8 - Rotary Kiln Incinerator

This incinerator was purchased in November 1980. It was included in the Part A Permit application submitted on November 18, 1980, because the understanding was that the unit met the contractual and permit requirements necessary for interim status as an existing waste management facility. Since its start up in 1981, it has probably been operated for a total of 2,400 hours, and has burned an estimated 600 tons of wastes (PPI, 1986).

This unit is located between the north and south drum areas (Figure 3). There is a low curb around the unit. Outside of the containment, the ground is sloped such that any spill would drain to a narrow ditch which leads to the BRWTP. This unit admits 60 gallons of waste liquor per hour or 600 pounds of solids per hour. The primary chamber is a rotary chamber, and the secondary is a gas chamber (Appendix A, photos 6a and 6b). The plant personnel informed Versar that this unit is fired by kerosene or by waste solvent when appropriate. The wastewater from the incinerator's scrubber, which contains hydrochloric acid (HCl), is neutralized by 50% caustic in the neutralization tanks (Appendix A, photo 6c) and discharged to the BRWTP. According to the plant personnel, this unit achieves 99.999% removal efficiency.

columns. The process waste pump station is an open concrete pit. During the VSI, the plant personnel would not allow Versar to take photographs above the pit because they feared that the volatile concentrations near the pit were high enough that the camera flash could set off an explosion. Air sampling is recommended from the waste pump station to determine the levels of explosive constituents.

Also, during the VSI, Versar noticed that the ground adjacent to the tanks was covered with black sand (Appendix A, photo 7c). The plant personnel explained that the black sand was from sandblasting the pipelines connected to these tanks.

The levels of hazardous contaminants in the process wastewater are much lower compared to the levels in other more concentrated waste streams generated at this plant (PPI, 1986). Also, the containment system is adequate to hold a sizable spill. Nevertheless, volatile organics are allowed to vent from the waste pump station directly into the air. This poses a threat to workers at the facility, because they may potentially be exposed to some hazardous constituents. Also, if there are cracks on the base of the waste pump pit, hazardous wastes could be released into the environment through soil and possibly ground water, posing a threat to the workers or neighboring residences. Versar was not able to determine the integrity of the base of the waste pump station since it was receiving wastewater at the time of the inspection.

4.10 SWMU 10 - Drum Storage Areas

The area in the vicinity of the rotary kiln incinerator has been used for drum storage since 1973. Recently, two distinct drum storage areas, referred to as the north and south drum storage areas, have been constructed (Figure 3). Each is an 800 ft^2 container storage area with a combined storage capacity of 528 drums. Each area has a collection ditch and is sloped to contain spills or leaks. Each storage area is surrounded by a 2-inch mesh No. 9 chain link fence that is 6 feet high. There is also a sliding gate on each side which is locked (Appendix A, photos 8a, 8b, 8c, and 8d).

In the event of a spill, waste collected in the ditch would be pumped to the incinerator-feed storage tank for incineration via a portable, air-operated diaphragm pump. If it is known that the waste spilled is primarily water and can be discharged to the BRWTP, then the discharge valve on the containment area is opened. The liquid flows to a pump station that is used to transfer the scrubber blow down of the incinerator to the industrial waste sewer system. This sewer system, which is constructed of concrete, discharges into the interceptor sewer that leads to the BRWTP.

The concrete slab that supports the drums was designed so that it could hold the load of three drums stacked vertically (approximately 500 lb/ft^2). There is a roof over the drum storage area to reduce radiant heat input and minimize run-on by precipitation. Also, topographic data show that the area surrounding the opening of the container storage area slopes away from the entrance, thereby eliminating surface water run-on.

Hazardous wastes are disposed of in 55-gallon drums in the Organic Synthesis area. The wastes are placed in either new or used empty drums. The drums are periodically transferred via forklift to the container storage areas. The wastes stored in the drums are listed in Tables 1, 2, and 3.

During the VSI, PPI personnel informed Versar that no known spills have occurred in the drum storage areas. Also, the storage areas are fenced and graded; thus, even if there had been a spill, it would have been contained in the ditch and pumped to the incinerator feed tank. However, the drums containing hazardous waste in the drum storage areas are stacked three high exceeding the fence line. There is a possibility that the top drums could roll over the fence and spill outside of the drum storage areas. If this happens, it could endanger the health of the workers nearby. Also, due to the proximity of the drum storage areas to an open trench leading to a number of sink holes, spills could get to the trench and contaminate the soil and possibly the ground water.

No release evidence was identified during the PR; however, some dead vegetation outside of the fence was noted during the VSI (Appendix A, photos 8c and 8d). Sampling is recommended from the areas outside of the fence.

4.11 SWMU 11 - Solvent Recovery Facilities

The solvent recovery facilities at PPI consist of two solvent recovery columns, associated feed tanks, and a solvent tank farm located in the northwest portion of the plant site (Figure 3 and Appendix A, photos 9a, 9b, and 9c).

The tank farm consists of 19 tanks and is divided into the following three sections (PPI, 1986):

1. The old tank farm east contains

   - Two 30,000-gallon, carbon steel, three-compartment tanks
   - Four 15,000-gallon, carbon steel, three-compartment tanks
   - One 15,000-gallon, stainless steel, three-compartment tank

2. The old tank farm west contains

   - Four 30,000-gallon, carbon steel, three-compartment tanks
   - One 30,000-gallon, stainless steel, three-compartment tank
   - One 30,000-gallon, carbon steel, one-compartment tank

3. The expansion tank farm contains

   - Four 30,000-gallon, stainless steel, three-compartment tanks
   - Two 30,000-gallon, Heresite-lined, carbon steel, three-compartment tanks.

Tanks in the first two farms were installed in 1973. They were installed underground without containment structures. The tanks in the expansion tank farm were installed in 1982. They are underground but within a concrete containment basin with sumps to collect any spillage for removal and proper disposal.

In 1984, a decision was made by PPI to upgrade the tanks in the east and west farms. This was partially due to corrosion of the nozzles and manways on a few of the tanks, but the primary objective was to prevent releases of hazardous substances to the environment. A plan was developed to remove, inspect, and renovate the tanks and to reinstall them in a newly constructed concrete containment basin. The basin would have sumps for the collection of rainwater and any leakage or spillage from the tanks. The project was approved by the Puerto Rico Environmental Quality Board and was undertaken in 1985 (PPI, 1986).

To the east of the tank farm, there are three above-ground tanks (Appendix A, photo 9b). Two of the tanks contain spent solvents awaiting recovery, and one contains fresh caustics. The spent solvents from the two solvent tanks and the tank farm are piped to the two solvent recovery columns. After the solvents are recovered, they are tested in the quality control lab located in the process building before being mixed with virgin solvent.

In 1986, PPI filed a petition requesting EPA to grant a variance on this solvent recovery unit to keep it from being listed as a SWMU, asserting that the unit is a closed-loop system and meets all the exclusion criteria (PPI, 1986). The EPA is still evaluating the petition. PPI is currently furnishing additional information requested by EPA.

Waste solvents that can be recycled are stored in the tank farm or in tne two solvent storage tanks before being discharged to the two solvent recovery columns. These solvents are listed in Tables 2 and 3. Since the processes change from time to time, the solvents used may also change.

Some discolored soil was observed by PPI while the tanks in the old tank farms were being excavated during the 1984 renovation. Since this soil was adjacent to the tank nozzles, PPI concluded that the cause of this condition was probably a tank overflow or a minor leakage from quick-connect coupling or from the tank nozzles (some of which were corroded). Because subsequent inspection and hydrostatic testing showed that none of the tanks leaked, there was no evidence of a continuing release. The discolored soil was removed from the tank farm during the excavation. This soil, along with the other excavated soils, was spread over an open area behind the plant for 4-6 months to allow for volatilization. Since most of the waste solvents are volatile organics, this treatment may have been adequate to decontaminate the soil. Samples from this soil, however, should have been collected to determine whether the residence time was adequate to release all the contaminants.

After the tanks were reinstalled, some of the aerated soil was used to backfill the exterior of the containment structure. The interior of the containment structure was backfilled with clean gravel. Process liquor handling and transfer procedures have been modified to eliminate overfilling and to minimize minor losses from quick-connect couplings.

Since no samples were collected from the discolored soil before or after the aeration, it is uncertain whether the soils are still contaminated or whether ground water contamination has occurred. There is a potential for pollutants from this SWMU to migrate through the subsurface. Therefore, soil samples should be collected from soils adjacent to the tank farm.

No visual evidence of a release was observed during the VSI. Nevertheless, PPI had reported leakage from the tank system to the soil in its Part B Permit application. No other releases of hazardous substances from the solvent recovery facilities are known to PPI.

Since the solvent recovery system is a closed-loop system, human exposure to hazardous waste from this unit is limited. However, there is evidence that soil was contaminated at one time with waste solvents. If the soil was not treated effectively, as described above, the potential for human exposure to the contaminants could still exist via ground water or by direct contact with the soil in the tank farm.

5.0 OTHER AREAS OF CONCERN

5.1 Leaking Drums

According to the 1986 Potential Hazardous Waste Site Preliminary Assessment report by EQB, approximately 30 waste drums at the PPI site were leaking (Morales, 1986). Since the leaking drums were situated on an undiked area, ground water may have been contaminated. Unfortunately, no detailed information regarding these drums was available.

5.2 Temporary Waste Storage Warehouse

After the underground storage tanks in the tank farm were excavated, they were stored in a temporary warehouse next to the tank farm. This warehouse contains no dikes or curbs to contain spills. Since this unit was not reported by PPI as an SWMU, and since little information was provided regarding this warehouse, a closer investigation of this warehouse is warranted to determine potential releases.

6.0 ENVIRONMENTAL INFORMATION

The PPI site is located in a rural area in the northern part of Puerto Rico. There is a food-processing industry to the east of the plant (Abbot), and there are pineapple fields to the south and to the west. Since the site is in the midst of food industries, it is critical that no contaminants migrate offsite and contaminate the food supply.

For approximately 20,000 people in the vicinity of the site, ground water is the primary drinking water supply. Therefore, if ground water is contaminated, it will pose a threat to public health. The nearest commercial/industrial facility is 0.3 miles from the site. These facilities may also utilize ground water as their primary water supply. The depth to the bedrock is 230 feet, and the water level onsite is 350 feet. The direction of groundwater flow has not been determined (Morales, 1986).

The annual net precipitation at the plant is 60 inches, and the plant is outside the 100-year flood plain. The sinkholes in the trench at the plant recharge the limestone aquifer, and the run-off from the plant discharges to the Manati River (Morales, 1986). The river is 3 miles east of the plant and it is not the primary drinking water supply for PPI's neighboring residence or industries.

There is insufficient information regarding the volume and characteristic of any air emission from the PPI facility. Due to the proximity of the pineapple fields and the residential areas, emission of hazardous wastes or constitutents from the PPI facility could pose a threat to human health or the environment.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary of Findings

The information obtained from the EPA Region II office and the EPA Caribbean field office on the PPI Barceloneta facility provided a general overall picture of the SWMUs at PPI, but it did not provide detailed descriptions of the waste characteristics or of the waste collection and treatment operations. Information collected during the VSI bridged some of these information gaps. The remaining information gaps are listed in Section 7.3.

Documents indicate that two and potentially three spills or leaks have occurred in the past at PPI. The 47,000-gallon waste storage tank exploded in 1981, releasing approximately 2,500 gallons of diluted waste to the ground, the trench, the sinkholes, or air. In 1984, when the plant upgraded the old tank farm, discolored soil was noted near the nozzles and manways on some underground waste storage tanks. The soil was excavated, natural evaporation of the volatile organics was allowed to occur, and backfilling was subsequently performed. The soil was not anaylzed before backfilling.

In 1986, during an inspection at the PPI facility, EQB personnel observed that approximately 30 drums were leaking onsite. Unfortunately, no other details of this incident were recorded.

PPI identified 11 SWMUs at the Barceloneta facility. Seven of the SWMUs are still in operation, four have been dismantled and sold, and two have had spills as listed below:

1. Operating SWMUs:

   SWMU 1 - Waste Storage Tank/Fire Protection Tank
   SWMU 2 - Waste Storage Tank/Fuel Oil Tank
   SWMU 4 - Spent Solvent Tank
   SWMU 8 - Rotary Kiln Incinerator
   SWMU 9 - Three Waste Equalization and Neutralization Tanks
   SWMU 10 - Drum Storage Areas
   SWMU 11 - Solvent Recovery Facility

2. Scrapped and Sold SWMUs:

SWMU 3 - Waste Storage Tank
SWMU 5 - Evaporator/Incinerator
SWMU 6 - Liquid Waste Incinerator
SWMU 7 - Solid Waste Incinerator

3. Spilled/Leaked SWMUs:

SWMU 3 - Waste Storage Tank
SWMU 11 - Solvent Recovery Facility

7.2 Units Requiring Further Action

Since sampling was not conducted after the two spills, the PPI Barceloneta facility should be visited again, and samples should be collected from appropriate locations, as described below.

The 47,000-Gallon Waste Storage Tank: This waste storage tank was located behind the existing rotary incinerator. Mr. Carlos Lopez, PPI's Technical Service Manager, informed Versar during a telephone conversation on July 16, 1987, that the contents of this tank were washed into the trench behind the rotary incinerator after the explosion. Since sinkholes are located in the trench, Mr. Lopez said the waste was discharged to the ground through the sinkholes. PPI reported the contents of the tank in Table 4 and it also stated that a sample was collected in such a way that the solvent contents in the tank could have been missed. It is Versar's observation that the sample was not analyzed for the appropriate constituents. (PPI claimed that the waste solvents were mostly volatile organics, as listed in Table 3, but the sample was analyzed for metals and other inappropriate parameters, as indicated in Table 4.)

If the spilled contaminants were mostly volatiles, most would have probably volatilized at the time of the spill. Nevertheless, Versar recommends that soil samples be collected from the trench closest to the tank location, and from the sinkholes if conditions allow, to determine if surface or subsurface soils have been contaminated. If the subsurface soil has high levels of contaminants, ground-water sampling might be warranted at a later date.

The samples should be analyzed for volatile organics, metals, and any suspected Appendix VIII constituents (Tables 1 and 2).

Tank Farm: The soil in the tank farm was reported to be contaminated by PPI. However, after excavation of the soil and volatilization, no samples from the soil were collected before backfilling. To ensure that no or only minimal contaminants leached into the subsurface soil, potentially causing ground-water contamination, samples of the soil around the tank farm should be collected. If the subsurface soil is contaminated with high levels of contaminants, ground-water sampling may be warranted at a later date.

Waste Storage Tank/Fuel Oil Tank: During the VSI, dead vegetation was found outside the fuel oil tank containment (Appendix A, photo 2b). Previous spills might have killed the vegetation. Soil sampling is recommended for areas outside of the fuel oil tank.

Drum Storage Areas: At the rear of the North Drum Storage Area, dead vegetation was also noted during the VSI (Appendix A, photos 8b and 8c). Since the drums are stacked three high above the fence line, spills could have occurred in the past. Soil sampling in this area is recommended.

Waste Pump Station: The waste pump station is the collection sump for the neutralization/equalization tanks. During the VSI, PPI plant personnel refused to let the inspectors take photographs near the sump, because they were concerned that concentrations of volatiles above the sump were high enough that a flash bulb could set off an explosion. If the volatile emissions from this sump are this high, operating the sump without any treatment could endanger the health of the workers. Therefore, air samples from this waste pump station should be collected.

7.3 Information Gaps

Additional information should be collected from PPI to fully characterize the SWMUs at this facility. The following data are still needed:

- Geological and hydrological data.
- Detailed analyses of the three types of wastes.

- Data on the efficiency of the rotary incinerator to ensure no contaminants are released through air emissions.

- Information on the 30 leaking drums.

- More information on the types of wastes treated by each SWMU. In particular, if only solvent-free wastes are discharged to the neutralization/equalization tanks, explain the reason for volatile emission from the waste pump station.

- More information on the nearby residential areas and the food industry. For example, studies of the emissions (both via air and the sinkholes) from the facility that may affect the nearby food industries.

- More information on the distance between the facility and the surface waters, and the uses of surface waters.

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DRAFT FINAL REPORT
RCRA FACILITY ASSESSMENT
PFIZER PHARMACEUTICALS, INC.
BARCELONETA, PUERTO RICO

Prepared for

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1.0 INTRODUCTION

CDM Federal Program Corporation (FPC) received work assignment (WA) No. 460 to conduct a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) of Pfizer Pharmaceuticals, Inc. (PPI), EPA I.D. No. PRD090346909, in Barceloneta, Puerto Rico. This assignment was subcontracted to Versar, Inc., with the work being performed for U.S. EPA Region II under the Technical Enforcement Support Contract No. 68-01-7331. The EPA primary contact is Doug Pocze.

A preliminary review (PR) of file information about the Pfizer Pharmaceuticals facility was performed using documents collected from the U.S. EPA Region II office in New York in order to begin the PR of the facility. Additional information was gathered from the EPA Caribbean Field Office and the Commonwealth of Puerto Rico Environmental Quality Board (EQB) office in Santurce, Puerto Rico. Versar examined the documents and other written material to identify solid waste management units (SWMUs) and other areas where wastes have been managed at the facility. Versar also obtained information on the facility's location, waste characteristics, evidence of past releases, and potential environmental receptors.

A visual site inspection (VSI) for PPI was conducted by Versar and guided by facility representatives on Thursday, June 25, 1987. The facility was visually assessed to identify evidence of releases, to ensure that all SWMUs and areas of concern have been identified, and to fill in any data gaps previously identified.

The findings of these initial phases of the RFA process have been summarized in the Interim RCRA Facility Assessment Report, Pfizer Pharmaceuticals, Inc., Barceloneta, Puerto Rico, submitted on January 11, 1988. Based on the findings of that report, a sampling visit (SV) was performed at the facility on September 18, 1987. During the SV, a total of 19 environmental samples, including QA/QC samples, were collected (15 surface soil, 2 subsurface soil, and 2 water samples). PPI collected split samples

with Versar during the sampling visit. This Final RFA Report presents the results of these analyses, and evaluates releases from SWMUs or other areas of concern previously identified. PPI submitted the data that it had obtained through its split sampling effort to EPA, who presented it to Versar. This data was reviewed and taken into consideration while drawing conclusions regarding releases at the SWMUs at the site.

2.0 RFA SAMPLING VISIT OBJECTIVES

The sampling visit is the final step of the RFA process designed to identify releases of hazardous waste or hazardous waste constituents at RCRA facilities. The results of this SV focused on the collection and analysis of sampling data to substantiate releases from selected solid waste management units (SWMUs) or other areas of concern. Data and information gaps identified during the earlier preliminary review and visual site inspection of the Pfizer Pharmaceuticals, Inc., facility were also filled during the SV. The results of this SV will provide release determinations to investigators and thus guide appropriate enforcement actions.

The SV performed at PPI involved the collection of 19 environmental samples including surface soil, subsurface soil and water. The specific objectives of the sampling visit at the PPI facility were as follows:

- Identify evidence of a release of hazardous wastes or hazardous constituents to surface or subsurface soils by collecting samples from the area of dead vegetation near the waste storage tank/fuel oil tank

- Identify evidence of a release of hazardous wastes or hazardous constituents to surface soil, subsurface soil, and sinkholes by collecting samples from the trench and sinkholes near the previous location of the 47,000-gallon waste storage tank

- Identify the potential for a release to the air by collecting a water sample from the waste pump station and monitoring the air for the presence of organic vapors and/or explosive conditions in the vicinity of the equalization and neutralization tanks

- Identify evidence of a release of hazardous wastes or hazardous constituents to surface or subsurface soils by collecting samples in the area of dead vegetation near the drum storage areas

- Identify evidence of a release of hazardous wastes or hazardous constituents to subsurface soils by collecting samples from the soil around the tanks in the tank farm, which is part of the solvent recovery facilities.

3.0 SAMPLING PLAN APPROACH

The technical approach taken for the sampling visit was based on specific recommendations in the Final Interim RFA Report for Pfizer Pharmaceuticals, Inc. (CDM FPC, 1988). This document contains data and information from U.S. EPA Region II and from the Puerto Rico Environmental Quality Board. This information was evaluated during the preliminary review and subsequent visual site inspection phases of this RFA. Sampling was generally limited to areas for which data gaps exist. All samples collected by Versar were analyzed under the EPA Contract Laboratory Program (CLP) Routine Analytical Services Agreement for organic and inorganic analyses. A brief summary of each SWMU sampled and the rationale for sampling is provided below. Figure 1 identifies the SWMU locations and sampling locations at PPI.

3.1 Waste Storage Tank/Fuel Oil Tank

The waste storage tank/fuel oil tank was used as a waste storage tank for process wastes awaiting transfer to the ocean barging facility at Arecibo, Puerto Rico. In 1980, this tank was emptied, and a 47,000-gallon tank (SWMU 3) was substituted in its place. It was then converted to a fuel oil storage tank.

The tank is currently located in a containment area with another fuel oil storage tank, a kerosene storage tank and a caustic storage tank. During the use of this tank for waste storage, no release of hazardous wastes or hazardous constituents was recorded. However, during the VSI, Versar noted some dead vegetation outside the containment dike adjacent to the location of the tank.

Two grab surface soil samples (SS-1, SS-1a) were collected from the area outside the containment dike adjacent to the location of the tank. A portion of each grab was analyzed for volatile organics. A composite of

the two grab surface soil samples was analyzed for base/neutral/acid (BNA) extractables and metals.

3.2 47,000-Gallon Waste Storage Tank

The 47,000-gallon waste storage tank was used for the storage of process wastes for transfer to the ocean discharge barging facility from mid-1980 to mid-1981. In September 1981, PPI began using the Barceloneta Regional Waste Water Treatment Plant (BRWWTP), and the use of the 47,000-gallon tank for waste storage ceased. According to PPI, the tank was cleaned with water after being taken out of service. In November 1981, PPI decided to use the tank for process waste equalization and neutralization at another location in the plant. While attempting to move the tank, the lifting lugs were torn off. During the process of repairing the lugs by welding, the tank exploded, spraying liquid material form the bottom of the tank over an area of approximately 8,000 square feet. PPI assumed that the explosion was caused by ignition of solvents from either a layer on top of the liquid in the tank or from solid material on the walls of the tank.

Volatile materials in the waste most likely evaporated into the air following the explosion. PPI informed Versar that no sampling was performed, nor was the soil affected by the explosion excavated. PPI allowed the washwater to drain into the sinkholes which are located next to the previous location of the tank.

Three grab surface soil samples (SS-2, SS-2a, SS-3), and two grab subsurface soil samples (SS-4, SS-5) were collected from the area near the previous location of the tank. One of the subsurface samples and one of the surface samples were collected in the trench. The other grab samples were taken in the sinkhole that is nearest to, and downgradient of the previous location of the tank. All grab subsurface samples were analyzed for VOCs, BNA extractables, and metals. A portion of each surface grab was analyzed for volatile organics. A composite of the three grab surface soil samples was analyzed for BNA extractables and metals.

3.3 Drum Storage Areas

The area around the present incinerator has been used for drum storage since 1973. Recently, two distinct drum storage areas, referred to as the north and south drum storage areas, have been constructed. During the VSI, the drums containing hazardous waste were stacked three high and the highest drum was above the fence line. There is the possibility that the drums could fall over the fence and spill outside the drum storage areas. Some areas of dead vegetation and soil discoloration were noted behind the drum storage area in the photographs (contained in the Sampling Trip Report, CDM 1987) taken during the VSI.

Two grab surface soil samples (SS-7, SS-7a) were collected from the area outside the north drum storage area. A portion of each grab was analyzed for volatile organics. A composite of the two grab surface soil samples was analyzed for BNA extractables and metals.

3.4 Solvent Recovery Facilities

The solvent recovery facilities at PPI consist of two solvent recovery distillation columns, associated feed tanks, and a solvent tank farm located in the northwest portion of the plant site. The tank farm contains 19 tanks. In 1984, PPI decided to upgrade those portions of the tank farm which required secondary containment. This was partially due to the corrosion of the nozzles and the manways on some of the tanks, but the primary objective was to prevent releases of hazardous constituents to the environment. The tanks were removed, inspected and reinstalled in a newly constructed concrete containment basin.

During the excavation of the tank farms, some discolored soil was observed by PPI. Since this soil was adjacent to the tank nozzles, PPI concluded that the cause of this condition was probably tank overflow or a minor leak from the tank nozzles (some of which were corroded). The soil,

along with other excavated soils, was spread over an area behind the plant for 4-6 months to allow volatilization. Some of this aerated soil was used as backfill around the exterior of the concrete containment structure.

During the sampling visit, seven surface soil samples (SS-8, SS-9, SS-10, SS-11, SS-110, SS-13, SS-15), including one duplicate were collected from around the tank farm. Although the Sampling Visit Work Plan had specified that eight samples would be collected from the area, one of the samples was deleted from the sampling activities in the field due to the presence of impermeable material at that location. The samples were originally intended to be subsurface samples collected at depths determined in the field to yield the most representative sample. During the sampling visit, PPI informed Versar that the bottom of the tank farm extended to 20 feet below the ground surface. Additionally, the area surrounding the tank farm was covered by approximately 6 to 8 inches of gravel. Due to time constraints and the inability to obtain deep samples, Versar collected all samples from the area just below (0 to 6 inches) the gravel surface.

3.5 Waste Equalization and Neutralization Tanks

The three waste equalization and neutralization tanks provide 24-hour storage, equalization, and neutralization for the plant process wastewaters. The tanks are located on a concrete pad and are surrounded by a 2 to 3-foot containment wall.

The tanks are located across from the manufacturing process area and across from the solvent recovery distillation columns. Next to the distillation columns is a process waste pump station which feeds the equalization/neutralization tanks. The process waste pump station is a concrete lined sump. During the VSI, the plant personnel would not allow Versar to take photographs above the concrete lined sump because they feared that a camera spark could set off an explosion. The volatile organics that are allowed

to vent from the pump station directly into the air may pose an inhalation threat to the workers at the facility as well as an explosion hazard.

One water sample (ET-1) was collected from the waste pump station to determine the presence of contaminants and the potential for release to the air. This sample was analyzed for volatile organics, semi-volatile organics, and total metals.

4.0 SAMPLING VISIT RESULTS

Environmental samples collected for the sampling visit were for inorganic and organic analyses. A summary of analytical results for inorganic and organic values are presented in Tables 1 and 2, respectively. Additional data consists of the analytical results obtained by PPI. This data is presented in Tables 3 and 4. Finally, tentatively identified polychlorinated biphenyls (PCBs) in PPI samples are presented in Table 5.

4.1 Background

In order to evaluate the data and determine if releases have in fact occurred at the facility, a measure of background levels had to be established. Thus, a single background surface soil sample (BG-1, see Figure 1) was collected from an onsite location during the sampling visit. The sample showed no organic contamination, except for some unknown tentatively identified compounds, which were also found in the blank and are most likely attributable to laboratory or field contamination. Sixteen metals were quantified in the single background surface soil sample that was collected. In order to determine if this sample represents the true background levels at the site, several documents were reviewed which provided background levels found in samples taken from various areas of the world. Table 6 presents the values found to represent background in nature and the results of the background sample at PPI. All the values found at PPI were within the limits considered to be background. Thus, this sample was considered to represent the background levels at the site.

4.2 Metals Results

Although the arsenic data collected by Versar have been flagged as estimated by the EPA data validation reviewer due to low spike recoveries and correlation coefficients outside the acceptable range for the method of standard addition, samples taken from the solvent recovery area near the

TABLE 1
SUMMARY OF INORGANIC ANALYSES OF VERSAR/EPA SAMPLES*

Parameter mg/kg (ppm)	Waste Storage/ Fuel Oil Tank	47,000-Gallon Tank				Drum Storage Tank	Solvent Recovery Area							Waste Equalization Tanks
	SS-1	SS-2	SS-3	SS-4	SS-5	SS-7	SS-8	SS-9	SS-10	SS-11	SS-11D	SS-13	SS-15	ET-1**
Aluminum	13400.0	25000.0	21500.00	18400.0	15500.0	13200.0	15000.0	11200.00	7060.0	9170.0	7870.0	7400.0	6840.0	277.0
Arsenic	33 J	41 J	48 J	36 J	38	23 J	35 S J	26 J		19 J	22	326 J	321 J	
Barium	29.0 A	123.0 A	64.0 A	153.0 A	32 A	2130	19.0 A	17.0 A	8.5 A	15.0 A	13.0 A	8.0 A	7.5 A	14.0 A
Beryllium	ND					4.0								
Cadmium	ND	11.0	3.9	13.0		3.8				3.2				
Calcium	664.0 A	37400.0	11300.0	40500.0	3150.0	11300.0	799.0 A	964.0 A	12900.0	3250.0	3970.0	1250.0 A	1580.0 A	52800.0
Chromium	86.0 J	139.0 J	134.0 J	112.0 J	110.0 J	148.0 J	91.0 J	69.0 J	40.0 J	66.0 J	56.0 J	47.0 J	51.0 J	54.0
Cobalt	17.0 A	18.0 A	20.0 A	14.0 A	15.0 A	29.0	16.0 A	13.0 A		13.0 A	11.0 A	9.4 A	11.0 A	
Copper	15.0	91.0	61.0	122.0	18.0	819.0	10.0 A		145.0	7.7 A	7.1 A	9.2 A	6.7 A	36.0
Iron	31500.0	46300.0	50900.0	39100.0	40200.0	49800.0	30100.0	23800.0	17200.0	20600.0	19800.0	18800.0	19700.0	2290.0
Lead	16	90	54	116	28	836.0 J	15	14	37	12	14	80	215.0 J	95
Magnesium	597.0 A	1640.0 A	875.0 A	1790.0 A	547 A	1390.0 A	390.0 A	474.0 A	263.0 A	298.0 A	379.0 A	359.0 A	303.0 A	3980.0 A
Manganese	1350.0	664.0	1110.0	533.0	1290.0	746.0	957.0	987.0	155.0	1010.0	764.0	558.0	518.0	34.0
Mercury		0.3	0.7	0.2	0.2	0.3		0.2						
Nickel		103.0	72.0	97.0	29.0	347.0								46.0
Potassium		686 A	452 A	654 A		528 A	401 A							176000.0
Selenium						4.9								
Sodium		4720.0 A		4100.0 A		2820.0								925000.0
Tin			26.0			243.0			30.0			20.0 A		
Vanadium	85.0 J	222.0 J	161.0 J	192.0 J	120.0 J	81.0 J	78.0 J	42.0 J	41.0 J	54.0 J	48.0 J	43.0 J	46.0 J	
Zinc	31.0	396.0	259.0	396.0	99.0	2210.0	27.0	20.0	256.0	15.0	14.0	186.0	55.0	93.0

A = Below level of quantitation

J = Estimated concentration

* = Where values are not given, parameters were not detected.

** = Concentration in ug/l

TABLE 2
SUMMARY OF ORGANIC ANALYSES OF VERSAR/EPA SAMPLES*

Parameter (ug/kg)	Waste Storage Tank/ Fuel Oil Tank		47,000-Gallon Tank					Drum Storage Area[B]			Solvent Recovery Area					Waste Equalization Tanks
	SS-1	SS-1A	SS-2	SS-2A	SS-3	SS-4	SS-5	SS-7	SS-8	SS-9	SS-10	SS-11	SS-11D	SS-13	SS-15	ET-1**
Semivolatiles:																
di-n-butylphthalate		NA		NA												
bis(2-ethylhetyl)phthalate		NA	180.0 J	NA							97.0 J				3700.0	
phenol		NA		NA									180.0 J	710.0	2100.0	14.8
naphthalene		NA		NA											1300.0	
benzo(a)pyrene		NA		NA											180.0 J	
Volatiles:															560.0	
methylene chloride	11.0	21.0														
ethylbenzene			790.0	740.0		1900.0						50.0				
total xylenes			4200.0	1940.0		6800.0		16.0								
chlorobenzene						50.0										620.0
acetone	17.0															
vinylacetate																6800.0
benzene						15.0 J			2.0 J							1100.0

B = All parameters in SS7a were not detected.
J = Estimated values
* = Where values are not given, parameters were not detected.
** = Concentration in ug/L
NA = Not analyzed

TABLE 3
SUMMARY OF INORGANIC ANALYSES CONDUCTED BY PFIZER PHARMACEUTICALS*

Parameter mg/kg (ppm)	47,000-Gallon Tank				Drum Storage Area	Solvent Recovery Area		
	SS-2	SS-3	SS-4	SS-5	SS-7	SS-8	SS-9	SS-15
Arsenic	87.0	114.00	82.00	71.00	48.00	54.0	59.00	88.00
Beryllium					4.80			3.30
Cadmium		3.00	8.20	2.40	3.30			5.10
Chromium Total	130.0	130.00	110.0	88.0	150.00	71.00	75.00	240.00
Copper	92.00	54.00	99.00	42.00	1200.00	13.00	15.00	1500.00
Lead	84.00	52.00	84.00	33.00	1000.00	13.00	17.00	980.00
Mercury	0.48	0.53	0.38	0.34	0.23	0.21	0.26	0.12
Nickel	90.00	65.00	88.00	50.00	430.00	11.00	14.00	180.00
Silver			2.60					
Zinc	320.00	190.00	290.00	160.00	2500.00	22.00	22.00	3000.00

*Where values are not given, parameters were not detected.

TABLE 4
SUMMARY OF ORGANIC ANALYSES CONDUCTED BY PFIZER PHARMACEUTICALS*

Parameter µg/kg	47,000-Gallon Tank				Drum Storage Area		Solvent Recovery Area	
	SS-2	SS-3	SS-4	SS-5	SS-7		SS-8	SS-9	SS-15
Semivolatiles:									
4-chloro-3-methylphenol							540.00		
Di-n-butylphthalate									1800.00
bis(2-ethylhexyl)phthalate	3600.00		7400.00						4800.00
di-n-octylphthalate		2900.00							
Volatiles:									
methylene chloride	34		17		28	27			
acetone	280		130		100	53			
benzene	8		8			1 J			
toluene	18		14		12	11			
chlorobenzene	19	96	48	85					
ethylbenzene	410	1600	1000	1600	22	7			
xylene	1600	1700	1400	1700	43	17			

* = Where values are not given, parameters were not detected.
J = Estimated concentration

TABLE 5

SUMMARY OF TENTATIVELY IDENTIFIED POLYCHLORINATED BIPHENYLS (PCBs) IN THE ORGANIC ANALYSES CONDUCTED BY PFIZER PHARMACEUTICALS*

Parameter ug/kg	Retention Time	47,000-Gallon Tank				Drum Storage Area	Solvent Recovery Area		
		SS-2	SS-3	SS-4	SS-5	SS-7	SS-8	SS-9	SS-15
PCBs	21.57								
	22.87	7000 J		4000 J					3000 J
	23.45			9000 J					
	24.10	9000 J							
	24.60				500 J				

* = Where values are not given, PCBs were not tentatively identified.
J = Estimated concentration

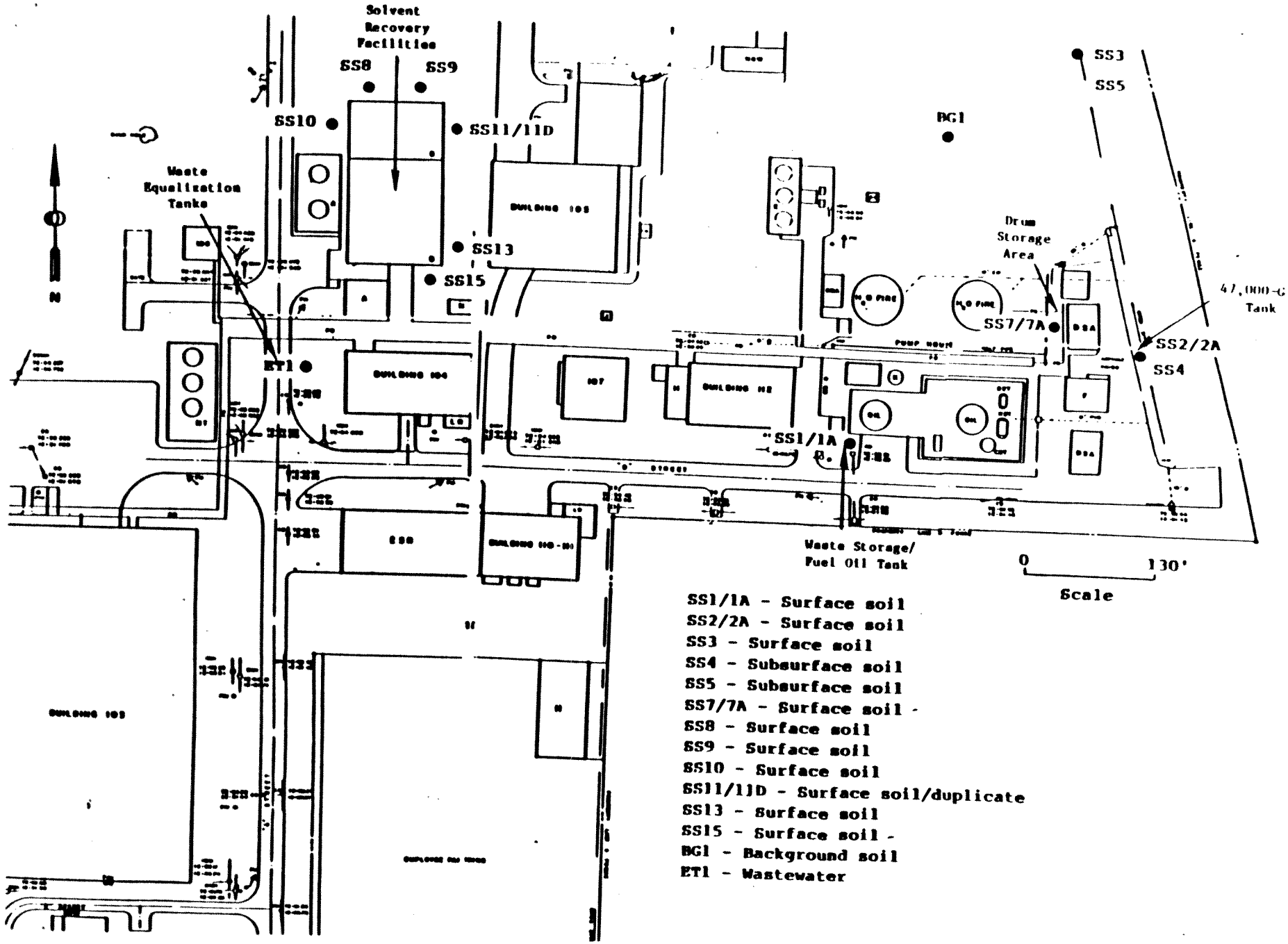


FIGURE 1
SAMPLING LOCATIONS, PFIZER PHARACEUTICALS, INC.,

TABLE 6
BACKGROUND COONCENTRATION OF METALS (ppm) IN SOIL

Element	Soil Average[1]	Range of Soil Concentration[1]	Versar/ EPA	PPI
Aluminum	71,000	10,000-300,000	8,640	
Arsenic	6	0.1-40	22	47
Barium	500	100-3,000	11[2]	
Cadmium	0.06	0.01-0.7	<2.3	<1
Calcium	13,700	7,000-500,000	3,200	
Chromium	100	5-3,000	56[2]	70
Cobalt	8	1-40	7.3[2]	
Copper	20	2-100	15	18
Iron	38,000	7,000-550,000	19,500	
Lead	10	2-200	25	22
Magnesium	5,000	600-6,000	434[2]	
Manganese	850	100-4,000	554	
Mercury	0.03	0.01-0.3	<.1	.14
Nickel	40	10-1,000	13[2]	
Vanadium	100	20-500	76	
Zinc	50	10-300	64	

1 Occurrence of elements in surface soils (Bowen 1966)
2 Estimated value

underground storage tank farm (SS-13 and SS-15) were estimated to contain 14 times the background level of arsenic found at the site. These levels are significantly higher than the background level of arsenic, and the levels of arsenic found at the other sampling locations. However, since it is unknown whether PPI uses arsenic in its production processes, and the source of arsenic is speculative, a release determination cannot be made for arsenic.

The analytical data from the samples collected by Versar from the solvent recovery area near the underground storage tank farm (SS-13 and SS-15) also shows high levels of lead. These samples are reported to contain 3 to 9 times the background level of lead. High levels of lead were also found at samples taken near the 47,000-gallon tank (SS-2, SS-3, and SS-4), and at the drum storage area (SS-7). Although the QA/QC information was not available, it is known from the EPA reviewer's comments that the spike recoveries were very low and duplicate analyses were not run for lead analyzed by ICP. Therefore, the results for SS-15 and SS-7 were flagged by the EPA reviewer as estimated. Pfizer has offered an explanation for the lead levels as attributable to the piping on the site and the corrosive atmosphere. The presence of lead could also be the result of a leak or spill of leaded gasoline (see Section 4.3).

Pfizer contends that the contamination with copper, nickel, chromium, zinc and lead which has been found throughout the site in both the Versar/EPA and PPI data is due to the presence of a corrosive atmosphere and the surface coating operations that take place on the site to prevent corrosion. This is a plausible explanation for the presence of the metal contaminants based on the constituents in surface coating agents commonly used in industry. In fact, this is a common problem on sites where extensive sand blasting has taken place (Bongers, 1988). If possible, Pfizer should seek a solution to this problem in order to cease the contamination of the soil with these metals, which could eventually find their way into the groundwater underlying the site.

4.3 Organic Results

Characteristics of organic contaminants and release evidence from selected solid waste management units or other areas of concern are presented below by unit.

47,000 Gallon Tank

The analytical results of the samples collected by Versar for the area of the 47,000-gallon tank show xylenes, ethylbenzene, an estimated level of bis(2-ethylhexyl)phthalate, and one low result for chlorobenzene. PPI's data shows similar volatile results, with the addition of very low levels of benzene and toluene, and a more consistent showing of chlorobenzene. The semi-volatile results show considerably higher levels of phthalates.

The fact the benzene, toluene, ethylbenzene and xylenes are found together at the site leads Versar to assume that a gasoline spill or leak has occurred in this area of the plant. This is further supported by the presence of lead (possibly from leaded gasoline) at levels higher than the background concentration at sampling locations SS-2, SS-3, and SS-4. Additionally, chlorobenzene, although not a constituent of gasoline, has been known to appear in the mass spectral data of samples contaminated with gasoline (Christopher, 1988). The fact that the levels of benzene and toluene are so low leads Versar to believe it was a spill, rather that a consistent leak, that has occurred. In this case benzene and toluene, being the lighter constituents, may have volatilized at a faster rate than ethylbenzene and xylenes. Additionally, microbial degradation may have contributed to the lower levels of benzene and toluene.

Since the samples were collected from a drainage ditch, it is possible that Pfizer used the ditch for washwaters while cleaning a gasoline spill from the paved area near the ditch. The levels of xylenes and ethylbenzene are too high to be attributable to run-off from normal operation of plant

vehicles. Versar recommends that Pfizer discontinue its practice, if this is the case, of directing rinse waters from spills to the drainage ditch.

The presence of phthalates in samples SS-2, SS-3, and SS-4 could be attributed to several factors. Since the phthalates were found in Pfizer's data and not Versar/EPA's data, (except for one estimated low value at SS-2), it is possible that the values are due to sample contamination, either from the laboratory or the field; or, the values could be attributable to a non-homogeneous sample; or, the values could be attributed to a sample in which a piece of plastic was inadvertently included. The values for bis(2-ethylhexyl)phthalate, the more toxic of the phthalates that were identified, are not extremely high, and are less than three times the detection limit: 3,600 parts per billion (ppb) and 7,400 ppb. The EPA CLP allows 5 times the Contract Required Detection Limit of phthalate esters in method blanks before declaring them invalid (EPA, 1987). This is due to the frequency that these compounds are found in samples. The value for di-n-octyl-phthalate was 2900 ppb, about seven times the detection limit. Thus, due to the relatively low levels, and the fact that only one laboratory identified them, it is reasonable to assume that the presence of these phthalates is due to sample contamination. However, Pfizer has stated that it does use the phthalates in production processes and in quality control operations (Lopez, 1988). Phthalates were also found in sample SS-15 (see discussion below) and are assumed to be more credible in that sample. If, during the investigation of the underground storage tank area at the solvent recovery facilities, phthalates are positively identified, Versar recommends investigation of the 47,000-gallon tank.

An important observation was made regarding the tentatively identified compounds in the semi-volatile fraction of the PPI's organic data. The results for SS-2, SS-4, and SS-5 tentatively identified some known and unknown polychlorinated biphenyls (PCBs). The mass spectrums of chlorinated compounds are fairly definitive, especially for PCBs, and the results can

therefore be considered reliable (Hamner, 1988). As this is not under the authority of RCRA, Versar recommends that the Office of Toxic Substances be notified.

Solvent Recovery Area

The samples collected from around the solvent recovery area underground storage tank farm were, for the most part, free from organic contaminants. However, SS-15 produced results which warrant further investigation. In both the organic data from Versar/EPA and PPI, bis(2-ethylhexyl) and di-n-butyl phthalates were observed. Additionally, benzo(a)pyrene and phenol were reported in the Versar/EPA data, and tentatively identified PCBs were reported in the Pfizer data. Although it is unusual to find benzo(a)pyrene without other polyaromatic hydrocarbons (PAHs), it is an easily recognizable compound, as is phenol, and is considered to be a valid result (Hamner, 1988). Additionally, benzo(a)pyrene is an animal carcinogen, and is suspected of being active in humans (U.S EPA, 1984). It is possible that the presence of benzo(a)pyrene is due to run-off of gasoline combustion products from the plant roads.

It is known that Pfizer uses phenol in its production processes (it is found as an off-specification commercial product which makes up part of Pfizer's waste (CDM, 1988)), and that it uses the phthalates in the production processes and in quality control operations (Lopez, 1988). The fact that both laboratories identified the presence of the two phthalates lends credibility to the assumption that they do in fact exist in the soil at SS-15. Thus, it is possible that these materials were either released recently from the tank farm area, or in the past during the operation of the previous tank farm. If the latter is the case, the semi-volatiles would not have volatilized while the soil was spread out on-site.

Waste Equalization and Neutralization Tanks

The major concern associated with this SWMU was the release of volatile organic constituents into the air above the open waste pump station. Therefore, the main concern with the sample is the levels of volatile organic constituents. The results of the volatile analysis for sample ET-1 are found in Table 2. The primary volatile constituents of concern are xylene, acetone, and vinyl acetate. Xylene and acetone are of concern due to their flammability. Since acetone was found in the blank, as well as the sample, it is probable that acetone was a laboratory contaminant. Xylene was found at a low concentration, and is therefore not a major concern at this time. However, the levels of xylene and acetone in the air above the waste equalization tank should be monitored regularly with a combustible gas indicator to determine if an explosive atmosphere is being created in the area.

Vinyl acetate is a colorless, mobile liquid, that polymerizes to solid on exposure to light. It has a vapor pressure of 83 mm Hg at 20 C and is highly soluble in water (25,000 mg/l). Vinyl acetate is highly dangerous when exposed to heat or to a flame. When heated, it produces acrid fumes which can react with oxidizing materials.

Vinyl acetate exhibits low toxicity. It acts as a skin irritant by its defatting action. It causes slight and reversible irritant action when exposed acutely or chronically. High concentrations of vinyl acetate are narcotic, but are formed only if an inhibitor is present. The ACGIH has established TLVs for vinyl acetate of 10 parts per million (ppm) and 30 milligrams per cubic meter (mg/m^3).

Henry's Law was used to estimate the vapor concentration of vinyl acetate in the air surrounding the waste pump station open tank. The Henry's law constant for vinyl acetate was estimated using Lyman et al. 1982. The calculations are presented in full in Appendix A. The concentration estimated above the open tank is 23.0 mg/m^3. Although the estimated

concentration of vinyl acetate is below the threshold limit value (TLV) recommended by the American Conference of Governmental Industrial Hygienists (ACGIH), it does approach it. Therefore, it is recommended that the level of vinyl acetate above the waste equalization tank be monitored to determine if the actual level does exceed the ACGIH TLV.

5. CONCLUSIONS AND FINAL RFA RECOMMENDATIONS

5.1 Summary of Releases

Solvent Recovery Area

High levels of arsenic were observed in samples SS-13 and SS-15, which were taken from the soil surrounding the underground storage tank farm. Phthalates and phenol were observed in sample SS-15 collected from the soil surrounding the underground storage tank farm. The phthalates and phenol are used by Pfizer in the production processes and the phthalates are used in quality control operations. Thus, it is a reasonable assumption that these constituents may be present in one or more of the tanks in the underground storage tank farm, or that they were present in the tank farm before it was upgraded. The contaminants may have been released recently, or may have been released in the past and were not removed during the treatment which was performed for the soil from the previous underground tank farm. Additionally, benzo(a)pyrene, which is a known animal carcinogen and a suspected human carcinogen, was identified in this sample. Finally, tentatively identified PCBs were found in the sample.

5.2 Units Requiring Further Action

Solvent Recovery Area

Versar recommends further small-scale investigation of the area around the location of sample SS-15. Samples collected from deeper levels are recommended to determine the validity and origin of the organic contaminants, as well as high levels of arsenic, found during the RFA. Versar also recommends that samples be taken from the area on-site where the contaminated soil from the previous tank farm was spread out. The origin of the current contamination could be a past release from the previous

underground storage tank farm in which the contaminants were not removed from the soil then the soil was spread out on-site, or a current release from the current underground storage tank farm.

47,000-Gallon Tank Area

The ditch next to the previous location of the 47,000-Gallon Tank revealed volatile organics indicative of gasoline contamination. This is thought to be due to the directing of a gasoline spill or leak from the paved area into the ditch. Versar recommends that this practice no longer be followed and that PPI revise their Spill Prevention, Control, and Countermeasures Plan (SPCC).

Pthalates were observed in the samples from the ditch. Due to the inconsistent findings of the laboratories, the values were attributed to sample contamination. However, if the solvent recovery area is investigated and phthalates are positively identified in that area, it may be indicative of more widespread contamination of the site with the phthalates. The drainage ditch should also be investigated.

5.3 Units Not Requiring Further Action-Waste Storage Tank/Fuel Oil Tank

The samples from the area of dead vegetation near the Waste Storage Tank/Fuel Oil Tank did not reveal any information to lead Versar to believe that a release from a solid waste management unit has occurred. The metals data from sampling location SS-1 indicate that the concentrations observed are within the normal background concentrations of the site. The organic analyses indicted the presence of acetone and methylene chloride in low concentrations. Since methylene chloride and acetone were also found in the blank, and are known laboratory constituents, the methylene chloride and acetone observed

in SS-1 are most likely the result of laboratory contamination.

Drum Storage Areas

The samples from the soil area near the Drum Storage Area did not reveal any information to lead Versar to believe that a release from a solid waste management unit has occurred. Although elevated levels of copper, nickel, chromium, zinc and lead were found in the sample taken from the drum storage area (SS-7), PPI contends that the contamination with theses metals, which was also found throughout the site, is due to the presence of a corrosive atmosphere and the surface coating operations that take place at the facility to prevent corrosion. This is a plausible explanation, and is a common problem on sites where extensive sand blasting has taken place (Bongers, 1988). PPI should, however take measures to prevent the further contamination of the soil due to the surface coating operations and sand blasting. The organic analyses indicated the presence of xylenes at low levels.

Waste Equalization Tanks

The rationale behind sampling the waste pump station at the waste equalization tanks was the possibility that volatile organic compounds were present in high levels in the air above the station. The volatile constituents found were acetone, xylenes and vinyl acetate. The primary concern with all three constituents is the flame and explosive hazards. A combustible gas indicator should be used to determine if an explosive atmosphere exists above the tanks. However, since acetone was found in the blank, as well as the sample, it is probably a laboratory contaminant; and since xylene was found in low concentrations, it is not of major concern.

The concentration of vinyl acetate in the air above the pump station was calculated using Henry's Law to be

23.0 mg/m3. This estimated value approaches the TLV recommended by ACGIH, which is 30 mg/m3. Thus, the level of vinyl acetate in the air above the waste equalization tank should be monitored to determine if the actual level exceeds the ACGIH TLV.

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APPENDIX A

Calculation of Concentration of Vinyl Acetate in Air Above Open Waste Pump Station

Vinyl acetate $CH_3COOCHCH_2$ MW = 86.09 g/mol
vapor pressure (V_p) = 83 mm Hg at 20°C
solubility (Sol) = 20 g/l

$$Pi = \alpha \, Cequil \qquad \text{(Henry's Law)}$$

where

Cequil = concentration of gas dissolved in the liquid at equilibrium

P_i = Partial pressure of coponent i in the gas phase

α = Henry's law constant for the gas at the given temperature

From Lymans 1982:

$$\alpha = \frac{V_p \text{ (atm)}}{\text{Sol (moles/m}^3\text{)}}$$

$$VP = 83 \text{ mm Hg} \times \frac{1 \text{ atm}}{760 \text{ mm Hg}} = 0.109 \text{ atm}$$

$$\text{Sol} = 20 \text{ g/l} \times \frac{1 \text{ mole}}{86.09 \text{ g}} \times \frac{1 \text{ l}}{10^{-3} \text{ m}^3} = 232.32 \text{ mole/m}^3$$

$$\alpha = \frac{0.109 \text{ atm}}{232.32 \text{ mole/m}^3} = 4.69 \times 10^{-4} \text{ atm m}^3\text{/mole}$$

*Assumption 1 - vinyl acetate is dissolved in water at equilibrium.

Concentration of vinyl acetate = 1100 ug/L

$$1100 \text{ ug/l} \times \frac{1 \text{ mole}}{8.6 \times 10^7 \text{ ug}} \times \frac{1000 \text{ l}}{\text{m}^3} = 1.28 \times 10^{-2} \text{ mole/m}^3$$

Thus,

$$Pi = 1.28 \times 10^{-2} \text{ mole/m}^3 \times 4.69 \times 10^{-4} \text{ atm m}^3\text{/mole}$$

$$Pi = 6.0 \times 10^{-6} \text{ atm}$$

*Assumption 2 - Air surrounding open waste pump station is at atmospheric pressue (1 atm)

$$y_i = \frac{P_i}{P_t}$$

where

y_i = Mole fraction in the vapor phase

P_i = Partial pressure of component i in the gas phase

P_t = Total pressure

density of air = 1.29828 g/L

MW of air = 29 g/mole

Basis = 1 m^3 of air

$$1\ m^3 \text{ of air} \times \frac{1000L}{1\ m^3} \times \frac{1.2928\ g}{L} = 1293\ g$$

$$1293\ g \times \frac{1\ \text{mole}}{29\ g} = 44.6 \text{ moles of air}$$

$$y_i = \frac{\text{moles of v.a.}}{\text{moles of air}} = \frac{P_i}{P_t}$$

$$\frac{\text{moles of v.a.}}{44.6 \text{ moles air}} = \frac{6.0 \times 10^{-6} \text{ atm}}{1 \text{ atm}}$$

$$2.68 \times 10^{-4} \text{ moles of v.a.} \times \frac{86.09\ g}{\text{mole}} = 2.30 \times 10^{-2} \text{ g of v.a.}$$

Because basis is m^3; Concentration = $\frac{2.30 \times 10^{-2}}{m^3} = \frac{23.0\ mg}{m^3}$

ATTACHMENT K

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI) AT PFIZER PHARMACEUTICALS, INC.

PURPOSE

The purpose of this RCRA Facility Investigation is to determine the nature and extent of releases of hazardous waste or constituents from solid waste management units and other source areas at the facility and to gather all necessary data to support the Corrective Measures Study. The Permittee shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA remedial investigation at the Pfizer Pharmaceuticals, Inc., Barceloneta, Puerto Rico site.

SCOPE

The RCRA Facility Investigation consists of seven tasks:

Task I: Description of Current Conditions

- A. Facility Background
- B. Nature and Extent of Contamination
- C. Implementation of Interim Measures

Task II: Pre-Investigation Evaluation of Corrective Measure Technologies

Task III: RFI Management Plans

- A. Project Management Plan
- B. Data Collection Quality Assurance Plan
- C. Data Management Plan
- D. Health and Safety Plan
- E. Community Relations Plan

Task IV: Facility Investigation

- A. Environmental Setting
- B. Source Characterization
- C. Contamination Characterization
- D. Potential Receptor Identification

Task V: Investigation Analysis

- A. Data Analysis
- B. Protection Standards

Task VI: Laboratory and Bench-Scale Studies

Task VII: Reports

A. Progress
B. Draft and Final

TASK I: DESCRIPTION OF CURRENT CONDITIONS

The Permittee shall submit for EPA approval a report providing the background information pertinent to the facility, contamination and interim measures as set forth below. The data gathered during any previous investigations or inspections and other relevant data shall be included. The report must include, at a minimum, the following information:

A. Facility Background

The Permittee's report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. The Permittee's report shall include:

1. Map(s) depicting the following:

a. General geographic location;

b. Property lines, with the owners of all adjacent property clearly indicated;

c. Topography and surface drainage (with a contour interval of two (2) feet and a scale of 1 inch = 100 feet) depicting all waterways, wetlands, floodplains, water features, drainage patterns, and surface-water containment areas;

d. All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;

e. All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;

f. All known past solid or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980;

g. All known past and present product and waste underground tanks or piping;

h. Surrounding land uses (residential, commercial, agricultural, recreational); and

i. The location of all production and groundwater monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations and construction details included (these .

elevations and details may be included as an attachment).

All maps shall be consistent with the requirements set forth in 40 C.F.R. § 270.14 and be of sufficient detail and accuracy to locate and report all current and future work performed at the site;

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;

3. Approximate dates or periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and

4. A summary of past permits requested and/or received, any enforcement actions and their subsequent responses and a list of documents and studies prepared for the facility.

B. Nature and Extent of Contamination

1. The Permittee's report shall summarize all possible source areas of contamination. This, at a minimum, should include all regulated units, solid waste management units, spill areas, and other suspected source areas of contamination. For each area, the Permittee shall identify the following:

   a. Location of unit/area (which shall be depicted on a facility map);

   b. Quantities of solid and hazardous wastes;

   c. Hazardous waste or constituents, to the extent known; and

   d. Identification of areas where additional information is necessary.

2. The Permittee shall prepare an assessment and description of the existing degree and extent of contamination. This should include:

a. Available monitoring data and qualitative information on locations and levels of contamination at the facility;

b. All potential migration pathways including information on geology, petrology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

c. The potential impact(s) on human health and the environment, including demography, groundwater and surface-water use, and land use.

C. Implementation of Interim Measures

The Permittee's report shall document interim measures which were or are being undertaken at the facility. This shall include:

1. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility;

2. Design, construction, operation, and maintenance requirements;

3. Schedules for design, construction and monitoring; and

4. Schedule for progress reports.

TASK II: PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

The Permittee shall submit a report that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.).

The purpose of this Task is to optimize the design of the RFI to obtain data that is most relevant in facilitating the design of a corrective measure technology.

TASK III: RFI MANAGEMENT PLANS

The Permittee shall submit RFI Management Plans. These Plans shall be followed during the implementation of RFI, and will be part of the RFI Workplan. During the RFI, these Management Plans may be necessary for revisions depending on the detail of information collected to accommodate the facility specific situation. The RFI Management Plans include the following:

A. Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Data Collection Quality Assurance Plan

The Permittee shall prepare a plan to document all monitoring procedures: sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented. All sources of guidance documents and references must be included.

1. Data Collection Strategy

The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

b. Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

The target precision and accuracy shall be 95% confidence level and 10% precision.

c. Description of the rationale used to assure that the data accurately and precisely represent a characteristic of a population, parameter

variations at a sampling point, a process condition or an environmental condition. Examples of factors which shall be considered and discussed include:

i) Environmental conditions at the time of sampling;

ii) Number of sampling points;

iii) Representativeness of selected media; and

iv) Representativeness of selected analytical parameters.

d. Description of the measures to be taken to assure that the following data sets can be compared to each other:

i) RFI data generated by the Permittee over some time period;

ii) RFI data generated by an outside laboratory or consultant versus data generated by the Permittee;

iii) Data generated by separate consultants or laboratories; and

iv) Data generated by an outside consultant or laboratory over some time period.

e. Details relating to the schedule and information to be provided in quality assurance reports. The reports should include, but not be limited to:

i) Periodic assessment of measurement data accuracy, precision, and completeness;

ii) Results of performance audits;

iii) Results of system audits;

iv) Significant quality assurance problems and recommended solutions; and

v) Resolutions of previously stated problems.

2. Sampling

The Sampling section of the Data Collection Quality Assurance Plan shall discuss:

a. Selecting appropriate sampling locations, depths, etc.;

b. Providing a statistically sufficient number of sampling sites;

c. Measuring all necessary ancillary data;

d. Determining conditions under which sampling should be conducted;

e. Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency of sampling and length of sampling period;

h. Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;

i. Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

j. Documenting field sampling operations and procedures, including;

   i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);

   ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

   iii) Documentation of specific sample preservation method;

   iv) Calibration of field devices;

   v) Collection of replicate samples;

   vi) Submission of field-biased blanks, where appropriate;

vii) Potential interferences present at the facility;

viii) Construction materials and techniques, associated with monitoring wells and piezometers;

ix) Field equipment listing and sample containers;

x) Sampling order; and

xi) Decontamination procedures.

k. Selecting appropriate sample containers;

l. Sample preservation; and

m. Chain-of-custody, including:

i) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and

ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Field Measurements

The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:

a. Selecting appropriate field measurement locations, depths, etc.;

b. Providing a statistically sufficient number of field measurements;

c. Measuring all necessary ancillary data;

d. Determining conditions under which field measurements should be conducted;

e. Determining which media are to be addressed by appropriate field measurements (e.g., groundwater, air, soil, sediment, etc.);

f. Determining which parameters are to be measured and where;

g. Selecting the frequency of field measurement and length of field measurements period; and

h. Documenting field measurement operations and procedures, including:

i) Procedures and forms for recording raw data and the exact location, time, and facility-specific considerations associated with the data acquisition;

ii) Calibration of field devices;

iii) Collection of replicate measurements;

iv) Submission of field-biased blanks, where appropriate;

v) Potential interferences present at the facility;

vi) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;

vii) Field equipment listing;

viii) Order in which field measurements were made; and

ix) Decontamination procedures.

4. Sample Analysis

The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

a. Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

b. Sample storage procedures and storage times;

c. Sample preparation methods;

d. Analytical procedures, including:

i) Scope and application of the procedure;

ii) Sample matrix;

iii) Potential interferences;

iv) Precision and accuracy of the methodology; and

v) Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:

i) Method blank(s);

ii) Laboratory control sample(s);

iii) Calibration check sample(s);

iv) Replicate sample(s);

v) Matrix-spiked sample(s);

vi) "Blind" quality control sample(s);

vii) Control charts;

viii) Surrogate samples;

ix) Zero and span gases; and

x) Reagent quality control checks.

h. Preventive maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a. Unique sample or field measurement code;

b. Sampling or field measurement location and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Property or component measured; and

f. Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium, or for each constituent monitored;

c. Data reduction for statistical analysis;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

a. Display sampling location and sampling grid;

b. Indicate boundaries of sampling area, and areas where more data are required;

c. Display levels of contamination at each sampling location;

d. Display geographical extent of contamination;

e. Display contamination levels, averages, and maxima;

f. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and

g. Indicate features affecting intramedia transport and show potential receptors.

D. Health and Safety Plan

The Permittee shall prepare a facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

a. Facility description including availability of resources such as roads, water supply, electricity and telephone service;

b. Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted;

c. List key personnel and alternates responsible for site safety, response operations, and for protection of public health;

d. Delineate work areas;

e. Describe levels of protection to be worn by personnel in work areas;

f. Establish procedures to control site access;

g. Describe decontamination procedures for personnel and equipment;

h. Establish site emergency procedures;

i. Address emergency medical care for injuries and toxicological problems;

j. Describe requirements for an environmental surveillance program;

k. Specify any routine and special training required for responders; and

l. Establish procedures for protecting workers from weather-related problems.

2. The Facility Health and Safety Plan shall be consistent with:

a. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

b. EPA Order 1440.1 - Respiratory Protection;

c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

d. Facility Contingency Plan;

e. EPA Standard Operating Safety Guide (1984);

f. OSHA regulations particularly in 29 CFR 1910 and 1926;

g. State, local, and other federal agency (e.g., DOD, DOE) regulations; and

h. Other EPA guidance as provided.

E. Community Relations Plan

The Permittee shall prepare a plan, for the dissemination of information to the public regarding investigation activities and results.

TASK IV: FACILITY INVESTIGATION

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study ("CMS").

The site investigation activities shall follow the plans set forth in Task III of this Attachment. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

Note that not all cases will require all of the items described below. Any deletion of the items below shall be justified.

A. Environmental Setting

The Permittee shall collect information to supplement and verify existing information on the environmental setting at the facility. The Permittee shall characterize the following:

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the facility, including:

i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);

iii) Depositional history;

iv) Identification and characterization of areas and amounts of recharge and discharge;

v) Regional and facility specific groundwater flow patterns; and

vi) Characterize seasonal variations in the groundwater flow regime.

b. An analysis of any topographic features that might influence the groundwater flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis).

c. Based on field data, test, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:

i) Hydraulic conductivity and porosity (total and effective);

ii) Lithology, grain size, sorting, degree of cementation;

iii) An interpretation of hydraulic interconnections between saturated zones; and

iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

d. Based on field studies and cores, structural geology, and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

i) Sand and gravel deposits in unconsolidated deposits;

ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

iii) Zones of higher permeability or low permeability that might direct and restrict the flow of contaminants;

iv) The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and

v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.

e. Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

i) Water-level contour and/or potentiometric maps;

ii) Hydrologic cross sections showing vertical gradients;

iii) The flow system, including the vertical and horizontal components of flow; and

iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

f. A description of manmade influences that may affect the hydrogeology of the site, identifying:

i) Active and inactive local water-supply and production wells with an approximate schedule of pumping; and

ii) Manmade hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall include, but not be limited to, the following information:

a. SCS soil classification;

b. Surface soil distribution;

c. Soil profile, including ASTM classification of soils;

d. Transects of soil stratigraphy;

e. Hydraulic conductivity (saturated and unsaturated);

f. Relative permeability;

g. Bulk density;

h. Porosity;

i. Soil sorptive capacity;

j. Cation exchange capacity (CEC);

k. Soil organic content;

l. Soil pH;

m. Particle size distribution;

n. Depth of water table;

o. Moisture content;

p. Effect of stratification on unsaturated flow;

q. Infiltration

r. Evapotranspiration;

s. Storage capacity;

t. Vertical flow rate; and

u. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization shall include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface-water bodies including:

i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;

ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;

iii) For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100 year event);

iv) Drainage patterns; and

v) Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH3, NO3-/NO2-, PO4-3), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:

i) Deposition area;

ii) Thickness profile; and

iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

B. Source Characterization

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, collected or removed including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineered barriers). This shall include quantification of the following specific characteristics at each source area:

1. Unit/Disposal Area characteristics:

   a. Location of unit/disposal area;

   b. Type of unit/disposal area;

   c. Design features;

   d. Operating practices (past and present);

   e. Period of operation;

   f. Age of unit/disposal area;

   g. General physical conditions; and

   h. Method used to close the unit/disposal area.

2. Waste Characteristics:

   a. Type of waste placed in the unit;

      i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing, or reducing agent);

      ii) Quantity;

      iii) Chemical composition;

      iv) Hazardous constituents.

   b. Physical and chemical characteristics;

      i) Physical form (solid, liquid, gas);

      ii) Physical description (e.g., powder, oily sludge);

      iii) Temperature;

      iv) pH;

      v) General chemical class (e.g., acid, base, solvent);

      vi) Molecular weight;

      vii) Density;

      viii) Boiling point;

ix) Viscosity;

x) Solubility in water;

xi) Cohesiveness of the waste;

xii) Vapor pressure.

xiii) Flash point

c. Migration and dispersal characteristics of the waste;

i) Sorption;

ii) Biodegradability, bioconcentration, biotransformation;

iii) Photodegradation rates;

iv) Hydrolysis rates; and

v) Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Contamination Characterization

The Permittee shall collect analytical data on groundwater, soils, and/or surface water/sediment contamination in the vicinity of the facility. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, and conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the water table in the vicinity of the of the contaminant release. The investigation shall include the following information:

a. A description of the vertical and horizontal extent of contamination for the parameters listed in Attachment J of this Permit.

b. A description of contaminant and soil chemical properties within the contaminant source area and plume. This includes contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation.

c. Specific contaminant concentrations.

d. The velocity and direction of contaminant movement.

e. An extrapolation of future contaminant movement.

f. Assess the impact and the role the epikarstic zone.

The Permittee shall document the procedures used in making the above determinations.

2. Groundwater Contamination

When groundwater has been determined by the Permittee or EPA, the Permittee shall conduct a groundwater investigation to characterize any plumes of contamination at the facility. This investigation shall, at a minimum, provide the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of chemical constituents listed in Attachment J of of this Permit in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

3. Surface-Water and Sediment Contamination

The Permittee shall conduct a surface-water investigation to characterize potential contamination in the Bushkill Creek. The investigation shall include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility, and the extent of contamination in underlying sediments. Chemical constituents listed in the Attachment J of this Permit must be monitored for this investigation.

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.;

The Permittee shall document the procedures used in making the above determinations.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained. The following characteristics shall be identified:

1. Local uses and possible future uses of groundwater:

a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

b. Location of groundwater users including wells and discharge areas.

2. Local uses and possible future uses of surface waters draining the facility:

a. Domestic and municipal (e.g., potable and lawn/gardening watering);

b. Recreational (e.g., swimming, fishing);

c. Agricultural;

d. Industrial; and

e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

a. Recreation;

b. Hunting;

c. Residential;

d. Commercial;

e. Zoning; and

f. Relationship between population locations and prevailing wind direction.

4. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A description of the ecology overlying and adjacent to the facility.

6. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any endangered or threatened species near the facility.

TASK V: INVESTIGATION ANALYSIS

The Permittee shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/ or the environment, and to support the Corrective Measures Study.

A. Data Analysis

The Permittee shall analyze all facility investigation data outlined in Task IV and prepare a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area.

B. Protection Standards

The Permittee shall identify all relevant and applicable standards for the protection of human health and the environment (e.g., National Ambient Air Quality Standards, federally-approved water quality standards, etc.).

TASK VI: LABORATORY AND BENCH-SCALE STUDIES

The Permittee shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Permittee shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Permittee shall develop a testing plan identifying the types(s) and goal(s) of the study(ies), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Permittee shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

TASK VII: REPORTS

A. Progress

The Permittee shall provide the EPA with signed, bimonthly progress reports.

The reports shall address the following items:

a. A description of the work completed;

b. Summaries of all findings, including summaries of laboratory data;

c. Summaries of deviations from plans implemented;

d. Summaries of all contacts made with representatives of local community and public interest groups during the reporting period;

e. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems; and

f. Projected work for the next reporting period and proposed modifications to plans.

B. Draft and Final

The Permittee shall prepare a RCRA Facility Investigation ("RFI") Report. The RFI Report shall present all information gathered under the approved RFI Workplan.

References and Guidances

1. Preparation of Soil Sampling Protocol: Techniques and Strategies (EPA-600/4-83-020)

2. Soil Sampling Quality Assurance User's Guide (EPA-600/4-84-043)

3. Data Quality Objectives for Remedial Response Activities--Development Process, (EPA/540/G-87/003)

4. Data Quality Objectives for Remedial Response Activities--Example Scenario, (EPA/540/G-87/004)

5. RCRA Facility Investigation (RFI) Guidance, Vol. I - IV, (EPA 530/SW-87-001)

6. Federal Register, October 24, 1986, pp. 37854-37880.

ATTACHMENT L
SCOPE OF WORK FOR
A CORRECTIVE MEASURE STUDY

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY AT PFIZER PHARMACEUTICALS, INC.

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken at Pfizer Pharmaceuticals, Inc.. The Permittee will furnish the personnel, materials, and services necessary to prepare the corrective measure study, except as otherwise specified.

SCOPE

The Corrective Measure Study consists of four tasks:

Task I: Identification and Development of the Corrective Measure Alternative or Alternatives

- A. Description of Current Situation
- B. Establishment of Corrective Action Objectives
- C. Screening of Corrective Measures Technologies
- D. Identification of the Corrective Measure Alternative or Alternatives

Task II: Evaluation of the Corrective Measure Alternative or Alternatives

- A. Technical/Environmental/Human Health/Institutional
- B. Cost Estimate

Task III: Justification and Recommendation of the Corrective Measure or Measures

- A. Technical
- B. Environmental
- C. Human Health

Task IV: Reports

- A. Progress
- B. Final

TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified Preliminary Corrective Measure Technologies (Task II of Attachment K), the Permittee shall identify, screen, and develop the alternative or alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The Permittee shall provide an update to information presented in Task I of the RFI to the Agency regarding previous response activities and any interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation ("RFI"). The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee, in conjunction with EPA, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable federal statutes. At a minimum, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 40 C.F.R. § 264.100.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and reassess the technologies specified in Task II and identify additional technologies which are applicable at the facility. The Permittee shall screen the preliminary corrective measure technologies identified in Task II of the RFI and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe

limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations. Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

   During the screening process, the level of technology development,performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. <u>Identification of the Corrective Measure Alternative or Alternatives</u>

The Permittee shall develop the corrective measure alternative or alternatives based on the corrective action objectives and analysis of the Preliminary Corrective Measure Technologies, as presented in Task II of the RFI and as supplemented following the preparation of the RFI Final Report. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative

or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies, identified in Task II, as supplemented in the development of the alternative or alternatives.

TASK II: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the Initial Screening in Task I of Attachment L and evaluate each corrective measure alternative and it's components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type ofconstruction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determinedeither through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually

may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straight forward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i) Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The

Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii) Time has two components that shall be addressed: (1) thetime it takes to implement a corrective measure and (2) thetime it takes to actually see beneficial results. Beneficialresults are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Among the factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short and long term potential exposure to any residual contamination and protects human health both during and after implementation the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative

will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

E. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital, operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

a. Direct capital costs include:

i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.

ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

iii) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

iv) Buildings and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

i) Engineering expenses: Costs of administration, design,construction supervision, drafting, and testing of corrective measure alternatives;

ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

iii) Startup and shakedown costs: Costs incurred during corrective measure startup; and

iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating,and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental

insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

TASK III: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The EPA will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks II and III of Attachment L. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

TASK IV:REPORTS

A. Progress

The Permittee shall provide the EPA with signed, quarterly progress reports as required by Condition D.1 of Module III of this Permit.

B. Corrective Measures Study ("CMS") Final Report

The Permittee shall prepare a CMS Final Report as required by Condition --- of Module III of this Permit. The CMS Final Report shall include all information gathered under the approved CMS Workplan. The CMS Final Report shall at a minimum include:

1. A description of the facility;

   a. Site topographic map & preliminary layouts.

2. A summary of the corrective measure or measures;

   a. Description of the corrective measure or measures and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements; and

   e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

   a. Field studies (groundwater, surface-water, soil, air); and

   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

d. Access, easements, right-of-way;

e. Health and safety requirements; and

f. Community relations activities.

5. Cost Estimates and Schedules;

a. Capital cost estimate;

b. Operation and maintenance cost estimate; and

c. Project schedule (design, construction, operation).

ATTACHMENT M

CONTENT:

- Worksheet #1
- Information Request

Instructions for Completing WORKSHEET 1

These instructions provide guidance for filling out WORKSHEET 1, which requires information on incinerator units, incinerator stacks, and metal and chlorine feed rates by feed system for each incinerator unit.

The form is divided into three sections. Section I requests general reference information, Section II requests site information, and Section III requests desired maximum metal and chlorine feed rates.

The requested metal and chlorine feed rates in Section III must be specified for all the feed systems to the incinerator.

I. Reference Information

The facility name, address, phone number, and date are requested for the permit writer's recordkeeping information.

A. Facility name

B. Address

C. Phone number

D. Date of submission

II Site Information

This section is divided into three categories: stack parameters, terrain parameters, and dimensions of nearby buildings. These data should be provided separately for each incinerator on the site. The form contains space for five separate incinerator units. If there are more than five units on the site, the applicant should attach additional sheets with the requested parameters for these units.

A Stack parameters

The following parameters are required for the stack through which the incinerator unit in question releases, even if other non-incinerator units are connected to the same stack.

1. Stack height

   This is the height in meters of the stack above the base elevation (not the height above sea level).
   If the stack is on top of a building, the reported height should be the height of the building plus the height of the stack, so that this value will be the height above the base elevation.

2. Exhaust temperature

   This is the exit gas temperature of the plume in degrees Kelvin.

3. Inner stack diameter

   This is the inner diameter of the stack at the exit point (top of stack) in meters, i.e., do not include the thickness of the stack walls.

4. Exit velocity

   This is the velocity of the plume in meters per second as it exits the stack in question.

5. Flow rate

   This is the exit flow rate of the plume in cubic meters per second. This parameter is not necessary if the inner stack diameter and exit velocity are given. Those parameters are preferable over the flow rate, but if they are unavailable, then the exit flow rate is acceptable.

6. Latitude/Longitude or UTMs

   These are the coordinates of the stack in question. If these coordinates are not readily available, they may be obtained using the following method.
   Locate each stack on a U. S. Geological Survey (USGS) topographical map and read from the map axes the latitude/longitude coordinates in degrees/minutes/seconds and the UTM coordinates to the nearest tenth of a kilometer.

B. Terrain parameters

The required terrain parameters are determined using the maximum terrain rise from a

topographic map: the terrain rise is measured out to a 5-km radius from the location of the source. The United States Geological Survey (USGS) 7.5 minute map is recommended. A discussion of the rationale for the 5-km distance is provided in Appendix I(a) of the Metals Guidance Document.

1. Maximum terrain rise (meters)

The maximum terrain rise (in meters) occurring within the following three distance ranges from the source is required:

0 - 0.5 km
0 - 2.5 km
0 - 5.0 km.

The terrain rise is obtained from reading the topographic lines off of the map (converting from feet to meters).

2. Shortest distance to fenceline (meters)

This is the distance to the facility property boundary closest to the source. If residences are located within the plant boundaries, then this parameter should be the distance to the nearest residence.

C. Dimensions of nearby buildings

All structures within 5 building heights or 5 projected maximum building widths of the stack(s) should be identified, including structures outside the plant boundary.

1. Distance from stack (meters)
2. Distance from nearest fenceline (meters)
3. Building height (meters)
4. Building length (meters)
5. Building width (meters)

In addition, each such structure should be clearly identified on a site map.

II. Requested maximum metal and chlorine feed rates

The feed rates provided here should be the maximum metal and chlorine feed rates ever expected to the system, shown separately by feed system. If waste blending is performed, the data in this section should reflect the resulting waste stream after blending. These feed rates will be written into the permit provided they pass the risk screening. The applicant must attach copies of any supporting documentation of the waste feed rate calculations.

The feed rates must be provided separately for each feed system to the incinerator to allow more flexibility in adjusting feed rates if the risk levels are unacceptable (see attached diagram). Some examples of waste feed systems include:

- Ram feed (solids)
- Conveyor feed (solids)
- Liquid injection (liquids)
- Liquid or fuel injection to afterburner (liquids).

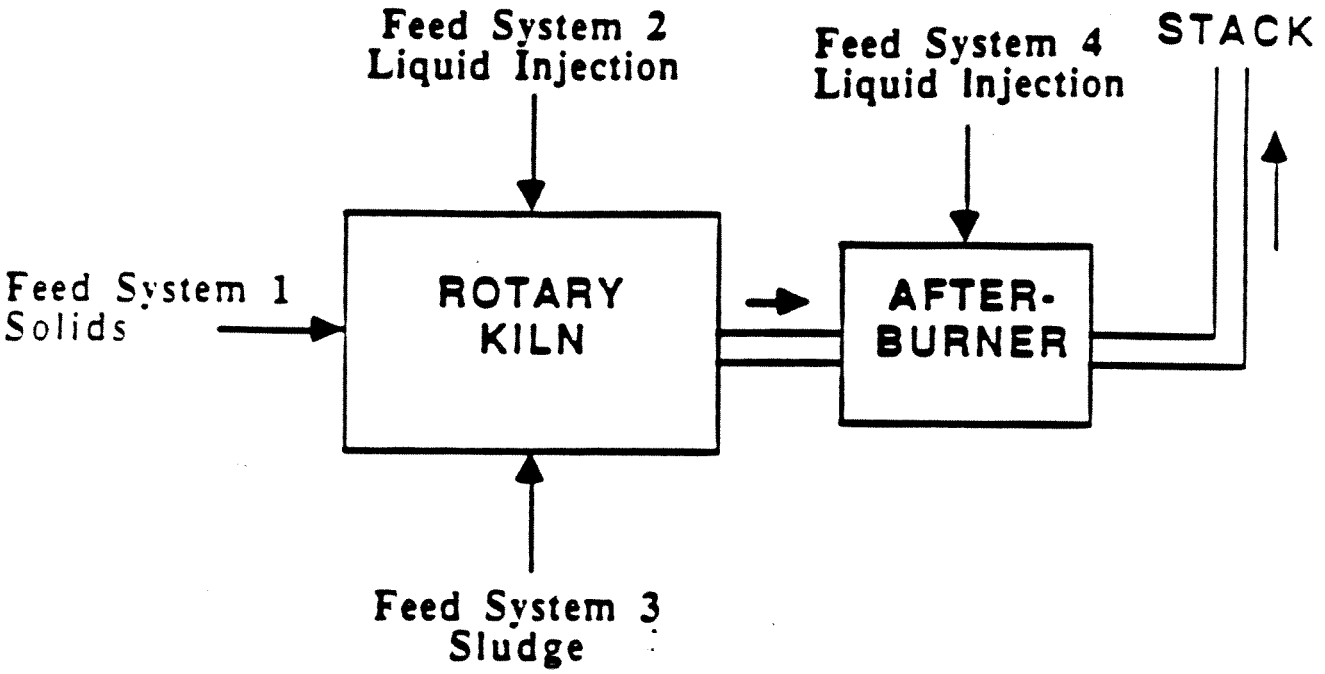


DIAGRAM OF FEED SYSTEMS

WORKSHEET 1
Data Requirements
(If facility has more than five units, attach additional sheets)

I. REFERENCE INFORMATION

A. Facility Name _____
B. Address _____
C. Phone Number _____
D. Date of Submission _____

II. SITE INFORMATION

	Incinerator Stacks				
A. Stack Parameters	**1**	**2**	**3**	**4**	**5**
1. Stack Height (meters)					
2. Exhaust Temperature (Kelvin)					
3. Inner Stack Diameter (meters)					
4. Exit Velocity (m/second)					
5. Flow Rate (cubic m/sec)					
6. Latitude					
Longitude					
UTM (easting)(km)					
UTM (northing) (km)					
B. Terrain Parameters					
1. Maximum Terrain Rise(meters)					
0 – 0.5 km radius					
0 – 2.5 km radius					
0 – 5.0 km radius					
2. Shortest distance to fenceline					
C. Dimensions of Tallest Buildings*					
1. Distance from Stack (meters)					
2. Distance from nearest fenceline (meters)					
3. Building height (meters)					
4. Building length (meters)					
5. Building width (meters)					

*Consider buildings within 5 building heights or 5 maximum projected widths of the stack

WORKSHEET 1
Data Requirements
(if facility has more than five units, attach additional sheets)

III. REQUESTED MAXIMUM FEED RATES

If waste blending is performed, the data provided in this section should be after blending. These feed rates will be written into the permit provided they pass the risk screening

The applicant must also submit copies of any supporting documentation of the waste feed rate calculations for each one of the feed (burner) systems

A. Maximum Feed Rates by Feed System	Feed System 1	Feed System 2	Feed System 3	Feed System 4	Total for all Feed Systems
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Chromium					
Lead					
Mercury					
Silver					
Thallium					
Chlorine					

ATTACHMENT N

Constituents of Concern

I. Action Levels and Cleanup Level Standards

Soil:

Arsenic:	BKGRD
Phthalates:	To Be Determined
Phenol:	3000.0 mg/kg
Benzo(a)pyrene:	0.06 mg/kg
Chromium:	400.0 mg/kg

II. Parameters to be Monitored at SWMU #3 (47,000 Gallon Waste Storage Tank Area) and SWMU #11 (Solvent Recovery Area)

Soil:

- PCBs
- Semi-volatiles
- Metals (Cr, Arsenic, Ni)
- Phthalates
- Phenol
- Benzo(a)pyrene