



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107

File  
Horz  
Permit Issued  
Berks Co.  
Carpenter Tech  
copy

MAR 27 1991

In Reply Refer To: 3HW51

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

DER  
WASTE MANAGEMENT  
MAR 25 1991  
APR 1 1991  
HARRISBURG REGION

Mr. Mike Balla  
Environmental Engineer  
Carpenter Technology Corporation, Steel Division  
101 W. Bern Street  
Reading, PA 19612-4662

Re: Notice of Decision  
RCRA Corrective Action Permit  
PAD 00 234 4315

Dear Mr. Balla,

In accordance with regulation 40 CFR § 124.15, promulgated under the Resource Conservation and Recovery Act (RCRA), 42 USC §§ 6921 - 6939(a), I have made the determination to issue the Environmental Protection Agency's (EPA's) portion of the full RCRA permit to Carpenter Technology Corporation, Steel Division, Reading, PA. Enclosed is EPA's RCRA permit for corrective action and waste minimization and the "Response to Comments." The permit is effective May 1, 1991 and expires April 30, 2001 as noted on the first page of the permit.

Carpenter Technology Corporation and any person who submitted comments on the draft permit may, under regulation 40 CFR § 124.19, petition the Administrator of the United States Environmental Protection Agency to review any condition of the permit provided the appeal is filed within thirty-three (33) days of the issuance (mailing) of this Notice of Decision.

The petition must include a statement of the reasons supporting that review, including a demonstration that any issues raised were developed during the public comment period to the extent required by the regulations governing public comment. See regulations 40 CFR §§ 124.10, and 124.13. When appropriate, the petitioner should include a showing that the contested condition is based on one of the following factors as set forth in 40 CFR § 124.19(a)(1)-(2):

- (1) clearly erroneous findings of fact or conclusions of law; or

- (2) an exercise of discretion or an important policy consideration that the Administrator should review, in his discretion.

The Administrator must issue an order that grants or denies the petition within a reasonable time following the filing of the petition. Public notice of any grant of administrative review under regulation 40 CFR § 124.19 must be given as provided in regulation 40 CFR § 124.10. The public notice must contain a briefing schedule for the appeal and a statement that any interested persons may file amicus briefs. If the review is denied, notice need only be sent to the respective petitioners and the permittee.

If any person should decide to appeal the permit, the petition must be directed to:

U. S. Environmental Protection Agency  
Office of the Administrator (A-100)  
Waterside Mall  
401 M Street, S.W.  
Washington, D.C. 20460

Should the permit be appealed, a copy of the petition should be sent to:

EPA Region III  
RCRA Programs Branch (3HW50)  
841 Chestnut Building  
Philadelphia, PA 19107

Should you have any questions concerning this Notice of Decision, please feel free to contact Stephen Hon Lee, Environmental Engineer, at 215-597-3181.

Sincerely,



Thomas C. Voltaggio, Director  
Hazardous Waste Management Division

Enclosure:  
RCRA Corrective Action Permit  
Response to Comments

cc: L. Lunsik, PADER Norristown Office w/enclosures

Response to Comments  
Carpenter Technology Corporation, Steel Division  
PAD 00 234 4315

The following is a response by EPA to comments submitted by Carpenter Technology Corporation, Steel Division (Carpenter) on the draft RCRA Corrective Action Permit. A public notice for the draft permit was issued by EPA on August 15, 1990. This response provides EPA's position on the issues raised by Carpenter. The number prior to each response corresponds to the number used by Carpenter in its September 28, 1990 comments on the draft permit.

**Preface**

EPA will include in the Administrative Record all documents, data, correspondence, memoranda and other records generated by EPA and the Permittee used in drafting the EPA Corrective Action Permit except those which are privileged and confidential pursuant to the Freedom of Information Act, 5 U.S.C. § 552(b). (See also 40 C.F.R. § 124.9).

**Comments**

In response to your comment regarding the RCRA Facility Assessment (RFA) Report, in this case, the "Preliminary Site Investigation of Solid Waste Management Units at Carpenter Technology Corporation Steel Division - Reading Plant, Reading, Pennsylvania site, EPA I.D. No. PAD 002344315" prepared by A.T. Kearney Inc. and Harding Lawson Associates, dated December, 1985 is considered the final RFA and is the document upon which the Agency relied in its preparation of Carpenter's permit.

EPA's response to Carpenter's request that the investigation under the Permit be staged and focused is contained elsewhere in our Response to Comments.

EPA has also determined that the visual site investigations performed in 1987 and 1990 will not be referenced or relied upon in the Fact Sheet and Permit to determine whether further action is required since these visits were not documented. However, the results of ground-water sampling conducted by the Permittee as part of the ground-water cleanup project required by the Pennsylvania Department of Environmental Resources (PADER) constitute evidence of releases for purposes of this corrective action permit and the basis upon which EPA has included Units 8, 10, 13, 18-1, 18-3, 18-4, 18-5, 18-6, 22 and 28 as SWMUs.

**A. Fact Sheet**

1. EPA has determined that Unit 8 (listed on page 6) will

require further action based on existing ground-water data and DER ground-water cleanup requirements. The inclusion of Unit 8 on Page 11 of the original Fact Sheet was an error. Additionally, the capacity of Unit 8 is 5,000 gallons, not 4,355 gallons as originally described.

2. The inclusion of Unit 13 on Page 7 of the original Fact Sheet was an error; EPA has determined that Unit 13 is a SWMU requiring further action since it has been investigated and is included in the PADER ongoing ground-water cleanup project. The capacity of Unit 13 is 4,344 gallons, not 5,000 gallons as originally described.
3. EPA's files show that Unit 10 was capped but was never certified closed by PADER. Since the information concerning this unit is inadequate, in accordance with 40 C.F.R. § 270.14(d)(3), EPA has determined that further investigation information, such as soil analysis, must be provided in the RFI workplan.
4. EPA has determined that Unit 18-1 will require further action since it is part of the PADER ground-water cleanup project.
5. EPA has determined that Units 18-3 to 18-6 will require for further action since these units are part of the DER ground-water cleanup project.
6. EPA has determined that Units 22 and 28 will require further action based upon the on-site PADER ground-water remediation project. EPA has further determined that Unit 24 will not require further action since this unit is not included as part of the PADER clean-up project.

EPA acknowledges that Carpenter has conducted certain investigations in conjunction with the PADER ground-water cleanup project. EPA anticipates that Carpenter will incorporate all relevant studies and reports prepared for the PADER project including hydrogeological and geological investigation reports, ground-water remediation activities, and on-site ground-water information, into the RFI workplan required by EPA under this Permit. Since the need for and the scope of corrective measures will be determined by the RFI workplan, EPA will consider source control as one of the corrective measure options if its rationale is acceptable.

#### **B. Permit - Part B**

1. Part B.7.(a) - Carpenter states that it is now under the jurisdiction of the Harrisburg office of Pennsylvania Department of Environmental Resources (PADER). The permit will be changed to reflect the change of jurisdiction.

2. The Permittee requests a clarification concerning the impact of proposed regulations at 40 C.F.R. Part 264 which would exclude from otherwise applicable land disposal restrictions the movement or consolidation of wastes within (but not into) a designated Corrective Action Management Unit (CAMU). When and if the relevant proposed regulations become effective, the Permittee will be permitted to propose for designation by the Regional Administrator areas which it believes qualify as CAMUs. At that time, if the Regional Administrator agrees with the Permittee that a particular area qualifies as a CAMU, then the permit will be deemed to allow the movement or consolidation of wastes within (though not from the outside into) that properly designated CAMU, if such movement or consolidation of wastes occurs in accordance with all applicable and currently effective regulations, without automatically triggering land disposal restrictions.

However, until such time as the proposed corrective action management unit regulations become effective, all activities of Permittee involving land disposal continue to be subject to the provisions of RCRA Section 3004(b)-(m), 42 U.S.C. § 6294 (b)-(m), and regulations thereunder at 40 C.F.R. Part 268.

3. Part B.11.(e) - To clarify the extent of this notification requirement, EPA has limited the notification requirement to "facility" as defined in 40 C.F.R. § 260.10.
4. Part D - EPA notes that the Dispute Resolution provision does require the Agency to provide a written statement for its decision to disapprove a document submitted by the Permittee: "In the event of EPA disapproval....the Regional Administrator shall specify any deficiencies in writing." (Emphasis added). To clarify this more fully, the Agency has changed this phrase to read: "....the Regional Administrator shall provide a statement explaining any such disapproval and shall specify any deficiencies in writing." (Emphasis is added).

With regard to the Permittee's second objection, the Agency should not be required to respond to the Permittee within any specified time frame. EPA is well within its discretion as the permit-issuing agency to respond within the time frame it deems appropriate. The Permittee has not cited any regulation or policy supporting its demand nor has it otherwise justified its proposed limitation on EPA's time to respond in this situation.

With regard to the Permittee's third objection, the Agency will not agree that its "action to require a modification of

the permit" be subject to direct judicial review. The Agency disagrees that a right to direct judicial review exists prior to final action on the part of the Agency.

Permit condition I.D. provides the Permittee with an additional opportunity to resolve a disagreement with EPA beyond that required by RCRA and EPA's permitting regulations. Under Section 3008(a) of RCRA, 42 U.S.C. § 6928(a), and EPA regulations at 40 C.F.R. 270.30(a), EPA has the right to bring an action against the Permittee to enforce the requirements of the permit including requirements relating to the submission of documents and reports. In the context of the enforcement action, the Permittee has the opportunity to be heard as to why the Agency's position is incorrect. This procedure affords the Permittee constitutionally adequate procedural due process, without providing an opportunity for negotiations prior to the initiation of an action by EPA against the Permittee. This "dispute resolution" procedure is the only one EPA is required by law to provide.

Permit Condition I.D. was designed to grant the Permittee an opportunity to informally resolve a dispute with EPA prior to the institution by EPA of an action to enforce the disputed requirement. If EPA and the Permittee cannot agree on the matter in dispute during the forty-five (45) days allowed for its resolution, the parties are essentially where they started under Section 3008(a) and 40 C.F.R. § 270.30(a). The Permittee must submit the document, which was the subject of the dispute, in the manner which EPA asserts is required by the permit, or risk enforcement action by EPA.

Additionally, Permit Condition I.D. allows the Permittee to indicate whether, and to what extent, it agrees or disagrees with EPA's position regarding the required modification at the time it submits the revised document. If the Permittee disagrees, Permit Condition I.D. requires the initiation of the Permit modification process, in accordance with the 40 C.F.R. §§ 270.41 or 270.42, to incorporate EPA's position regarding the matter in dispute. This permit modification procedure includes a public comment period and the right to appeal under 40 C.F.R. § 124.19.

The foregoing clearly demonstrates that the dispute resolution procedure in Permit Condition I.D. offers the Permittee a greater opportunity to be heard on its dispute with EPA before it must comply with the disputed permit condition than is required by RCRA or the permitting regulations. The procedure is more than sufficient to satisfy due process requirements. Indeed, such a procedure was upheld against a due process challenge in In The Matter

of Hoechst Celanese, RCRA Appeal No. 87-13 (March 1, 1989).

5. EPA notes that Permit does contain force majeure language in Condition I.C. "Approved Submissions Incorporated Into Permit", (page 8). However, EPA agrees with Carpenter that the Permit should include a more comprehensive force majeure provision. Accordingly, the third and fourth sentences in Permit Condition I.C. have been deleted and a new force majeure section has been added as follows:

1. Permittee shall perform the requirements of this Permit in the manner and within the time limits set forth herein, unless the performance is prevented or delayed by events which constitute a force majeure. Permittee shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Permittee, which cannot be overcome by due diligence and which delays or prevents performance by a date required by this Permit.
2. Permittee shall notify EPA, in writing, within six (6) business days after it becomes aware of any event which causes or may cause a delay in complying with any requirement of this Permit and any event which Permittee claims constitutes a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to prevent or minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this Condition (Condition I.J) shall constitute a waiver of Permittee's right to assert a force majeure claim with respect to such event.
3. If EPA determines that the delay has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Permittee, which cannot be overcome by due diligence, this delay shall not make the Permittee liable for such failure to comply. Additionally, the time for performance for that requirement of this Permit may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances, including, at the discretion of EPA, any additional time necessary to remobilize personnel or equipment and to render the site suitable for the recommencement of work. This shall be accomplished through a permit

modification (Condition I.F). Such extension does not alter the schedule for performance or completion of any other tasks required by this Permit, unless these tasks are also specifically altered by amendment of the Permit.

4. In the event that EPA and Permittee cannot agree that any delay or failure has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Permittee, which cannot be overcome by due diligence, or if there is no agreement on the length of time extension for performance, the dispute shall be resolved in accordance with Condition I.D, "DISPUTE RESOLUTION", above.

### C. Permit - Part II

1. Part A - EPA agrees that the Permittee may include ground-water investigations previously conducted as part of the RFI workplan and CMS report. However, if EPA finds that further study is warranted, the Permittee will be required to complete further investigations and provide additional information.
2. Part B.(1) - EPA agrees to allow the Permittee a 150-day deadline for preparation of the RFI workplan instead of the 90 days stated in the permit. The permit will be revised to reflect this request.
3. Part B.(2) - EPA has determined that Unit 24 will be deleted from the further action required list since it is not subject to the DER ground-water contamination investigation. The other units, namely SWMUs 2, 8, 10, 13, 18-1, 18-3 to 18-6, 22 and 28, will require further action since they have been subject to PADER ground-water monitoring project. The permit will be revised to reflect this change.
4. Part B.(3) - EPA agrees with the Permittee that SWMUs 1, 9, 21-4 and 8 can compose one study area; SWMUs 8, 10, 13, 17, 18-1, 18-3 to 18-6, 21-1 to 21-3 and 22 can also compose as one study area (Unit 9 is excluded due to its location). However, the Permittee must define the geographical boundaries of the indicated study areas in the RFI workplan for EPA approval.
5. Part B.(4) - EPA agrees to extend and has extended the schedule to 330 calendar days for completion of RFI workplan requirements.
6. Part C.(3) - The Permittee's request that EPA allow the time limits of the Corrective Measures Study (CMS) to be

specified in the CMS Plan will be granted, although EPA must be given time to review and consider the appropriateness of the time requested in the context of the CMS Plan before full approval is granted. The permit will be revised to reflect this request.

**D. Attachment A.**

1. Part A.3. - As stated previously, the Permittee is required to provide all appropriate and applicable ground-water information in RFI workplan. The Permittee may include phased studies and proposed corrective actions or similar activities and a justification therefor in the Management Plan in addition to the required components. EPA has determined that the Project Management Plan language will remain as is.
2. Part A.4.b. - The comments in the Permittee's letter of September 28, 1990 correspond to Part A.4.a. of Attachment A. EPA has assumed that it is a typographical error and A.4.b. should be read as Part A.4.a. Since the list of chemicals and substances in Attachment B is derived from the Permittee's waste streams, EPA has determined that the constituents in the indicated attachment will not be revised. However, there is no need to sample and analyze certain constituents if an acceptable rationale is provided in the RFI workplan.
3. Part A.4. - EPA will consider the proposal regarding sample locations, number of samples and specific substances to be analyzed at the time of plan approval if the rationale is acceptable to the Agency. There is no need, however, to revise this Section.
4. Part A.4.e. - EPA has determined that this section will not be revised since compliance with Land Disposal Restriction is required under Permit Condition Part I B.10.
5. Part A.4. - EPA has determined that no extra section regarding the use of existing investigation information needs to be added. However, as noted above, all necessary and applicable information pertaining to on-site environmental systems may be provided in the RFI workplan.
6. Part A., noted on Page 3. - EPA agrees that the Permittee may propose other cleanup levels (see Permit Condition II.B.5.) but  $1 \times 10^{-6}$  must be used as the starting point for determining the most appropriate risk level.
7. Part B-1 - EPA agrees that the Permittee will provide all appropriate and applicable information not necessarily for

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PERMIT

FOR CORRECTIVE ACTION AND WASTE MINIMIZATION  
UNDER THE  
RESOURCE CONSERVATION AND RECOVERY ACT  
AS AMENDED BY THE HAZARDOUS AND SOLID WASTE  
AMENDMENTS OF 1984

Permittee: Carpenter Technology Corporation

Permit Number: PAD 00 234 4315

Facility: Reading, Pennsylvania

This permit is issued by the United States Environmental Protection Agency (EPA) under the authority of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. § 6901 et seq., and EPA regulations at 40 C.F.R. Parts 260-271 and Part 124, to Carpenter Technology Corporation (hereinafter the Permittee) to meet the requirements of HSWA at the Permittee's facility in Reading, Pennsylvania at latitude 40° 01' 24" North and longitude 75° 56' 26" West (the Facility).

The complete RCRA permit for purposes of Section 3005(c) of RCRA, 42 U.S.C. § 6925(c) consists of two portions: this permit, issued by EPA, which addresses the provisions of HSWA, and the permit issued by the Pennsylvania Department of Environmental Resources (PADER) concurrently with this permit which addresses the provisions of Code of Pennsylvania Regulations, Title 26, Subtitle 13, for which the Commonwealth of Pennsylvania has received authorization under Section 3006(b) of RCRA, 42 U.S.C. § 6926(b), to administer and enforce in lieu of the federal hazardous waste management program under RCRA. As of the date of issuance of this permit, the Commonwealth of Pennsylvania has not received authorization to administer the provisions of HSWA. This permit, which addresses provisions of HSWA, will be enforced by EPA. The PADER permit will be enforced by PADER.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (Parts I, II and Attachments A - D and the applicable regulations contained in 40 C.F.R. Parts 124, 260 through 264, 268 and 270 as specified in the permit or which are, by statute, self-implementing. (40 C.F.R. § 270.32(c))

This permit is based on the assumption that the information

each SWMU but for the general study areas. However, if EPA finds that further investigation regarding any specific SWMU which is subject to further action under this Permit is warranted, the Permittee will be required to complete further investigations and provide additional information. EPA will grant the Permittee's request regarding the contents of characterizations and studies. However, EPA will determine whether an investigation is relevant to an understanding the extent of contamination. EPA will also determine whether the possible benefit of potential corrective action measures is likely to outweigh any additional environmental harm that might result.

8. Part B.1.c. - Surface water bodies "in the vicinity" of the facility means surface water bodies on facility property and immediately adjacent thereto.
9. Part C.2. - As stated in EPA's Response to Comments D.6. to the Permittee's objection to Attachment A of the Permit, EPA has determined that the  $1 \times 10^{-6}$  risk level is the appropriate starting point for determining the risk level that best protects human health and the environment and this calculation must be performed and provided to EPA. However, Permit Condition II.B.5. gives the Permittee the ability in this instance to demonstrate that, based on such factors as institutional setting of property, human and ecological receptors, environmental setting, another limit may be equally protective.

provided to EPA by the Permittee is accurate. Section 3005(c)(3) of RCRA provides authority to review and amend the permit at any time. Any inaccuracies found in the information submitted by the Permittee may be grounds for the termination, modification or revocation and reissuance of this permit (see 40 C.F.R. §§ 270.41, 270.42 and 270.43). The Permittee must inform EPA of any deviation from or changes in the submitted information which would affect the Permittee's ability to comply with the applicable statutes, regulations or permit conditions.

This permit is effective as of May 1, 1991, and shall remain in effect until April 30, 2001, unless revoked and reissued, modified or terminated in accordance with 40 C.F.R. §§ 270.41, 270.42, 270.43 or continued in accordance with 40 C.F.R. § 270.51(a).

## PART I - STANDARD CONDITIONS

### A. DEFINITIONS

For the purposes of this permit, terms used herein shall have the same meaning as those set forth in 40 C.F.R. Parts 260 through 264, 268 and 270, unless this permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the terms. The following definitions also apply to this permit.

1. Days - except as otherwise provided herein, calendar days.
2. Facility - all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA, except permit condition I.B., for which the definition in 40 C.F.R. § 260.10 shall apply.
3. Hazardous Constituent - any constituent identified in Appendix VIII of 40 C.F.R. Part 261.
4. Regional Administrator - Regional Administrator of the United States Environmental Protection Agency, Region III, his designee or authorized representative.
5. Release - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.
6. Solid Waste Management Unit - any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

### B. STANDARD DUTIES AND REQUIREMENTS

1. Duty to Comply
  - a. The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under 40 C.F.R. § 270.61 or the analogous provisions of the State's authorized hazardous waste management regulations. Any other permit noncompliance constitutes a

violation of RCRA and is grounds for enforcement action; permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. (40 C.F.R. § 270.30(a))

- b. 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))

2. 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))

3. Duty to Properly Operate and Maintain

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment, monitoring, 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 laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when necessary to maintain compliance with the conditions of the permit. (40 C.F.R. § 270.30(e))

4. Duty to Monitor and Record Results

Pursuant to 40 C.F.R. § 270.30(j), the Permittee shall comply with the following requirements.

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All sampling and analyses shall be of adequate quality, scientifically valid, of known precision and accuracy, and of acceptable completeness, representativeness and comparability. Laboratory analysis of each sample must be performed using an appropriate method for testing the parameter(s) of interest taking into account the sample matrix. The test methods found in the agency publication, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW-846), 3rd Edition, as updated, shall be used.

b. The Permittee shall 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, the certification required by 40 C.F.R. § 264.73(b)(9) and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report, certification or application. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. (40 C.F.R. § 264.74) The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations for the active life of the facility, and, for disposal facilities, for the post-closure care period as well.

c. Records of monitoring information shall specify:

- (1) The date, exact place, and time of sampling or measurements;
- (2) The individual(s) who performed the sampling or measurements;
- (3) The date(s) analyses were performed;
- (4) The individual(s) who performed the analyses;
- (5) The analytical techniques or methods used; and
- (6) The results of such analyses.

#### 5. Duty to Provide Information

The Permittee shall furnish, within the specified 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))

#### 6. Duty to Allow Inspection and Entry

Pursuant to 40 C.F.R. § 270.30(i), the Permittee shall allow the Regional Administrator, or 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 purpose of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

7. Duty to Submit Certified Documents

- a. At least three copies of all plans, reports, notifications or other documents which are required by this permit to be submitted to the Regional Administrator or EPA, shall be sent Certified Mail, Return Receipt Requested, or hand-carried to:

RCRA Programs Branch (3HW50)  
EPA Region III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107

Each report, notification or other submission shall reference the Permittee's name, permit number and facility address. In addition, one copy of such submission shall be sent to:

PADER  
Harrisburg Regional Office  
Bureau of Waste Management  
One Ararat Boulevard  
Harrisburg, PA 17110

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

8. Duty to Maintain Documents at the Facility

The Permittee shall maintain at the Facility a written operating record that complies with all the requirements of 40 C.F.R. § 264.73. The Permittee shall maintain at the facility

all documents required by this permit and amendments, revisions or modifications to these documents.

9. Duty to Minimize Waste

The Permittee shall certify no less often than annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that the Permittee generates to the degree determined by the Permittee to be economically practicable; and 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. The Permittee shall maintain each such certification of waste minimization at the Facility until closure of such Facility. (40 C.F.R. § 264.73(b)(9))

10. Duty to Comply with the Land Disposal Restrictions

All activities of the Permittee which involve the land disposal of hazardous waste are subject to the provisions of RCRA Section 3004(b)-(m), 42 U.S.C. § 6924(b)-(m), and applicable regulations thereunder at 40 C.F.R. Part 268.

11. Reporting Requirements

a. Immediate Reporting of Emergencies to Local Authorities and the On-scene Coordinator or the National Response Center.

(1) Pursuant to 40 C.F.R. § 264.56(d)(1) and (2), if the Facility's 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/she must report his/her finding as follows:

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

(b) He/she must immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under 40 C.F.R. Part 1510) or the National Response Center (800-424-8802).

(2) The report must include:

- (a) Name and telephone number of the reporter;
  - (b) Name, address, and telephone number of the facility;
  - (c) Date, 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;
- b. Twenty-four Hour Reporting to the Regional Administrator
- (1) Pursuant to 40 C.F.R. § 270.30(1)(6), the Permittee shall report to the Regional Administrator any noncompliance which may endanger health or the environment. Information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time Permittee becomes aware of the circumstances, including:
    - (a) Information concerning release of any hazardous waste or hazardous constituent that may cause an endangerment to public drinking water supplies.
    - (b) Any information of a release or discharge of hazardous waste, hazardous constituents or of fire or explosion from the Facility, which could threaten the environment or human health outside the facility.
  - (2) The description of the occurrence and its cause shall include:
    - (a) Name, address and telephone number of the owner or operator;
    - (b) Name, address and telephone number of the facility;
    - (c) Date, time and type of incident;
    - (d) Name and quantity of material(s) involved;
    - (e) The extent of injuries, if any;

- (f) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
  - (g) Estimated quantity and disposition of recovered material resulting from the incident.
- (3) A written submission shall also be provided to the Regional Administrator within five (5) 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, 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 Regional Administrator may waive the five (5) day written notice requirement in favor of a written report within fifteen (15) calendar days.

c. Failure to Submit Relevant and/or Accurate 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 notify the Regional Administrator of such failure within seven (7) calendar days of becoming aware of such deficiency or inaccuracy. The Permittee shall submit the correct or additional information to the Regional Administrator or Director no later than fourteen (14) days of becoming aware of the deficiency or inaccuracy. (40 C.F.R. § 270.30(1)(11))

d. Noncompliance with Schedules for Interim and Final Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date. (40 C.F.R. § 270.30(1)(5))

e. Reporting Planned Changes and Anticipated Noncompliance

(1) The Permittee shall give notice to the Regional Administrator, at least 30 days prior to any planned physical alterations or additions to the permitted facility. The Permittee shall give the Regional

Administrator at least 45 days advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. For purposes of this Permit Condition I.B.11.e.(1) only, the definition of "Facility" in 40 C.F.R. § 260.10 shall apply. (40 C.F.R. § 270.30(1)(1)).

(2) For a new facility, the Permittee may not treat, store, or dispose of hazardous waste; and for a facility being modified, the Permittee may not treat, store, or dispose of hazardous waste in the modified portion of the facility except as provided in 40 C.F.R. § 270.42. (40 C.F.R. § 270.30(1)(2))

f. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time monitoring reports are submitted. The reports shall contain the information listed in permit condition I.B.11.b.(2). (40 C.F.R. § 270.30(1)(10))

g. Biennial Report

Pursuant to 40 C.F.R. § 270.30(1)(9), a report must be submitted to the Regional Administrator covering facility activities during odd-numbered calendar years. The report shall be submitted by March 1 of even-numbered calendar years. The report shall contain the information required in 40 C.F.R. § 264.75.

h. Manifest Discrepancy Report

Pursuant to 40 C.F.R. § 270.30(1)(7), if a discrepancy in a manifest is discovered, the Permittee must attempt to reconcile the discrepancy. If not resolved within fifteen (15) days of the discovery, the Permittee must submit a letter report, including a copy of the manifest, to the Regional Administrator. (40 C.F.R. §§ 264.72 and 270.30(1)(7))

i. Unmanifested Waste Report

Pursuant to 40 C.F.R. § 270.30(1)(8), if the Permittee receives unmanifested waste the Permittee must report such waste to the Regional Administrator no later than fifteen (15) days after its receipt. (C.F.R. §§ 264.76 and 270.30(1)(8))

C. APPROVED SUBMISSIONS INCORPORATED INTO PERMIT

All plans, reports, schedules, and other submissions required by

the terms of this Permit are, upon approval by the Regional Administrator, incorporated into this Permit. Any noncompliance with such approved studies, schedules, plans, reports, or other submissions shall be deemed noncompliance with this Permit. In the event of unforeseen circumstances beyond the control of the Permittee which can not be overcome by due diligence, the Permittee may request a change, subject to Regional Administrator approval, in the previously approved plans, reports, schedules or other submissions. This request may result in a major or minor modification of the Permit.

D. DISPUTE RESOLUTION

In the event of EPA disapproval in whole or in part of any submission requiring EPA approval, the Regional Administrator shall provide a statement explaining any such disapproval and shall specify any deficiencies in writing. The Permittee shall modify the document to correct the deficiencies within thirty (30) days from receipt of disapproval by the Regional Administrator. The modified document shall be submitted to EPA in writing for review. Should the Permittee take exception to all or part of EPA's disapproval, the Permittee shall submit to the Regional Administrator a written statement of grounds for the exception within fifteen (15) days from receipt of EPA's disapproval. Representatives of EPA and the Permittee may confer in person or by telephone in an attempt to resolve any disagreement. In the event that resolution is not reached within forty-five (45) days from receipt of disapproval by the Regional Administrator, the Permittee shall revise the document as required by EPA. The Permittee, upon submission of the revised document, shall state whether or not he/she agrees in whole or in part with the revised document. In the event of any disagreement, the permit shall be modified in accordance with 40 C.F.R. § 270.41 or 270.42 to incorporate the Regional Administrator's position on the matter in dispute.

E. EFFECT OF PERMIT

1. This permit authorizes only the management of hazardous waste expressly described in this permit and does not authorize any other management of hazardous waste.
2. Issuance of this permit does not convey 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 State or local laws or regulations. (40 C.F.R. §§ 270.30(g) and 270.4(b) and (c)) Compliance with the full permit during its term constitutes compliance with Subtitle C of RCRA 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. (40 C.F.R. § 270.4(a)) However, compliance with the terms of

this permit does not constitute a defense to any action brought under Section 7003 of RCRA, 42 U.S.C. § 6973, Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9606(a) (commonly known as Superfund), or any other law governing protection of public health or welfare or the environment.

3. Nothing contained herein shall in any way be deemed to waive the Permittee's obligation to comply with 40 C.F.R. Part 270, Subpart C, and applicable regulations set forth at 40 C.F.R. Part 124.

#### F. PERMIT MODIFICATION, REVOCATION AND REISSUANCE

1. This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 C.F.R. §§ 270.41, 270.42, and 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 (40 C.F.R. § 270.30(f)). Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations and laws. (RCRA Section 3005(c)(3), 42 U.S.C. § 6925(c)(3))
2. The Regional Administrator will modify the permit in accordance with 40 C.F.R. § 270.41 and Section 3005(c) of RCRA in the event that investigations required in this Permit, or any other information available to the Regional Administrator, identify solid waste management units that require corrective measures. Financial assurance by the Permittee is required if corrective measures are necessary (40 C.F.R. § 264.101(b)). This paragraph does not limit the Regional Administrator's authority to otherwise modify this permit in accordance with 40 C.F.R. Part 270, Subpart D.

#### G. PERMIT EXPIRATION AND CONTINUANCE

1. Pursuant to 40 C.F.R. § 270.50, this permit shall be effective for a fixed term not to exceed ten years. Pursuant to 40 C.F.R. § 270.51, this permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely and complete application for a new permit (see 40 C.F.R. §§ 270.10 and 270.14 - 270.29) and, through no fault of the Permittee, the Director has not issued a new permit under 40 C.F.R. § 124.15 on or before the expiration date of this permit. In addition, each permit for a land disposal facility shall be reviewed by the Regional Administrator five years after the date of permit issuance or

reissuance and shall be modified as necessary, as provided in 40 C.F.R. § 270.41. (40 C.F.R. § 270.50(d))

2. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must submit a complete application for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Regional Administrator. (40 C.F.R. §§ 270.10(h) and 270.30(b))

#### H. TRANSFER OF PERMIT

1. This permit is not transferable to any person, except after notice to the Regional Administrator. (40 C.F.R. § 270.30(1)(3)) A permit may be transferred by the Permittee to a new owner or operator only if the permit has been modified or revoked and reissued under 40 C.F.R. § 270.40(b) or 270.42(b)(2) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate Act. (40 C.F.R. § 270.40)
2. At least 30 days prior to transferring ownership or operation of the Facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 C.F.R. Part 264 and 270, and at the same time shall send a copy of such notice to the Regional Administrator.

#### I. 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)(2))

#### J. FORCE MAJEURE

1. Permittee shall perform the requirements of this Permit in the manner and within the time limits set forth herein, unless the performance is prevented or delayed by events which constitute a force majeure. Permittee shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Permittee, which cannot be overcome by due diligence and which delays or prevents performance by a date required by this Permit.
2. Permittee shall notify EPA, in writing, within five (5) business days after it becomes aware of any event which causes or may cause a delay in complying with any requirement of this Permit and any event which Permittee claims constitutes a force majeure.

Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to prevent or minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this Permit Condition I.J shall constitute a waiver of Permittee's right to assert a force majeure claim with respect to such event.

3. If EPA determines that the delay has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Permittee, which cannot be overcome by due diligence, this delay shall not make the Permittee liable for the such failure to comply. Additionally, the time for performance for that requirement of this Permit may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances, including, at the discretion of EPA, any additional time necessary to remobilize personnel or equipment and to render the site suitable for the recommencement of work. This shall be accomplished through a permit modification (Permit Condition I.F). Such extension does not alter the schedule for performance or completion of any other tasks required by this Permit, unless these tasks are also specifically altered by amendment of the Permit.

4. In the event that EPA and Permittee cannot agree that any delay or failure has been or will be caused by circumstances not reasonably foreseeable and beyond the control of Permittee, which cannot be overcome by due diligence, or if there is no agreement on the length of time extension for performance, the dispute shall be resolved in accordance with Permit Condition I.D, "DISPUTE RESOLUTION", above.

## PART II - SPECIFIC FACILITY CONDITIONS

### A. CORRECTIVE ACTION FOR CONTINUING RELEASES; PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

Section 3004(u) of RCRA, 42 U.S.C. § 6924(u), and regulations codified at 40 C.F.R. § 264.101, provide that all permits issued after November 8, 1984 must require corrective action as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit, regardless of when waste was placed in the unit.

Section 3005(c)(3) of RCRA, 42 U.S.C. § 6925(c)(3), and 40 C.F.R. § 270.32(b) provide that each permit shall contain such terms and conditions as the Administrator determines necessary to protect human health and the environment.

This permit requires the Permittee to conduct a RCRA Facility Investigation (RFI) at specified SWMUs. If, on the basis of the RFI and any other relevant information, the Regional Administrator determines that a Corrective Measures Study is necessary, the Permittee will be required to conduct a Corrective Measures Study for those releases from SWMUs which threaten human health or the environment.

The Permittee may, at any stage of the RFI, if applicable, submit to the Regional Administrator, in writing, a proposal to perform corrective measures for the remediation of any release of hazardous waste or hazardous constituent at or from the SWMU in lieu of the RFI. Any such proposal shall include a schedule for performance of such corrective measures. For any releases to soil and groundwater, the Permittee must demonstrate in such proposal, to the Regional Administrator's satisfaction, that the subsurface conditions and contaminant plume relating to such release have been adequately characterized and that the proposed corrective measures will adequately remove, contain, or treat the released hazardous waste or hazardous constituents as necessary to protect human health and the environment. The nature and extent of releases to other media shall likewise be adequately characterized. The Regional Administrator shall review such proposal and notify the Permittee of his approval or disapproval of such proposal. If the Regional Administrator approves such a demonstration, the Permittee shall be allowed to dispense with certain stages of the investigation, as described in the Regional Administrator's approval of the demonstration. No term or condition of this permit shall be affected by such proposal until such time as this permit has been modified to include such

proposal. The Regional Administrator or Permittee may seek modification of this permit pursuant to 40 C.F.R. § 270.41 or § 270.42 and § 124.5 to include such proposal.

Specific requirements for each SWMU are described in the following paragraphs. The following Attachments are included as part of this permit:

- Attachment A: RCRA Facility Workplan/Investigation/Report Requirements.
- Attachment B: Hazardous Constituent List.
- Attachment C: Quality Assurance Plan/Sample Collection Methods and Procedures Plan.
- Attachment D: Corrective Measures Study Workplan.

#### B. RCRA FACILITY INVESTIGATION

1. Within 150 calendar days of the effective date of this permit, the Permittee shall submit to the Regional Administrator and the PADER a RCRA Facility Investigation (RFI) Plan. The plan must be approved by the Regional Administrator in accordance with Permit Condition I.D, (Dispute Resolution), of this permit. This plan shall meet the objectives and requirements specified below:

The RFI objectives are to:

- a. Characterize the nature, extent, concentration and rate of migration of releases of hazardous waste or hazardous constituents from each SWMU into groundwater, surface water, and soil;
  - b. Identify potential receptors;
  - c. Provide a detailed geologic and hydrogeologic characterization of the area surrounding and underlying each SWMU; and
  - d. Determine the need for and scope of corrective measures.
2. The RCRA Facility Investigation Plan shall comply with the requirements in Attachments A through C and include the following SWMUs:
    - o Surface Impoundment (Unit 1)
    - o Waste Pile (Unit 2)
    - o Landfill (Unit 3)
    - o Solvent Storage Tank (Unit 8)
    - o Surface Impoundment (Unit 9)
    - o Waste Pile (Unit 10)
    - o Waste Oil Storage Tank (Unit 13)

- o Surface Impoundment (Unit 17)
  - o Caustic Reclaim Tank (Unit 18-1)
  - o Waste Transfer Station Tanks (Units 18-3 to 18-6)
  - o West Shore Landfills (Units 21-1, 21-2, 21-4)
  - o West Shore lagoon and Leaching Well (Unit 21-3)
  - o Oil Water Separator Tank (Unit 22)
  - o Leachate Collection Tank (Unit 28)
3. The Permittee may combine individual SWMUs into study areas.
  4. Within 330 calendar days of receipt of the Regional Administrator's approval of a RFI Plan, the Permittee shall fulfill the requirements of the RFI Plan and submit a RFI Report for the Regional Administrator's approval to the Regional Administrator and to the PADER Harrisburg Regional Office.
  5. If the Permittee believes that certain requirements in this Permit are not appropriate, the specific requirement shall be identified and the rationale for inappropriateness shall be provided for in the required workplan.

C. CORRECTIVE MEASURES STUDY

1. If the Regional Administrator determines on the basis of the RFI or any other information that corrective measures for releases of hazardous waste or hazardous constituents are necessary to protect human health and the environment, the Regional Administrator will advise the Permittee of this determination, and the reasons therefor, in writing. The Permittee shall submit to the EPA for approval and to PADER Harrisburg Regional Office a Corrective Measures Study (CMS) Plan within 120 calendar days receipt of notification of such determination. The CMS Plan shall include a schedule for expeditious performance of the study.
2. The Corrective Measures Study shall comply with the requirements in Attachment D.
3. Within 90 calendar days of receipt of the Regional Administrator's written approval of the CMS Plan the Permittee shall begin implementation of the approved CMS Plan. The Permittee shall submit PADER Harrisburg Regional Office and to the EPA for the Regional Administrator's approval a CMS Report which recommends a Corrective Measure(s) in accordance with the requirements set forth in Attachment D of this permit and in accordance with the terms and schedules in the approved CMS Plan.

D. INTERIM MEASURES; EMERGENCY RESPONSE; RELEASE REPORTING

1. Emergencies

If, at any time during the term of this permit, the Permittee discovers that a release of hazardous waste or hazardous constituents at or from the Facility is presenting or may present an imminent and substantial endangerment to human health or the environment, and such release is not subject to Contingency Plan and Emergency Procedures as defined in the portion of the RCRA permit issued by PADER, the Permittee shall:

- a. Unless otherwise directed by EPA, immediately take such actions as are necessary and appropriate to address such release; and
- b. Notify EPA as soon as practicable of the source, nature, extent, location and amount of such release, the endangerment posed by such release and the actions taken and/or to be taken to address such release. Such notification shall be confirmed in writing within three (3) calendar days of discovery of such release.

## 2. Interim Measures

If, at any time during the term of this permit, the Permittee discovers a release of hazardous waste or hazardous constituents at or from the Facility which is adversely affecting or may adversely affect human health or the environment, and such release:

- a. Is not being addressed by corrective measures at the time of such discovery;
- b. Does not constitute an emergency under permit condition II.D.1; and
- c. Is not subject to the Contingency Plan and Emergency Procedures as defined in the State-issued portion of this permit, the Permittee shall:
  - (1) Submit to EPA, in writing, the following information concerning the release within the specified time:
    - (a) The nature, source, extent, amount and location within three (3) calendar days of discovery;
    - (b) The concentration of each hazardous waste or hazardous constituent and, if known, the background level of each such hazardous waste or hazardous constituent within seven (7) calendar days of discovery;
    - (c) The known or expected pathway through which the

contamination is migrating or may migrate; the extent, rate, direction of contamination; and estimated quantities and/or volumes released within thirty (30) calendar days of discovery; and

- (d) The projected fate and transport, to the extent known, within thirty (30) calendar days of discovery.
- (2) Without doing either a risk assessment or an endangerment assessment, with respect to potential human exposure, identify the following within thirty (30) calendar days of discovery:
- (a) The exposure pathway(s) (e.g., air, fire/explosion, groundwater, surface water, contact, ingestion);
  - (b) The location and demographics of populations potentially at risk from exposure;
  - (c) The potential short-term and long-term effects of human exposure;
  - (d) Whether and how human exposure has actually occurred or when and how human exposure may occur; and
  - (e) The possible consequence(s) of delaying response to such release.
- (3) Identify potential environmental exposure and threats such as those listed below within 30 calendar days of discovery:
- (a) The media which have been and may be contaminated (e.g., groundwater, air, surface water, soil);
  - (b) The likely short-term and long-term threats and effects on the environment; and
  - (c) If response is delayed, how the situation will change; and
- (4) Submit an outline of proposed interim measures which will temporarily or permanently arrest the release, and which are expected to be a necessary component of the corrective measures, within thirty (30) calendar days of discovery.

- d. If the Regional Administrator determines, on the basis of information submitted by the Permittee pursuant to permit condition II.D.2., or any other information, that corrective action is necessary to protect human health or the environment from a release of hazardous waste or hazardous constituent from a SWMU, the Permittee may be required to implement interim measures. Such interim measures will be included in this permit pursuant to 40 C.F.R. § 270.41 or 270.42.
3. If, at any time during the term of this permit, the Permittee discovers a release of hazardous waste or hazardous constituent at or from the Facility which:
    - a. Is not being addressed by corrective measures at the time of such discovery;
    - b. Is not being addressed pursuant to permit condition II.D.1 or 2; or
    - c. Is not subject to the Contingency Plan and Emergency Procedures as set forth in the portion of the RCRA permit issued by PADER;

The Permittee shall notify EPA, in writing, of the nature, source, extent, location and approximate amount of such release within seven (7) calendar days of discovery of such release.

4. Based on the information submitted in permit condition II.D.3, the Regional Administrator may require the SWMU to be included in an ongoing RCRA Facility Investigation or may require a separate RCRA Facility Investigation for the SWMU.
5. Nothing in this permit shall limit EPA's authority to undertake or require any person to undertake response action or corrective action under any law, including but not limited to, Sections 104 or 106 of CERCLA, 42 U.S.C. §§ 9604 or 9606, and Section 7003 of RCRA, 42 U.S.C. § 6973. Nothing in this permit shall relieve the Permittee of any obligation it may have under any law, including, but not limited to, Section 103 of CERCLA, to report releases of hazardous waste, hazardous constituents or hazardous substances to, at or from the Facility.

#### E. GUIDANCE DOCUMENTS

In addition to guidance documents specified elsewhere in this permit or Attachments, the following documents shall be referred to as appropriate:

1. U.S. EPA, May 1978 (Rev. May 1986), NEIC Policies and

Procedures, Office of Enforcement and Compliance Monitoring, National Enforcement Investigations Center. EPA-330/9-78-001-R, Denver, Colorado, 80225;

2. U.S. EPA, March 1987, Data Quality Objectives for Remedial Response Activities, Volume 1: Development Process, Volume 2: Example Scenario, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement. EPA 540/6-87/003a, OSWER Directive No. 9335.0-7B;
3. U.S. EPA, September 1986, RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, Office of Waste Programs Enforcement and Office of Solid Waste and Emergency Response, OSWER Directive No. 9950.1;
4. U.S. EPA, October 1986, RCRA Facility Assessment Guidance, Office of Solid Waste, OSWER Directive No. 9502.00-5;
5. U.S. EPA, May 1989, Interim Final RCRA Facility Investigation (RFI) Guidance, Volumes I - IV, Office of Solid Waste, OSWER Directive No. 9502.006D;
6. U.S. EPA, June 1988, Interim Final RCRA Corrective Interim Measures Guidance, Office of Solid Waste, EPA/530-SW-88-029, OSWER Directive No. 9902.4; and
7. Any future EPA guidance regarding Corrective Measure Studies, Design or Implementation.

F. SOLID WASTE MANAGEMENT UNIT ASSESSMENT

1. The Permittee shall notify the Regional Administrator in writing of the discovery of any newly-identified SWMU at the Facility, after the date of issuance of this permit, no later than thirty (30) calendar days after the date of discovery. The notification shall include, but not be limited to, the following known information:
  - a. A description of the SWMU's type, function, dates of operation, location (including a map), design criteria, dimensions, materials of construction, capacity, ancillary systems (e.g., piping), release controls, alterations made to the unit, engineering drawings, and all closure and post-closure information available, particularly whether wastes were left in place;
  - b. A description of the composition and quantities of solid wastes processed by the units with emphasis on hazardous wastes and hazardous constituents; and
  - c. A description of any release (or suspected release) of hazardous waste or hazardous constituents originating from

the unit. Include information on the date of release, type of hazardous waste or hazardous constituents, quantity released, nature of the release, extent of release migration, and cause of release (e.g., overflow, broken pipe, tank leak, etc.). Also provide any available data which would quantify the nature and extent of environmental contamination, including the results of soil and/or groundwater sampling and analysis efforts. Likewise, submit any existing monitoring information that indicates releases of hazardous waste or hazardous constituents have not occurred or are not occurring. The Permittee may refer to information regarding releases previously submitted to EPA under permit condition IV, Emergency Response, Interim Measures, Release Reporting.

2. Upon receipt of the notification of any newly-identified SWMU, the Regional Administrator will determine the need for corrective action at such SWMU. If corrective action is necessary to protect human health or the environment, the Regional Administrator will determine whether a RCRA Facility Investigation (the investigation may initially involve verification of suspected releases; if confirmed, further characterization of such releases will be necessary) will be performed and the need for and scope of any Interim Measures.
3. Within 90 calendar days after receipt of the Regional Administrator's determination that a RCRA Facility Investigation is necessary, the Permittee shall submit a RCRA Facility Investigation Plan meeting the requirements of Permit Condition II.B. The Regional Administrator's determination shall either specify the media and/or parameters to be investigated or shall require the Permittee to propose and justify the selection of media and/or parameters.
4. Within the time specified in the approved RCRA Facility Investigation Plan, which shall not be less than ninety (90) calendar days after receipt of the Regional Administrator's approval of the Plan, the Permittee shall submit the RCRA Facility Investigation Report fulfilling the requirements of Permit Condition II.B.
5. The Permittee may propose either to incorporate any newly-identified SWMU into an ongoing RCRA Facility Investigation or to submit a proposal for the performance of corrective measures at such newly-identified SWMU in accordance with the provisions of Permit Condition II.A. Any such proposal shall be submitted to the Regional Administrator along with notification of the discovery of the SWMUs.

#### G. RECORD KEEPING

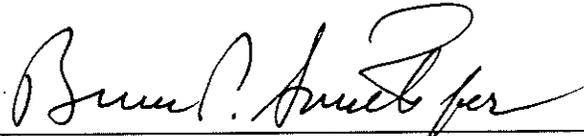
Solid waste management units.

Upon completion of closure of any SWMU, the Permittee shall maintain a record of the closure measures taken in the facility operating record.

H. ACCESS FOR CORRECTIVE ACTION OVERSIGHT

EPA and its authorized representatives shall have access to the Facility at all reasonable times for the purpose of monitoring compliance with the provisions of this permit. The Permittee shall use its best efforts to obtain access to property beyond the boundaries of the Facility at which corrective action is required by this permit (see Section 3004(v) of RCRA, 42 U.S.C. § 6924(v)) (1) for itself and any contractor of the Permittee for the purpose of taking corrective action required by this permit and (2) for EPA and its authorized representatives for the purposes described in this paragraph.

3/21/91  
Date Signed

  
\_\_\_\_\_  
Thomas C. Voltaggio, Director  
Hazardous Waste Management Division

ATTACHMENT A  
RCRA FACILITY WORKPLAN/INVESTIGATION/REPORT REQUIREMENTS

A. RCRA Facility Investigation Workplan requirements:

1. The Permittee shall provide a description of current conditions at each SWMU. Include a topographic map(s) consistent with the requirements set forth in 40 C.F.R. § 270.14(b)(19) and of sufficient detail and accuracy to locate and report all current and future work performed at the site. The map(s) shall depict the following:
  - a. General geographic location;
  - b. Property lines, with the owners of all adjacent property clearly indicated;
  - c. The location of all known past solid or hazardous waste treatment, storage, or disposal areas and the site of all known spills, fires or other accidental or intentional release locations, including the approximate locations of any groundwater contamination plumes presently identified;
  - d. All known past and presently operating product and hazardous or solid waste underground tanks or piping; and
  - e. The location of all production and groundwater monitoring wells, whether or not they are associated with the particular SWMU under investigation. These wells shall be clearly labeled. Ground, top of casing and screened-interval elevations shall also be provided.
2. Based on existing information, the Permittee shall identify the potential corrective measure technologies that may be used at the Facility or beyond the boundaries of the Facility to respond to releases of hazardous waste or hazardous constituents at or from the Facility. The Permittee shall also identify any field, laboratory, bench-scale or pilot-scale data that needs to be collected in the RFI to facilitate the evaluation and selection of the final corrective measure(s), if any, for releases at or from the Facility (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.).
3. Project Management Plan

The Permittee shall submit a Project Management Plan. The plan shall include a discussion of the technical strategy, schedules, budget, and personnel that will be used for the

study. The plan shall also include a description of the qualifications of personnel performing or directing the RFI, including contractor personnel, and document the overall management approach to the RFI.

4. RFI Sampling and Analysis Plan

- a. The Permittee shall submit a RFI Sampling and Analysis Plan for each SWMU/AOC listed in Permit Condition Part II.B.1.

The plan shall provide for the analyses identified in Attachment B and all aqueous samples shall be analyzed for Total Organic Carbon and Total Organic Halogen and tested for pH. Also, any hazardous constituent not listed in Attachment B, that is known or suspected by the Permittee to have been treated, stored, disposed or contained in the unit, shall also be included for analysis.

- b. The Sampling and Analysis Plan shall provide the rationale for the selection of sample locations and number of samples. The Permittee shall identify the specific sampling locations for each SWMU and for each affected environmental medium.
- c. The RCRA Investigation Plan shall include a Quality Assurance Plan and a Sample Collection Methods and Procedures Plan which conform to the analytical requirements set forth in Attachment C. The Permittee shall also furnish to the Regional Administrator the Laboratory Deliverables as specified in Attachment C.
- d. The Regional Administrator reserves the right to require the Permittee to furnish the Regional Administrator with split samples for any samples taken by the Permittee pursuant to this permit. Where split samples are taken and analyzed, the Regional Administrator will provide the validated results to the Permittee for evaluation in the RCRA Facility Investigation Report. The Permittee shall identify a procedure in the Sampling Plan for notifying the Regional Administrator of any planned sampling dates.
- e. The RFI Sampling Plan must identify the disposition of any wastes generated as a result of the investigation. If any of the SWMUs contain hazardous wastes, whether the hazardous wastes are regulated or not by federal or state regulations, the Permittee shall comply with applicable regulations including the Land Disposal Restrictions as contained in 40 C.F.R. Part 268.

5. Safety Plan

The Permittee shall prepare and submit to the Regional Administrator a Safety Plan for each sampling activity. The Permittee shall consult appropriate guidance such as Standard Operating Safety Guides, US EPA, July 1988 (SOSG) and OSHA regulations at 29 C.F.R. Part 1910 regarding the plan.

While the Regional Administrator may comment on the Safety Plan, the Regional Administrator will not approve or disapprove the plan.

6. Community Relations

- a. Prepare a fact sheet describing the scope and objectives of the RCRA Facility Investigation. The Permittee shall release this fact sheet to local officials or residents should any inquiries be made as to the reason for the RCRA Facility Investigation.
- b. Notification of groundwater contamination. If, at any time, the Permittee discovers that hazardous constituents in groundwater that may have been released from a SWMU or AOC at the Facility have migrated beyond the Facility boundary in concentrations that exceed health-based<sup>1</sup> levels, the Permittee shall, within fifteen (15) calendar days of such discovery, provide written notice to the Regional Administrator and any person who owns or resides on the land which overlies the contaminated groundwater.
- c. Notification of air contamination. If, at any time, the Permittee discovers that hazardous constituents in air that may have been released from a SWMU or AOC at the Facility have migrated or are migrating to areas beyond the facility boundary in concentrations that exceed health-based levels, and that residences or other places at which continuous, long-term exposure to such constituents might occur are located within such areas, the Permittee shall, within fifteen (15) calendar days of

---

<sup>1</sup>The health-based level for such hazardous waste or hazardous constituents as derived in a manner consistent with EPA guidelines set forth in 51 Federal Register 33992, 34006, 34014, 34028. The health-based level for carcinogens represents a concentration associated with an excess upper bound lifetime risk of  $1 \times 10^{-6}$  due to continuous constant lifetime exposure, and for systemic toxicants represents a concentration to which the human population, exposed to on a daily basis, is not likely to suffer an appreciable risk of deleterious effect during a lifetime. Any list prepared by EPA according to these procedures may be used. Such a list is contained in Chapter 8, RCRA Facility Investigation, Interim Final, May 1989. As these lists may be revised at any time based on new information, contact EPA for guidance.

such discovery:

- (1) Provide written notification to the Regional Administrator; and
- (2) Provide notice to all individuals who have or may have been subject to such exposure.

7. Schedule

The Permittee shall provide a schedule for performance of the tasks in the RFI Plan.

B. RCRA Facility Investigation

The Permittee shall conduct the following investigations which are necessary to characterize the Facility (Environmental Setting), define the source of any release of hazardous waste or hazardous constituents (Source Characterization), define the degree and extent of contamination (Contamination Characterization) and identify actual or potential receptors.

The investigations must result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative(s) during the Corrective Measures Study. The Permittee shall implement the plans described in permit condition Section A of Attachment A.

1. 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:

a. Geology and Hydrogeology

The Permittee shall conduct a program to evaluate the hydrogeologic conditions at the Facility. The program shall provide:

- (1) A description of the regional and site-specific geologic units underlying the Facility, including:
  - (a) Stratigraphy: strike and dip, and identification of stratigraphic contacts;
  - (b) Structural features: folding, fracturing, channeling, faulting, jointing; and
  - (c) Soil: classification, description of appearance, and consistency;

- (2) A description of regional and site-specific hydrogeologic characteristics, including:
  - (a) Regional and Facility specific groundwater flow patterns;
  - (b) A characterization of seasonal variations in the groundwater flow regime, including any perched groundwater zones;
  - (c) Identification and characterization of areas of recharge and discharge;
  - (d) An analysis of any topographic or geomorphic features that might influence the groundwater flow system; and
  - (e) A description of the units including:
    - (i) Hydraulic conductivity;
    - (ii) An interpretation of hydraulic interconnections between saturated zones, including any perched zones; and
    - (iii) Attenuation capacity and mechanisms of the soils (e.g., ion exchange capacity, organic carbon content, mineral content, etc.);
- (3) Using a topographic map as a base, and at least two approximately perpendicular geologic cross-sections for each SWMU /AOC and the surrounding area, describe the extent (depth, thickness, lateral extent) of each geologic unit including:
  - (a) Generalized soil (based on testing, grain size, water content, Atterburg limits, etc.) and rock profiles;
  - (b) Encountered features such as faults, fractures, voids, stratum changes, lenses, pinch out zones, etc.;
  - (c) Location and type of sampling including blow counts, percent recovery, etc.;
  - (d) Location and type of in-situ testing performed (pressuremeter, packer permeability testing, slug tests, pump tests, etc.); and

- (e) Groundwater elevation and/or potentiometric elevation;
- (4) A description of the Facility site flow system including:
  - (a) Water-level contour and/or potentiometric maps;
  - (b) The vertical and horizontal components of flow;
  - (c) Any temporal changes in water levels or hydraulic gradients, for example, due to tidal or seasonal influences;
  - (d) Active and inactive local water supply and production wells with an approximate schedule of pumping; and
  - (e) Manmade hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention ponds, etc.).

b. Soils

The Permittee shall conduct a program to evaluate the soil conditions at the Facility. The program shall provide the following information:

- (1) Where remediation by removal of soils is the only corrective measure option, provide map(s) and perpendicular cross sections showing:
  - (a) The extent of contamination;
  - (b) Depth to groundwater; and
  - (c) The consistency and distribution of soils (using the Unified Soil Classification System (USCS) (ASTM D 2487)) (important for stability of cuts);
- (2) Where remediation by removal is the likely option but it is necessary to determine the extent of migration (for example, to assess the mobility of wastes from an unlined surface impoundment or landfill) provide the following in addition to the requirements immediately above:
  - (a) Depth to bedrock and the characteristics of the bedrock including discontinuities such as faults, fissures, joints, fractures, sinkholes, etc.;

- (b) A detailed soil survey conducted according to U.S. Department of Agriculture (USDA) Soil Conservation Service (SCS) procedures including:
  - (i) USDA Textural Soil Classification and soil profiles showing stratifications or zones which may affect or direct the subsurface flow;
  - (ii) Hydraulic conductivity and the SCS hydrologic group classification, A, B, C or D;
  - (iii) Relative permeability (only if the waste may have changed the soil's hydraulic conductivity, such as concentrated organics);
  - (iv) Storage capacity;
  - (v) Shrink-swell potential (where extreme dry weather could lead to the formation of cracks);
  - (vi) Potential for contaminant transport via erosion, using the Universal Soil Loss Equation;
  - (vii) Soil sorptive capacity;
  - (viii) Cation exchange capacity;
  - (ix) Soil organic content; and
  - (x) Soil pH;
- (c) The following contaminant characteristics must be included:
  - (i) Physical state;
  - (ii) Viscosity;
  - (iii) pH;
  - (iv) pKa;
  - (v) Density;
  - (vi) Water solubility;

- (vii) Henry's Law Constant;
  - (viii)  $K_{ow}$ ;
  - (ix) Biodegradability; and
  - (x) Rates of hydrolysis, photolysis and oxidation;
- (d) When in-situ soil treatment will likely be the remediation, the following additional information must be provided:
- (i) Bulk density;
  - (ii) Porosity;
  - (iii) Grain size distribution;
  - (iv) Mineral content;
  - (v) Soil moisture profile;
  - (vi) Unsaturated hydraulic conductivity;
  - (vii) Effect of stratification on unsaturated flow; and
  - (viii) Infiltration and evapotranspiration.

c. 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:

- (1) Description of the temporal and permanent surface water bodies including:
  - (a) For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;
  - (b) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, tidal and seasonal fluctuations, and flooding tendencies (i.e., 100-year event);
  - (c) Drainage patterns; and
  - (d) Evaporation;

- (2) Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biochemical oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (ammonia, nitrate/nitrite nitrogen, phosphate), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.;
- (3) Description of sediment characteristics including:
  - (a) Deposition area;
  - (b) Thickness profile; and
  - (c) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.).

## 2. Source Characterization

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, 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:

### a. Unit/Disposal Area Characteristics:

- (1) Location of unit/disposal area;
- (2) Type of unit/disposal area;
- (3) Design features;
- (4) Operating practices (past and present);
- (5) Period of operation;
- (6) Age of unit/disposal area;
- (7) General physical conditions; and
- (8) Method used to close the unit/disposal area.

### b. Waste Characteristics:

- (1) Type of waste placed in the unit, including but not limited to: hazardous classification (e.g.,

flammable, reactive, corrosive, oxidizing, or reducing agent); quantity; and chemical composition.

- (2) Physical and chemical characteristics, including but not limited to: physical form (solid, liquid, gas); physical description (e.g., powder, oily sludge); temperature; pH; general chemical class (e.g., acid, base, solvent); molecular weight; density; boiling point; viscosity; solubility in water; cohesiveness of the waste; and vapor pressure.
- (3) Migration and dispersal characteristics of the waste, including but not limited to: sorption; biodegradability, biocentration, biotransformation; photodegradation rates; hydrolysis rates; and chemical transformations.

The Permittee shall document the procedures used in making the above characterizations.

### 3. Contamination Characterization

The Permittee shall collect analytical data on groundwater, and soil 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, 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:

#### a. Groundwater Contamination

The Permittee shall conduct a groundwater investigation to characterize any plumes of contamination at the Facility. This investigation shall provide, at a minimum, provide the following information:

- (1) A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the Facility;
- (2) The horizontal and vertical direction of contamination movement;
- (3) The velocity of contaminant movement;
- (4) The horizontal and vertical concentration profiles of 40 C.F.R. Part 261 Appendix VIII constituents in the plume(s);

- (5) An evaluation of factors influencing the plume movement; and
- (6) An extrapolation of future contaminant movement.
- (7) Each plan shall include the locations, design and installation procedures for any additional groundwater monitoring wells required to complete the monitoring well network at each area as necessary to meet the Remedial Investigation objectives. These wells may be used in conjunction with existing wells in the area. All information required of the new wells shall also be required of the existing wells. The monitoring well network shall meet the following requirements:
  - (a) The upgradient wells must be capable of yielding samples that are representative of background water quality in the uppermost aquifer and are not affected by any solid waste management unit. The number and location of the wells must be sufficient to characterize the spatial variability of background water;
  - (b) The downgradient wells must be capable of immediately detecting any statistically significant amounts of hazardous waste or constituents that migrate from each solid waste management unit into the groundwater; and
  - (c) The monitoring system shall be designed to operate for a period of long-term duration.

When developing this information, the Permittee shall refer to the Technical Enforcement Guidance Document (EPA, September, 1986) to determine methods and materials that are acceptable to EPA.

- (8) Each plan shall provide a description of the groundwater monitoring wells including the following information:
  - (a) A description and map of well locations, including a survey of each well's surface reference point and the elevation of the top of its casing;
  - (b) Size and depth of each well;
  - (c) Description of well intake design, including screen slot size and length, filter pack

materials and method of filter pack  
emplacement;

- (d) Type of well casing and screen materials. The choice of well materials shall be made in light of the parameters to be monitored and the nature of the leachate that could potentially migrate from the facility. The well materials shall:  
(1) minimize the potential of absorption of constituents from the samples; and (2) maintain their integrity for the life of the system.
  - (e) Description of methods used to seal the well from the surface and prevent downward migration of contaminants through the well annulus; and
  - (f) Description of the methods and procedures used to develop the well.
- (9) The Permittee shall select a sampling regime and conduct sampling and analysis activities capable of yielding representative samples. The sampling program shall include the following elements:
- (a) A list of parameters capable of detecting releases of hazardous waste or hazardous constituents into groundwater. The parameters shall be representative of hazardous constituents at least as mobile as the most mobile hazardous constituent that may be present after considering:
    - (i) The types, quantities, and concentrations of hazardous constituents in wastes managed at the SWMU or AOC. Incidental constituents which may be released into the unit area from process areas shall be included in this list of analyses;
    - (ii) The mobility, stability, and persistence of hazardous waste constituents or their reaction products in the unsaturated zone beneath the waste management area;
    - (iii) The detection ability of the indicator parameters, waste constituents of reactive products in groundwater;
    - (iv) The concentration of and the natural variation (known or suspected) of the proposed monitoring parameters in background media; and

- (v) The list must include the basis for selecting each proposed indicator parameter, including any analysis or calculations performed. The basis for selection shall, where possible, include chemical analysis of the unit's waste and/or leachate as appropriate. The list shall also include parameters to characterize the site-specific chemistry of groundwater at the site including, but not limited to, the major anions and cations that make up the bulk of dissolved solids in water (i.e.,  $\text{Cl}^-$ ,  $\text{Fe}^{+3}$ ,  $\text{Mn}^{+2}$ ,  $\text{Na}^+$ ,  $(\text{SO}_4)^{-2}$ ,  $\text{Ca}^{+2}$ ,  $\text{Mg}^{+2}$ ,  $\text{K}^+$ ,  $\text{NO}^{-3}$ ,  $\text{PO}^{-3}$ , silicate, and ammonium).

The Permittee shall document the procedures used to characterize contaminant plume(s), for example, geophysics, modeling, pump tests, slug tests, nested piezometers, etc.

b. 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 contaminant release. The investigation shall include:

- (1) A description of the vertical and horizontal extent of contamination;
- (2) A description of contaminant and soil chemical properties within the contaminant source area and plume. This includes contaminant solubility, speciation, adsorption, leachability, cation exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation;
- (3) Specific contaminant concentrations;
- (4) The velocity and direction of contaminant movement; and
- (5) An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above characterizations and determination of future contaminant movement.

4. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that may be exposed to releases of hazardous waste or hazardous constituents from the Facility. Chemical analysis of biological samples may be required. Data on observable effects in ecosystems may also be required.

a. 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/garden 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) Laboratory and Bench Scale Studies

If specifically required at any time during the RFI, the Permittee shall conduct laboratory and/or bench scale studies to determine the applicability of 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 type(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.

5. The Permittee shall also submit quarterly progress reports to the Regional Administrator beginning two months after the Regional Administrator's approval of the plan and continuing until the RFI Report is submitted.

#### C. RCRA Facility Investigation Report

The RCRA Facility Investigation Report shall include an analysis and summary of all Facility investigations and the results of such investigations. 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 the environment, and to support the Corrective Measures Study.

##### 1. Data Analysis

The Permittee shall analyze all Facility investigation data outlined in Section B of this Attachment, RCRA Facility Investigation, 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 of the area.

##### 2. Media Cleanup Standards

The Permittee shall identify the following cleanup standards:

a. Groundwater Cleanup Standards

For regulated units the Permittee shall provide information to support EPA's selection/development of Groundwater Cleanup Standards for all of the 40 C.F.R. Part 261 Appendix VIII constituents found in the groundwater during the RCRA Facility Investigation.

(1) The Groundwater Cleanup Standards shall consist of:

- (a) The Maximum Contaminant Level (MCL) for any constituents with an EPA promulgated Maximum Contaminant Level (MCL), if the background level of the constituent is below the value of the EPA approved MCL; or
- (b) The background level of that constituent in the groundwater; or
- (c) A standard established according to the criteria for Other Media Cleanup Standards.

b. Other Media Cleanup Standards

The Permittee shall identify concentration levels in the affected media which protect human health and the environment.

Unless a lower concentration level is deemed necessary to protect environmental receptor, cleanup standards shall be established as follows:

- (1) For known or suspected carcinogen classified by EPA's weight of evidence classification as an A, B1 or B2 carcinogen, cleanup standards shall be established at concentration levels which represent an excess upperbound lifetime risk to an individual of  $1 \times 10^{-6}$ , or
- (2) For systemic toxicants, cleanup standards shall represent concentration levels to which the human population (including sensitive subgroups) could be exposed on a daily basis without appreciable risk of deleterious effect during a lifetime.

3. The Permittee shall recommend which SWMUs, or groups of SWMUs or AOCs, require a Corrective Measures Study. The Permittee shall also identify those corrective action alternative(s) the Permittee intends to investigate further. The Permittee may

either investigate several alternatives or focus on a limited number of alternatives. A schedule for the expeditious completion of the Corrective Measures Study shall be included.

ATTACHMENT B

HAZARDOUS CONSTITUENT LIST

HAZARDOUS CONSTITUENT

Antimony  
Arsenic  
Barium  
Benzene  
Beryllium  
Bromoform  
Bromoethane  
Butoxy ethanol  
Cadmium  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroether  
2-Chloroethylvinyl ether  
Chloromethane  
Chloroform  
Chlorinated Fluorocarbons  
Chromium (Hexavalent)  
Chromium (Trivalent)  
Chromium (Total)  
Cresylic Acid  
Cyanide (Complex)  
Cyanide (Salts)  
m-Cresol  
o-Cresol  
p-Cresol  
1-Dichloroethane  
o-Dichlorobenzene  
m-Dichlorobenzene  
p-Dichlorobenzene  
Endrin  
Ethylbenzene  
2-Ethoxyethanol  
Lead  
Lindane  
Isobutanol  
Methoxychlor  
Methylene Chloride #syn.# Dichloromethane  
Methyl ethyl ketone #syn.# 2-Butanone  
Mercury  
Nickel  
Nitrobenzene  
2-Nitropropane

Perchloroethylene  
Phenols  
Polychlorinated Biphenyls  
Pyridine  
Selenium  
Silver  
Sulphate  
Thallium  
Trans-1,2-Dichloroethane  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene  
Toluene  
Toxaphene  
1,2,4-Trichlorobenzene  
1,1,1-Trichloroethane  
1,1,2-Trichloroethane  
1,1,2-Trichloro-1,2,2-Trichloroethane  
Trichloroethylene  
Trichlorofluoromethane  
Vinyl Chloride  
Xylene

ATTACHMENT C  
QUALITY ASSURANCE PLAN/SAMPLE COLLECTION METHODS AND PROCEDURES PLAN

The Permittee shall submit a Quality Assurance Project Plan and Sample Collection Methods and Procedures Plan and furnish to EPA the Laboratory Data Package as specified in this Attachment.

1. Sample Collection Methods and Procedures - The Permittee shall:
  - a. Describe the samplers or sampling equipment for each environmental media and/or waste matrix to be sampled at each SWMU;
  - b. Describe the sampling procedure for each environmental media and/or waste matrix in explicit detail. Include, but not be limited to, procedures and methods for work such as bailing, drilling holes, etc.;
    - (1) Describe the sequence to be followed in conducting the field activities.
    - (2) Include quality assurance samples for analysis at the rate specified:
      - (a) Equipment Blank - One with each analytical batch or every 20 samples, whichever is greater;
      - (b) Trip Blank - One with each analytical batch or every 20 samples, whichever is greater;
      - (c) Field Blank - One with each analytical batch or every 20 samples, whichever is greater; and
      - (d) Replicates (see Figure 1) - One with each analytical batch or every 20 samples, whichever is greater.
    - (3) Identify the type and source of the sample containers to be used for each analytical parameter;
    - (4) Detail the sample preservation methods to be utilized and state the maximum permissible holding times to be allowed for each analytical parameter prior to analysis;
    - (5) Describe the sample custody procedures starting with the cleaning of sample containers to be used, and provide an example "chain-of-custody" form;

- (6) Detail the sampling equipment decontamination procedures to be utilized; and
- (7) Describe what will be done with disposable equipment contaminated on site and how contaminated materials will be disposed of, including contaminated environmental media.

2. Analyses - The Permittee shall:

- a. Identify the analytical laboratory to be used.
- b. Identify all analytical methods to be used. Analytical methods utilized must be capable of achieving the practical quantification limits (PQLs) or health based standards, whichever are lower, and the data quality requirements specified in the approved method. The need for deviation from any of these criteria must be fully documented in the analytical plan and submitted to EPA for approval. EPA will review this documentation and decide whether to approve any change.

Test methods for analysis of hazardous constituents have been standardized by EPA in its publication, Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods (SW-846), 3rd Edition as updated. Any other appropriate standardized method may be used by the Permittee so long as the method adheres to the quality assurance requirements in this Attachment. Non-standardized methods may be used with prior EPA approval provided the Permittee submits a comprehensive description of the test method along with data from tests designed to evaluate equivalency with standard methods. This data shall include a statistical analysis of the equivalency test data.

- c. Use, at a minimum, the quality control procedures found in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW 846), 3rd Edition as updated.

3. Quality Assurance Project Plan - The Permittee shall have a Quality Assurance program for ensuring that all information, data and decisions resulting from the RCRA Facility Investigation are technically sound and properly documented. The Permittee shall also have a quality control program to obtain prescribed standards of performance in the data gathering process, which are contained in the approved method.

The Permittee shall use an analytical laboratory which has a documented Quality Assurance Program.

The Permittee shall prepare the Quality Assurance Project

Plan utilizing guidelines and specifications found in EPA's document QAMS-005/80. The Plan shall address the 16 plan elements discussed in QAMS-005/80, which are as follows:

- a. Title page, introduction;
  - b. Table of contents;
  - c. Project description;
  - d. Project organization;
  - e. Quality assurance objectives for data measurement;
  - f. Sampling procedure;
  - g. Sample and document custody procedures;
  - h. Calibration procedures and frequency;
  - i. Analytical procedures;
  - j. Data reduction, validation and reporting;
  - k. Internal quality control checks;
  - l. Performance and system audits;
  - m. Preventive maintenance;
  - n. Data measurement assessment procedures;
  - o. Corrective Action; and
  - p. Quality assurance reports to management.
4. Laboratory Data Package - The Permittee shall ensure that the laboratory(s) analyzing samples required by this Permit shall use the methods identified in 2.b. above and submit the required deliverables. The laboratory data package shall include:
- a. A Quality Control Summary including:
    - (1) Methods Summary;
    - (2) Surrogate Recoveries;
    - (3) Matrix Spike/Matrix Spike Duplicate Recoveries;
    - (4) Method/Trip/Field/Blank Results; and
    - (5) Storage.

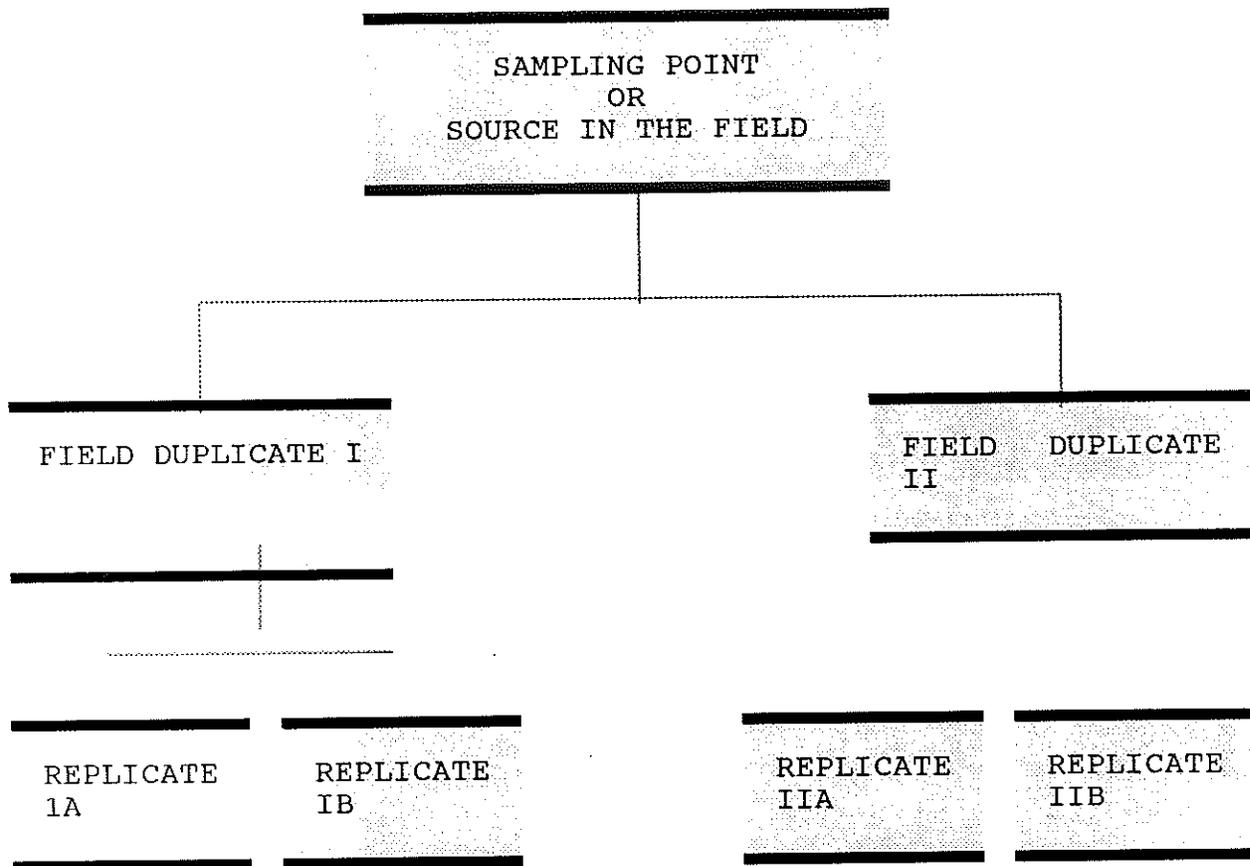
b. A Sample Data Section including:

- (1) Specific Compound Results;
- (2) Results of Tentatively Identified Compound Analysis;
- (3) Detection Limits;
- (4) Sample Analysis Dates; and

c. Standards Data including sources:

The Permittee shall provide data validation of analyses done by the laboratory(ies) (to be described in the Quality Assurance Project Plan). This data validation shall determine data acceptability and shall be performed in accordance with EPA's Functional Guidelines for Data Review for data derived by Contract Laboratory Procedure Methods (Laboratory Data Validation - Functional Guidelines for Evaluating Organic Analyses, Hazardous Site Evaluation Division, US EPA, February 1, 1988 and Laboratory Data Validation - Functional Guidelines for Evaluating Inorganic Analyses, Hazardous Site Evaluation Division, US EPA, June 13, 1988). If another method is used, the data validation shall be performed in accordance with the QA/QC data validation criteria set forth in that method. For methods lacking QA/QC data validation protocols, the Permittee must establish validation criteria such as those in Section 8 of the EPA Series Methods in 40 CFR Part 136. The appropriate quality assurance data validation summary reports shall be submitted to EPA, along with sample data and summary sheets and final sample results.

The Permittee shall ensure that EPA personnel and/or EPA authorized representatives are allowed reasonable access to the laboratory(ies), records and personnel utilized by the Permittee for analysis of samples collected pursuant to this permit.



Duplicates are collected in the field  
 Replicates are analyzed in the laboratory

Figure 1

ATTACHMENT D  
CORRECTIVE MEASURES STUDY WORKPLAN

I. CORRECTIVE MEASURES STUDY

The purpose of this Corrective Measures Study (CMS) is to develop and evaluate remedial alternative(s) and to recommend the remedy(ies) to be taken. The Permittee may elect either to screen a number of potential remedies prior to evaluating a smaller number of potential remedies or delete the screening step and proceed with evaluation of the expected remedy(ies), including any specified by EPA.

The Corrective Measures Study shall consist of:

A. Screening:

Should the Permittee elect to screen a number of potential remedies, any potential remedy specified in EPA's approval of the RFI Report shall also be screened.

1. The characteristics which shall be used to screen inapplicable remedies or technologies include, but are not limited to:

- a. Site and Media Characteristics

Site and media data shall be reviewed to identify conditions that may limit or promote the use of certain technologies. The use of technologies which are clearly precluded by site or media characteristics shall be eliminated from further consideration. The Permittee shall document the reasons for eliminating any technology;

- b. Waste Characteristics

Potential remedies clearly limited by the waste characteristics should be eliminated from consideration. The Permittee shall document the reasons for eliminating any technology; and

- c. Technology Limitations

During the screening process, the level of technological 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. The Permittee shall document the reasons for eliminating any technology.

2. The Permittee shall select remedy(ies) based on the above screening, together with any remedy(ies) specified by EPA, for further evaluation. Should an EPA-specified potential remedy(ies) prove infeasible based on the above screening, the Permittee may request that the alternative(s) be dropped from further investigation. However, until approved, the request shall not stay the conditions of this permit.

B. Evaluation

The Permittee shall evaluate the selected potential remedy(ies), including any specified by EPA.

The evaluation shall include a description of each potential remedy measure alternative which shall include, but is not limited to: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. Each potential remedy shall be evaluated with respect to the following criteria:

1. Technical

- a. Evaluate the performance, reliability, ease of implementation, and potential impacts of the remedy, including safety impacts, cross media impacts, and control of exposure to any residual contamination;
- b. Assessment of the effectiveness of potential remedies in achieving adequate control of source and cleanup of the hazardous waste (including hazardous constituents) released from solid waste management units;
- c. Assessment of the time required to begin and complete the remedy;
- d. Estimation of the costs of remedy implementation; and
- e. Assessment of institutional requirements, such as state or local permit requirements, or other environmental or public health requirements which may substantially affect implementation of the remedy(ies).

2. Environmental: an evaluation of the facility conditions and pathways of contamination actually addressed by each potential remedy. The evaluation shall include the short-term and long-term beneficial and adverse effects, any adverse effects on environmentally sensitive areas, and an analysis of measures to mitigate such adverse effects.
3. Human health: the potential remedy(ies) shall be evaluated with respect to mitigation of short- and long-term potential exposure to any residual contamination and protection of human health, both during and after implementation.

4. Institutional: the Permittee shall evaluate the effects of federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations, including the requirements for construction and operating permits on the design, operation, and timing of the remedy(ies).

C. Cost Estimate

The Permittee shall develop a cost estimate for the remedy(ies) and for each phase or segment of the remedy(ies) including:

1. Capital costs consisting of direct (construction) and indirect (non-construction and overhead) costs; and
2. Post-construction costs, including operation and maintenance) necessary to ensure continued effectiveness of the alternative(s).

D. Interim Reporting

The Permittee shall submit bi-monthly progress reports containing:

1. A description and estimate of the percentage of the CMS completed;
2. Summaries of all findings;
3. Summaries of all contacts with representatives of the local community, public interest groups, or State government during the reporting period;
4. Summaries of all problems or potential problems encountered during the reporting period;
5. Actions being taken to rectify problems;
6. Changes in personnel during the reporting period; and
7. Projected work for the next reporting period.

E. Final Report

According to the approved schedule, the Permittee shall submit for EPA approval a Corrective Measures Study Report to EPA and the PADER Norristown Regional Office. The report shall include:

1. An updated description of conditions at the facility and the nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The Permittee shall update the information with respect to any response

activities or interim measures which have or are being implemented at the Facility;

2. A recommendation for SWMU, or group of SWMUs [or AOCs], objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, EPA guidance, and the requirements of any applicable federal statutes or regulations;
3. The Permittee shall justify and recommend a remedy(ies) using technical, human health, and environmental criteria. These recommendations shall include summary tables which allow the alternative(s) to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors among the alternatives evaluated shall be highlighted. Information on all evaluated potential remedy(ies) shall be presented; and
4. The Report shall, at a minimum, include:
  - a. A description of the facility, site topographic map(s) and preliminary layouts;
  - b. For the selected remedy(ies) include:
    - (1) Performance expectations, i.e., the selected remedy is expected to achieve the Media Cleanup Standards in the approved RCRA Facility Investigation Report;
    - (2) Preliminary design criteria and rationale;
    - (3) General operation and maintenance requirements;
    - (4) Long-term monitoring requirements;
    - (5) 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; and
    - (6) Cost Estimates and Schedules:

- (a) Capital cost estimate;
  - (b) Operation and maintenance cost estimate;  
and
  - (c) Project schedule (design, construction,  
operation).
5. Upon review of the Corrective Measures Study Report, the Regional Administrator may require the Permittee to evaluate further, and report upon, one or more additional remedies, or develop particular elements of one or more proposed remedies. Such further requirements will, if necessary, be incorporated into this permit via 40 C.F.R. §§ 270.41 or 270.42.