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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
- Please note our new name -
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP
230 Chestnut Street
Meadville, PA 16335
November 22, 1995

Northwest Regional Office (814) 332-6648
Fax (814) 332-6121

Mr. Jeffrey A. Dodd
On-Scene Coordinator
U.S. Environmental Protection Agency
303 Methodist Building
11th & Chapline Streets
Wheeling, WV 26003

RE: Removal Action
Metcoa Radiation Site
Pulaski, Lawrence County, PA

Dear Mr. Dodd:

Thank you for your notification dated October 30, 1995, regarding the Environmental Protection Agency's (EPA's) plans for a removal action at the Metcoa Radiation Site in Pulaski, Lawrence County, Pennsylvania. This letter is in response to your request to identify State Applicable or Relevant and Appropriate Requirements (ARARs) for EPA's removal response objectives, as identified in the first full paragraph on page two of EPA's Engineering Evaluation/Cost Analysis Report dated October 30, 1995.

In general, the ARARs that could apply to the Metcoa Radiation Site are listed and described in the enclosed Guidance entitled "Applicable or Relevant and Appropriate Requirements (ARARs) for Cleanup Response and Remedial Actions in Pennsylvania". However, given the description of removal response activities planned, it would appear that the following ARARs would most definitely apply:

Chemical-Specific

- The Department developed and implemented Cleanup Standards for Contaminated Soils in December 1993. The Cleanup Standards for Contaminated Soils is a To Be Considered (TBC) guidance and establishes cleanup levels which will reduce potential human health direct contact risks, and the potential of a contaminant or compound to migrate to groundwater. For the Metcoa Radiation Site, the Guidance sets forth the following parameters for the contaminants of concern: Cadmium - 20 ppm; Total Chromium - 1000 ppm, Copper - 700 ppm, Nickel - 200 ppm, Selenium - 60 ppm, and Zinc - 1000 ppm.

- The Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. 4, No. 1995-2, 35 P.S. §6026.101 et seq. ("Act 2"), are applicable requirements and apply for all excavated soils.

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Action-Specific

- Any person or persons who use, manufacture, produce, transport, transfer, receive, acquire, possess, or dispose of any radioactive material must comply with 25 Pa. Code Chapters 215, 217, and 219. In addition, 25 Pa. Code Chapter 403 sets forth the Pennsylvania Department of Transportation requirements for transporting radioactive materials.

- Pennsylvania Act 97, the Solid Waste Management Act, and the solid waste requirements promulgated under the Solid Waste Management Act, including 25 Pa. Code, Chapters 260 - 266 and 270 (regarding identification and listing, generation, transportation, storage, treatment and disposal of hazardous waste), Chapter 269 (regarding siting of hazardous waste treatment and disposal facilities), and Chapters 287 - 289, 297, and 299 (regarding generation, management, handling, storage, disposal, impoundment and processing of residual wastes).

- Pennsylvania's Air Pollution Control Act and the requirements governing air quality promulgated under the Air Pollution Control Act, including 25 Pa. Code, Chapter 123 (regarding fugitive emissions), Chapter 127 (regarding use of Best Available Technology (BAT) for control of new sources), Chapter 135 (regarding reporting of sources) and Chapter 139 (regarding sampling and testing).

- The Department's Water Quality Rules and Regulations sets forth requirements for the control of soil erosion and sedimentation resulting from earthmoving activities in 25 Pa. Code Chapter 102. An Erosion and Sedimentation Control Plan should be developed and followed during site removal activities.

Location-Specific

- Subsection G of the Dam Safety and Waterway Management Rules and Regulations (25 Pa. Code Chapter 105; promulgated, in part, under the Pennsylvania Dam Safety and Encroachment Act of 1978), relating to the protection of wetlands in Pennsylvania is applicable. Any removal action encroaching upon wetlands should be managed in accordance with these regulations.

Thank you taking action to abate the risks associated with the Metcoa Radiation Site. If you have any follow-up questions or comments regarding this issue, please feel free to contact me at the number above.

Sincerely,

Robert J. Kimball

Robert J. Kimball
Project Manager
Hazardous Sites Cleanup

Enclosure:

cc: Mr. Kimball (files)
Ms. Dougherty
Mr. Fruehstorfer
Mr. Mattern

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) FOR CLEANUP RESPONSE AND REMEDIAL ACTIONS IN PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WASTE MANAGEMENT
DIVISION OF REMEDIATION

Final

June 1993

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Recycled Paper

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APPENDICES:

Federal and State Statute/Regulation Guide

ARAR Matrices

A. Chemical Specific Matrix
Table 1, Water Quality Criteria for Toxic Substances
Table 2, Pennsylvania Maximum Contaminant Levels - January 1993

B. Location Specific Matrix

C. Action Specific Matrix

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INTRODUCTION

This document contains a list of state standards and requirements for cleanup related activities at waste sites in the Commonwealth of Pennsylvania. The purpose of this document is to identify, in a general fashion, state standards and requirements that will serve as a starting point for the determination of site specific cleanup related criteria.

The development and specific identification of cleanup criteria is a dynamic process. Some standards and requirements can be readily identified (i.e., ambient water quality criteria and promulgated drinking water standards.) Most, however, can only be derived after submittal and review of detailed information regarding site location, system design, and development of contaminant-specific discharge limits.

It should be noted that this document is a comprehensive list of environmental cleanup standards and requirements, however, the document is not inclusive. Additionally, regulatory standards and requirements are subject to change. Therefore, further consultation with and analysis by the appropriate Department and other Commonwealth personnel will be required.

Finally, this document is advisory and does not represent any determination made by the Department of Environmental Resources. This document shall in no way be construed or understood to create any duty or obligation upon the Department of Environmental Resources or the Commonwealth of Pennsylvania.

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DEFINITION OF ARARs

Background

Section 121(d) the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), (as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA)) and the Hazardous Sites Cleanup Act (HSCA or Act 108) Section 504, requires that Fund-financed, enforcement, and Federal facility remedial cleanup actions comply with requirements or standards under Federal and State environmental laws. The requirements that must be complied with are those that are applicable, or relevant and appropriate, to the hazardous substances, pollutants, or contaminants at a site or to the circumstances of the release. Compliance is required at the completion of the remedial action for hazardous substances, pollutants, or contaminants that remain on-site.

Section 504 of the Pennsylvania Hazardous Sites Cleanup Act (HSCA) provides that final remedial action under HSCA shall meet applicable and relevant and appropriate cleanup standards. Furthermore, cleanup standards promulgated under HSCA shall be consistent with State standards permitted under 121 (d) of the federal Superfund Act. HSCA further provides that DER may promulgate, by rulemaking, cleanup standards that are generally applicable to remedial responses to the releases of hazardous substances or contaminants.

Applicable requirements means that those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA or HSCA site. "Applicability" implies that the remedial action or the circumstances at the site satisfy all of the jurisdictional prerequisites of a requirement.

Relevant and appropriate requirements means those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not 'applicable' to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA or HSCA site, address problems or situations sufficiently similar to those encountered, and that their use is well suited to the particular site.

The relevance and appropriateness of a requirement can be judged by comparing a number of factors, including the characteristics of the remedial action, the hazardous substances in question, or the physical circumstances of the site, with those addressed in the requirement. It is also helpful to look at the objective and origin of the requirement. For example, while RCRA regulations may not be applicable to closing undisturbed hazardous waste in place, the RCRA regulation for closure by capping may be deemed relevant and appropriate.

A requirement that is judged to be relevant and appropriate must be complied with to the same degree as if it were applicable. However, there is more discretion in this determination: it is possible for only part of a requirement to be considered relevant and appropriate, the rest being dismissed if judged not to be relevant and appropriate in a given case.

Non-promulgated or non-regulatory documents (health advisories, guidances, proposed regulations) issued by the State or Federal government are not considered potential ARARs and are referred to as "to be considered" requirements or TBCs. TBCs are

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evaluated along with ARARs and are considered appropriate in the absence of a specific ARAR or where ARARs are not sufficiently protective in developing cleanup goals.

Types of ARARs

There are several different types of requirements that Cleanup actions may have to comply with. The classification of ARARs are listed below with specific matrices attached as appendices to this document:

Chemical-specific requirements set legal (background), health or risk-based concentration limits, or ranges in various environmental media for specific hazardous substances, pollutants, or contaminants. Examples: Maximum Contaminant Levels, national Ambient Air Quality Standards.

These requirements may set protective cleanup levels for the chemical of concern in the designated media, or else indicate an acceptable level of discharge (e.g., air emission or wastewater discharge taking into account water quality standards) where one occurs in a remedial activity. If a chemical has more than one such requirement, the more stringent ARAR should be complied with.

In accordance with, among others, Article 1, Section 27 of the Pennsylvania Constitution, Sections 301, 307, 401 and 402 of the Pennsylvania Clean Streams Law, and the Solid Waste Management Act, the legal liability of any responsible party for groundwater contamination is to remediate any contamination to background water quality. Nothing in this document or the accompanying materials should be deemed to constitute any modification to a responsible party's legal liability to restore contaminated waters to background.

Action-specific requirements or design specifications set controls or restrictions on particular kinds of activities related to management of hazardous substances, pollutants, or contaminants. Examples: RCRA regulations for closure of hazardous waste storage or disposal units; RCRA incineration standards; Clean Water Act pretreatment standards for discharges to POTWs.

These requirements are triggered not by the specific chemicals present at a site but rather by the particular remedial activities that are selected to accomplish a remedy. Since there are usually several alternative actions for any remedial site, very different requirements can come into play. These action-specific requirements may specify particular performance levels, actions, or technologies, as well as specific levels (or a methodology for setting specific levels) for discharged or residual chemicals.

Location specific requirements set restrictions on activities depending on the characteristics of a site. Examples: Federal and State siting laws for hazardous waste facilities; sites on National Register of Historic Places.

These requirements function like action-specific requirements. Alternative remedial actions may be restricted or precluded depending on the location or characteristics of the site and the requirements that apply to it.

Specific Standards, Special Standard, and Modifications

A. Chemical, Location and Action Specific Matrices - The Specific Matrices attached to this document and referenced above represent identifications of ARARs at the time this document was prepared. This information shall not be construed as

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establishing a complete or final list of Pennsylvania ARARs. In addition to the numbers or description of ARARs contained in the Matrices, other ARARs may exist which are derived from Pennsylvania statutes and regulations which may not be identifiable except in the context of a specific case. The Department reserves the right to identify additional ARARs at any time.

B. Special Standards - Section 504 of HSCA allows the Department to establish additional standards, without rulemaking, on a case-by-case basis where any of the following apply:

1. The circumstances at the site are such that the applicable general standards, as applied, would not provide the degree of protection to public health or the environment intended by the general standards.

2. The degree of additional environmental protection provided by the special standard is significant in relation to the cost of implementing it.

C. Modification of ARARs - The Department may modify an ARAR if any of the following apply:

1. Compliance with a requirement at a site will result in greater risk to the public health and safety of the environment than alternative options.

2. Compliance with a requirement at a site is technically infeasible from an engineering perspective.

3. The remedial actions selected will attain a standard of performance that is equivalent to that required under the otherwise applicable requirement through use of another method or approach.

4. The remedial action selected will not provide for cost-effective response.

D. Fund Money Modification - The Department may modify an ARAR where the site is being remediated through the use of fund money where the Department determines that such a modification is in the public interest.

E. Effect of modification under C and D - Where the Department allows a modification to any ARAR, such modification shall not be construed to constitute a modification of any responsible person's legal liability unless a waiver of liability is expressly stated in writing by the Department. Such a modification shall therefore only constitute an authorization by the Department to proceed with a cleanup plan in accordance with the modification and such conditions as the Department may proscribe.

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DER's Bureau of Waste Management

A. Statutory Authority:

The Department's major source of standards and requirements governing waste sites are found under the Solid Waste Management Act 97 (35 P.S. §§6018.101 - 6018.1003).

The Hazardous Sites Cleanup Act 108 (35 P.S. §6020.101). Removal and remediation program independent from the Federal Superfund program. Provides means for funding, enforcement, cleanup standards and hazardous waste facilities siting.

B. Regulations:

Numerous requirements are promulgated under the Solid Waste Management Act; these regulations are found in the Pennsylvania Bulletin, and are also codified in Title 25 of the Pennsylvania Code. Relevant chapters are as follows:

1. Article VII, Chapters 260-270, Hazardous Waste Management Regulations

   (a) 25 Pa. Code, Chapters 260-266 and 270) - applies to the identification and listing, generation, transportation, storage, treatment and disposal of hazardous waste; contains the requirements under the federal Resource, Conservation and Recovery Act for a state to implement a federally-approved hazardous waste program.

   (b) Chapter 267 (25 Pa. Code §§267.1 - 267.62) - sets forth the minimum requirements for demonstrating sufficient financial responsibility to operate a hazardous waste storage, treatment or disposal facility by providing bond guarantees for the operation, closure, and post-closure requirements of a hazardous waste storage, treatment or disposal facility, and by providing insurance protection for personal injury and property damage arising out of operation of a hazardous waste storage, treatment or disposal facility.

   (c) Chapter 269 (25 Pa. Code §§269.1 - 269.50) - sets forth requirements that apply to siting of hazardous waste treatment and disposal facilities; divides the criteria for siting hazardous waste treatment and disposal facilities into two phases (Phase I exclusionary criteria which prohibit the siting of a new hazardous waste treatment or disposal facility in an excluded area delineated under these criteria, and Phase II criteria which identify environmental, social, and economic factors which may effect the suitability of a location for a proposed facility and apply to new hazardous waste treatment or disposal facilities and modifications to existing facilities).

2. Municipal Waste Regulations

   (a) Chapter 271 (25 Pa. Code §§271.1 - 271.744)

   Chapter 271 sets forth provisions that are generally applicable to all municipal waste management activities, including definitions for all chapters (Subchapter A), general requirements for permits and permit

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applications (Subchapter B), permit review procedures and standards (Subchapter C), bonding and insurance requirements (Subchapter D), civil penalties and enforcement (Subchapter E), requirements for demonstration facilities (Subchapter F), residual waste as it applies to municipal facilities (Subchapter G), general permit requirements for infectious and chemotherapeutic waste (subchapter H). This chapter applies in conjunction with later chapters that are specifically applicable to particular types of facilities.

(b) Chapter 272 (25 Pa. Code §§272.1 - 272.543

This chapter sets forth provisions for municipal planning, recycling and waste reduction. General provisions (Subchapter A), duties and responsibilities of host municipalities and counties under Act 101 (Subchapter B), county plans and revisions requiring municipal waste planning (Subchapter C), provisions for Act 101 grants (Subchapter D), provisions for the operation of the municipal recycling program (Subchapter E), and provisions for the establishment and operation of household hazardous waste collection (Subchapter F).

(c) Chapter 273 (25 Pa. Code §§273.1 - 273.521).

This chapter sets forth the Department's application and operating requirements for municipal waste landfills. This chapter is divided in five major parts: Subchapter A (relating to general requirements), Subchapter B (relating to application requirements), Subchapter C (relating to operating requirements), Subchapter D (relating to additional application requirements for special handling and residual waste) and Subchapter E (relating to additional operating requirements for special handling and residual waste). This chapter is generally applicable to all operations at a municipal waste landfill, not merely the specific disposal area.

(d) Chapter 275 (25 Pa. Code §§275.1 - 275.614)

Chapter 275 sets forth the Department's regulations concerning land application of sewage sludge. Subchapter B sets out general application requirements for the three recognized methods of land application of sewage sludge, which are agricultural utilization, land reclamation, and land disposal. Subchapter C sets forth general operating requirements for all three methods of land application of sewage sludge. Subchapter D sets forth additional application and operating requirements for the agricultural utilization of sewage sludge. Additional application and operating requirements for the land disposal of sewage sludge are set forth in Subchapter F. Finally, Subchapter G sets forth the Department's requirements for the sewage sludge distribution program.

(e) Chapter 277 (25 Pa. Code §§277.1 - 277.312)

Chapter 277 sets forth application and operating requirements for construction and demolition waste landfills. Construction/demolition waste is solid waste resulting from the construction or demolition of buildings and other structures, including but not limited to wood,

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plaster, metals, asphaltic substances, bricks, block and unsegregated concrete. The term also includes dredging wastes. Subchapter B sets out application requirements, and Subchapter C sets out operating requirements.

(f) Chapter 279 (25 Pa. Code §§279.1 - 279.272)

Chapter 279 sets forth application and operating requirements for transfer facilities. Subchapter B sets forth application requirements for transfer stations, and Subchapter C sets forth operating requirements for transfer facilities.

(g) Chapter 281 (25 Pa. §§Code 281.1 - 281.282)

Chapter 281 contains permitting requirements for composting facilities.

(h) Chapter 283 (25 Pa. §§Code 283.1 - 283.434)

Chapter 283 concerns resource recovery and other processing facilities. This chapter is applicable to a number of municipal waste processing facilities, including resource recovery facilities, that are not transfer stations or composting facilities. Subchapter B sets forth application requirements stating what an applicant must submit to the Department in order to obtain a permit. Subchapter C sets forth operating requirements for persons or municipalities that operate such facilities. Subchapter D sets forth additional application requirements for special handling wastes. Subchapter E sets forth additional operating requirements for special handling wastes.

(i) Chapter 285 (25 Pa. Code §§285.1 - 285.222)

Chapter 285 sets forth standards for storage, collection and transportation of municipal wastes. Subchapter A sets forth standards for storage of municipal waste. Subchapter B sets forth standards for collection and transportation of municipal wastes. Subchapter C provides for transporter Licensing for infectious and chemotherapeutic waste. Subchapter D provides for the manifesting of infectious and chemotherapeutic waste.

3. Residual Waste Regulations

(a) Chapter 287 (25 Pa. Code §§287.1 - 287.666)
This chapter specifies general procedures, definitions and rules for the generation, management and handling of residual waste.

(b) Chapter 288 (25 Pa. Code §§288.1 - 288.625)
This chapter sets forth application and operating requirements for Class I, II and III residual waste landfills.

(c) Chapter 289 (25 Pa. Code§§289.1 - 289.557)
This chapter sets forth application and operating requirements for Class I and II residual waste disposal impoundments.

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(d) Chapter 291 (25 Pa. Code §§291.1 - 291.258)
This chapter provides for the application and operation requirements for residual waste by land application.

(e) Chapter 293 (25 Pa. Code §§293.1 - 293.262)
This chapter sets forth application and operating requirements for residual waste transfer facilities.

(f) Chapter 295 (25 Pa. Code §§295.1 - 295.282)
This chapter provides for the application and operation of residual waste composting facilities.

(g) Chapter 297 (25 Pa. Code §§297.1 - 297.272)
This chapter sets forth application and operation requirements for residual waste processing facilities other than transfer or composting facilities.

(h) Chapter 299 (25 Pa. Code §§299.101 - 299.232)
This chapter provides standards for the storage of residual waste (subchapter A), and standards for collecting and transporting of residual waste (Subchapter B).

C. Guidance Documents:

1. Guidance Manual for Groundwater Monitoring, July 1985.

2. Guidance Manual for Landfill Gas Management.

3. Guidelines for Benthic Macroinvertebrate Stream Surveys for Landfills, June 1988.

4. Management Policy for Ash Residue from Municipal Waste Incineration Resource Recovery Facilities.

5. Application for Storage, Treatment, Disposal of Hazardous Waste - Module #1.

6. Ground Water Quality Protection Strategy. February, 1992.

7. Policy and Procedure for the Disposal of Fuel Contaminated Soils. May 1990.

8. ARARs Determination. DER Office of Chief Counsel correspondence to EPA regarding groundwater and soil remediation levels. June 15, 1990 and July 2, 1990.

Additional guidance and policy available by contacting the Bureau of Waste Management Regional or Central Office personnel.

DER's Bureau of Water Quality Management

A. Statutory Authority:

1. The Department's major source of standards and requirements governing water quality are found under the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. §§691.1 et. seq.

2. Additional requirements specific to community and individual sewage treatment and disposal systems are found under the Sewage Facilities Act (537), Act of January 24, 1966, P.L. 1535, as amended, 35 P.S. §§750.9 et seq.

3. Storage Tank and Spill Prevention Act, Act of July 6, 1989, 35 P.S. §§6021.101-6021.2105.

B. Regulations:

Numerous requirements are promulgated under the Clean Streams Law, the Sewage Facilities Act and the Administrative Code; refer to the Pa. Bulletin and Title 25 of the Pa. Code. Relevant chapters are as follows:

1. Chapter 71 (25 Pa. Code §§71.1 et seq.) - This chapter sets forth regulations requiring Planning Requirements for Sewage Facilities, administration of permits for individual and community sewage systems, and the powers and duties of the Certification Board.

2. Chapter 72 (25 Pa. Code §§72.1 et. seq.) - This chapter sets forth regulations governing the issuance of permits by local agencies for retaining tanks, and individual and community on-lot sewage systems which handle less than 10,000 gallons per day and utilize subsurface absorption areas for effluent renovation.

3. Chapter 73 (25 Pa. Code §§73.1 et. seq.) - This chapter sets forth regulations pertaining to site and soil suitability for on-lot sewage disposal, the size and type of treatment tanks, treatment tank effluent dosing and distribution requirements, absorption area requirements, retaining tank standards, and experimental and alternate systems.

4. Chapter 91 (25 Pa. Code §§91.1 et. seq.) - This chapter sets forth general provisions for administration and enforcement of Pennsylvania's water pollution control program, and establishes specific application requirements and conditions for the approval and permitting of the construction and operation of waste treatment projects.

5. Chapter 92 (25 Pa. Code §§92.1 et. seq.) - This chapter sets forth provisions for the administration of the National Pollutant Discharge Elimination System (NPDES) Program within Pennsylvania, and establishes criteria for the content of NPDES permit applications, effluent standards, monitoring requirements, standard permit conditions, public notification procedures, and other requirements related to the NPDES Program.

6. Chapter 93 (25 Pa. Code §§93.1 et. seq.) - This chapter sets forth general and specific standards for the quality of Pennsylvania's waters and includes specific water quality criteria and designated water use protection for each

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stream in Pennsylvania. It is reviewed and updated, as necessary, at least once every three years. Section 93.8a establishes Chapter 16 regarding the toxics management strategy and statement of policy.

7. Chapter 94 (25 Pa. Code §§94.1 et. seq.) - This chapter sets forth provisions for municipalities to address pretreatment and other management requirements for wastewaters discharged into municipal sewage collection and treatment systems.

8. Chapter 95 (25 Pa. Code §§95.1 et. seq.) - This chapter sets forth waste treatment requirements for all dischargers including general requirements for "High Quality Waters" and "Exceptional Value Waters" and procedures for dealing with special circumstances, such as developing wasteload allocations, discharges to acid impregnated streams and discharges to lakes, ponds, and impoundments.

9. Chapter 97 (25 Pa. Code §§97.1 et. seq.) - This chapter sets forth specific provisions concerning the discharge of industrial wastes to Pennsylvania waters.

10. Chapter 101 (25 Pa. Code §§101.1 et. seq.) - This chapter sets forth special provisions for incidences which would endanger downstream users of Pennsylvania waters, and specifies actions to be taken when such emergency incidences occur.

11. Chapter 102 (25 Pa. Code §§102.1 et. seq.) - This chapter sets forth requirements for the control of soil erosion and sedimentation resulting in earthmoving activities.

    Note: The administration of Chapter 102, in most cases, has been delegated to County Conservation Districts working in cooperation with the DER's Bureau of Land and Water Conservation.

Storage Tank and Spill Prevention Regulations for Corrective Action are under development. Other promulgated standards are as follows:

1. Chapter 245 (25 Pa. Code §§245.1-245.141 et. seq) - This chapter provides for the certification program for installers and inspectors of aboveground and underground storage tanks.

C. Guidances and Strategies:

1. 25 Pa. Chapter 16, Statement of Policy.

2. Industrial Waste Manual.

3. Sewerage Manual.

4. Spray Irrigation Manual.

5. Strategy for Making Water Quality Management Plan Amend./Consistency.

6. Toxics Management Strategy.

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7. Technical Guidance for NPDES Permitting of Landfill Leachate Discharges.

8. Wastewater Treatment Technology Assessment for Municipal Waste Landfills.

9. Staff Guidance For Underground Storage Systems in Pennsylvania.

10. Implementation Procedure for Protection of High Quality and Exceptional Value Waters.

11. Ground Water Quality Protection Strategy. February 1992.

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DER's Bureau of Water Supply and Community Health

A. Statutory Authority:

Pennsylvania Safe Drinking Water Act, Act of May 1, 1984, P.L. 206, 35 P.S. §§721.1 et. seq.

B. Regulations:

Regulations promulgated under the Safe Drinking Water Act; refer to the Pa. Bulletin and Title 25 of the Pennsylvania Code:

Chapter 109 (25 Pa. Code §§109 et. seq.) - This chapter sets forth drinking water quality standards at least as stringent as federal standards: maximum contaminant levels (MCLs), and additional state requirements: secondary maximum contaminant levels (SMCLs) for public water systems including permit design and construction, source quality and siting requirements. Chapter 109 also sets requirements for bottled water retail facilities.

C. Guidance Documents:

The guidance for limiting unregulated contaminants in public water supplies is referenced in Chapter 109.203 and in the following:

1. Unregulated Contaminants Guidance and Health Effects Information Document.

   Public water systems shall supply finished water that complies with the maximum unregulated contaminant concentrations (MUCC) determined as follows:

   (a) The MUCC will be the concentration at which EPA has proposed to set or is considering setting a primary MCL for the contaminant; or

   (b) If EPA has not established a concentration as set forth in (a) above, the MUCC will be the concentration associated with a lifetime cancer risk of 10^{-6} for carcinogenic contaminants or the concentration equal to the lifetime health advisory concentration for non-carcinogenic contaminants, provided that this concentration is equal to or greater than the practical quantitation level and achievable through the use of available treatment technology; or

   (c) If the concentration specified in (b) above is not equal to or greater than the practical quantitation level or is not achievable through the use of available treatment technology, the MUCC will be set at the lowest concentration these limiting factors will allow.

2. DER Public Water Supply Manual

   In an effort to develop, maintain and attain the above drinking water quality requirements, the Bureau has developed a Public Water Supply Manual. The Manual contains siting, treatment design and construction standards which the Department finds to be acceptable.

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DER's Bureau of Air Quality Control

A. Statutory Authority:

The Department's major source of standards and requirements governing air quality are found under the Air Pollution Control Act, Act of January 8, 1960, P.L. 2119, 35 P.S. §§4001, et. seq.

B. Regulations:

Numerous requirements are promulgated under the Air Pollution Control Act; refer to the Pa. Bulletin and Title 25 of the Pennsylvania Code. Relevant chapters are as follows:

1. Chapter 123 (25 Pa. Code §§123.1 et. seq.) - This chapter on "Standards for Contaminants" sets forth requirements for fugitive emissions, including open burning and demolition activities; specific limitations for particulate matter sulfur dioxide, odor, and visible emissions.

2. Chapter 127 (25 Pa. Code §§127.1 et. seq.) - This chapter on "Construction, Modification, Reactivation and Operation of Sources" requires the use of Best Available Technology (BAT) for control of new sources, plan approval and operating permit requirements, and special requirements for sources in nonattainment areas.

   25 Pa. Code §§127.12(a)(5) requires that new air contaminant sources reduce emissions to the minimum attainable level through the use of best available technology (BAT). Applicants are responsible for demonstrating that BAT will be utilized on the sources in its plan approval application. BAT is defined in 25 Pa. Code 121.1, In order to determine that a plan approval application has demonstrated that the source will control emissions of air contaminants to the appropriate level, the Department needs to review each plan approval application on a case-by-case basis. Source-specific factors can impact on what devices, methods or techniques are needed to control emissions. The Department bases its case-by-case determinations of BAT on the engineering judgment of the plan approval application reviewers. The Department needs to review each plan approval application to apply the BAT requirement. If plan approvals (construction permits) will not be required, the Department will need to evaluate plan approval type technical information regarding the source to make a BAT determination.

3. Chapter 129 (25 Pa. Code §§129.1 et. seq.) - This chapter on "Standards for Sources" governs for open burning and specific industrial sources.

4. Chapter 131 (25 Pa. Code §§131.1 et. seq.) - This chapter on "Ambient Air Quality Standards" adopts Federal ambient air quality standards plus sets forth additional State standards for settled particulate, beryllium, sulfates, fluorides, and hydrogen sulfide.

5. Chapter 135 (25 Pa. Code §§135.1 et. seq.) - This chapter on "Reporting of Sources" requires the submission of data necessary for the identification and quantification of potential and actual air contaminant emissions.

6. Chapter 137 (25 Pa. Code §§137.1 et. seq.) - This chapter on "Air Pollution Episodes" sets forth requirements for standby plans and the implementation of emission reduction procedures to prevent the excessive buildup of air pollutants during air pollution episodes.

7. Chapter 139 (25 Pa. Code §§139.1 et. seq.) - This chapter on "Sampling and Testing" sets forth requirements for sampling of facilities, sampling methods and analytical procedures.

8. Chapter 141 (25 Pa. Code §§139.1 et. seq.) - This chapter on "Variances and Alternative Standards" establishes that the Department may impose more stringent standards than set forth in other Bureau of Air Quality regulations where 1) the standard is related to achieving ambient air quality standards, 2) the standard can be achieved through BAT, or 3) the standard is necessary to protect the public health, safety or welfare.

C. Guidance Documents:

1. "Hazardous Waste and Petroleum Products Contamination Cleanup Projects" requires plan approval and BAT for air strippers and other equipment designed to remove volatile contaminants from soil, water, and other materials.

2. "BAT criteria for Municipal Incinerators."

3. "BAT criteria for Hospital/Infectious Waste Incinerators."

4. "Interim Operating Guidance for Air Toxic Substances", provides a consistent procedure for permitting new and modified sources that emit air toxic substances. The guidance specifies how to evaluate sources, based mainly on the chronic (annual) low level exposure air quality guidelines for approximately 99 compounds. It also requires an acute (weekly) exposure assessment for formaldehyde and nickel compounds. This guidance is intended to provide a framework to assess the potential for public health hazards from the emissions of air toxic substances. The guidance provides criteria for the acceptance/rejection of plan approval applications for air contaminant sources. The requirements are both site and source specific, being established on a case by case basis.

5. "Air Quality Permitting Criteria for Remediation Projects Involving Air Strippers and Soil Decontamination Units." Provides a permit exemption policy for remediation projects involving the Bureau of Air Quality Control.

6. "Air Quality Permitting Criteria Including Best Available Technology Criteria for Municipal Waste Landfills." This document specifies plan approval requirements and guidelines to satisfy BAT requirements as established by 127.12(a)(5) for municipal waste landfills.

7. "Multi-pathway Risk Assessment Guidelines." This document specifies risk assessment methodology for the burning of hazardous waste. These guidelines are applicable to commercial hazardous waste incinerators, boilers, and industrial furnaces subject to 40 CFR Parts 260-271 and DER's Chapter 126 and 264.

AR100254

DER's Bureau of Land and Water Conservation

A. Statutory Authority:

The Clean Streams Law, the Act of June 22, 1937, as amended, P.L. 1987, 35 P.S. 691.1 et. seq.

B. Regulations:

Requirements promulgated under the Clean Streams Law; see the Pa. Bulletin and Title 25 of the Pennsylvania Code:

1. Chapter 102 (25 Pa. Code §§102.1 et. seq.) - Erosion Control. This chapter sets forth provisions that impose requirements on earth moving activities which create accelerated erosion or danger of accelerated erosion and which require planning and implementation of effective soil conservation measures. The Bureau administers the program for the control of erosion and sedimentation in cooperation with County Conservation Districts.

Regulations promulgated under the Storm Water Management Act; see the Pa. Bulletin and Title 25 of the Pa. Code:

1. Chapter 111 (25 Pa. Code §§111.1 et. seq.) - This chapter sets forth provisions governing the awards of grants to counties and municipalities for preparing and implementing storm water management plans.

C. Guidance Documents:

Erosion and Sediment Pollution Control Program Manual (1990)

Erosion and Sedimentation Control Plan Development Checklist

AR100255

DER's Bureau of Dams, Waterways and Wetlands

A. Statutory Authority:

1. The Flood Plain Management Act, Act of October 4, 1978, P.L. 851, No. 166, 32 P.S. §§679.101 et. seq.

2. The Dam Safety and Encroachments Act, Act of 1978, P.L. 1375, as amended, 32 P.S. §§693.1 et. seq.

3. The Storm Water Management Act, Act of October 4, 1978, P.L. 864, No. 167, as amended, 32 P.S. §§680.1 - 680.17.

4. The Clean Streams Law of Pennsylvania, Act of June 22, 1937, P.L. 1987, 35 P.S. §§691.1 et. seq.

B. Regulations:

1. Regulations promulgated under the Dam Safety and Encroachments Act; see the Pa. Bulletin and Title 25 of the Pennsylvania Code:

   Chapter 105 (25 Pa. Code §§105.1 et. seq.) - This chapter sets forth provisions for the regulation and supervision of dams, reservoirs, water obstructions and encroachments in waters of the Commonwealth including wetlands. Central Office, Bureau of Dams, Waterways and Wetlands, Division of Dam Safety, processes dam permits and evaluates the environmental assessments for out-of-scope dams. The Regional Offices of Water Management, Soils and Waterways Section are responsible for enforcement activities, processing permit applications for water obstructions and encroachments, and for inspecting dams.

2. Regulations promulgated under the Flood Plain Management Act; see the Pa. Bulletin and Title 25 of the Pa. Code:

   Chapter 106 (25 Pa. Code §§106.1 et. seq.) - This chapter sets forth provisions for the regulation of obstructions and highway obstructions constructed, owned or maintained by a political subdivision of the Commonwealth, or a public utility, and located in the 100 year floodplain as delineated by FEMA Flood Hazard Boundary Maps.

C. Guidance Documents:

1. An outline of Pennsylvania Wetlands Protection Program: Regulations, Policy and Ecological Considerations.

2. Overview of Changes to Chapter 105, December 1991.

3. Guidelines for Small Projects, September 1992. Small projects are those water obstructions or encroachments with insignificant impact as defined in Chapter 105, excluding wetlands.

4. Abridged National List of Plant Species that Occur in Wetlands.

AR100256

DER's Bureau of Radiation Protection

A. Statutory Authority:

The Radiation Protection Act, Act of July 10, 1984, P.L. 688, 35 P.S. §§7110.101 et. seq.

B. Regulations:

Several regulations promulgated under the authority of the Atomic Energy Development and Radiation Control Act; see the Pa. Bulletin and Title 25 of the Pennsylvania Code.

1. Chapter 215 (25 Pa. Code §§215.1 et. seq.) - This chapter sets forth general provisions for all persons who use, manufacture, produce, transport, transfer, receive, acquire, possess or dispose of any radiation source.

2. Chapter 217 (25 Pa. Code §§217.1 et. seq.) - This chapter sets forth provisions for application and licensing requirements for persons who manufacture, produce, transport, transfer, receive, acquire, possess or dispose of any radioactive material.

3. Chapter 219 (25 Pa. Code §§219.1 et. seq.) - This chapter sets forth provisions for individual exposure limits, emission standards, and safety requirements.

C. Additional Requirements:

1. Chapter 403 - This chapter sets forth the Pennsylvania Department of Transportation requirements for transporting radioactive materials.

2. The Nuclear Regulatory Commission should be notified if high level wastes are involved.

AR100257

DER's Bureau of Topographic and Geologic Survey

A. Statutory Authority:

The Water Well Drillers License Act, Act of May 29, 1956, P.L. 1840, 32 P.S. §645.1 et. seq.

B. Regulations:

Requirements promulgated under the Water Well Driller License Act; see the Pa. Bulletin and Title 25 of the Pennsylvania Code:

Chapter 107 (25 Pa. Code §§107.1 et. seq.) - This chapter sets forth requirements for the licensing of water well drillers, prevention of pollution of underground waters, submittal of well construction records and well abandonment notification.

AR100258

DER's Bureau of Oil and Gas Management

A. Statutory Authority:

1. The Oil and Gas Act of 1984, Act of December 19, 1984, P.L. 1140, as amended, 58 P.S. SS 601.101 et. seq. The Oil and Gas Act is the fundamental law governing activities for the oil and gas industry. It sets forth permitting, drilling, operating, casing, plugging, reporting, financial responsibility, gas storage, well location restrictions, and other requirements.

2. The Coal and Gas Coordination Act, Act of December 18, 1984, P.L. 1069, 58 P.S. SS501 et. seq. The Coal and Gas Coordination Act coordinates the activities of coal mines and gas wells dealing with non-conservation wells that penetrate a working coal seam.

3. The Oil and Gas Conservation Law of 1961, Act of July 25, 1961, P.L. 825, 58 P.S. SS401 et. seq.

4. The Clean Streams Law (35 P.S. SS641.1-691.1001).

5. The Solid Waste Management Act (35 P.S. SS6018.101-6018.1003).

6. Article XIX-A of The Administrative Code of 1929 (71 P.S. SS510.1-510.108).

B. Regulations:

1. Chapter 78 (25 PA Code SS78.1 et. seq.) - This chapter regulates the drilling and production of oil and gas wells. Included in this chapter are regulations concerning environmental protection and well drillings, operations and plugging.

2. Chapter 79 (25 Pa. Code SS79.1 et. seq.) - This chapter regulates conservation wells, those wells which penetrate the Onondaga or deeper horizon, or are drilled to greater than 3,800 ft.

C. Guidance Documents:

DER "Oil and Gas Operators Manual"

Note: The sections of these acts, regulations and guidelines which are most likely to be used as ARARs in a cleanup response action are the requirements for plugging of oil and gas wells, as follows:

(a) 58 P.S. SS601.210 - Plugging requirements; and 610.211 - Alternative methods

(b) 25 Pa. Code SS78.91-.98 - Well Plugging

(c) 25 Pa. Code Chapter 78, Subchapter C, "Environmental Protection Performance Standards."

AR100259

DER's Bureau of Mining and Reclamation

A. Statutory Authority:

1. The Surface Mining Conservation and Reclamation Act, Act of May 31, 1945, P.L. 1198, as amended, 52 P.S. §§1396.1 et. seq.

2. The Coal Refuse Disposal Control Act, Act of September 28, 1968, P.L. 1080, as amended, 52 P.S. §§30.51 et. seq.

3. The Bituminous Mine Subsidence and Land Conservation Act, Act of April 22, 1966, P.L. 30-1, as amended, 52 P.S. §§1406.1 et. seq.

4. The Administrative Code, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. §§510 et. seq.

5. The Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. §§691.1 et. seq.

6. Noncoal Surface Mining Conservation and Reclamation Act, Act of December 19th, 1984, P.L. 1093, 52 P.S. §§3301 et. seq.

B. Regulations:

Numerous regulations promulgated under the above statutes; see the Pa. Bulletin and Title 25 of the Pennsylvania Code:

1. Chapter 77 (25 Pa. Code §§77.1 et. seq.) - This chapter sets forth procedures and regulations for non-coal mining activities and establishes informational requirements for permit applicants, siting criteria, and operational standards.

2. Chapter 86 (25 Pa. Code §§86.1 et. seq.) - This chapter sets forth general permit application requirements for all coal mining activities, permit procedures and siting criteria.

3. Chapter 87 (25 Pa. Code §§87.1 et. seq.) - This chapter sets forth informational requirements to support permit applications for bituminous surface mining operations and establishes land reclamation and environmental protection standards, including requirements for the preservation of hydrologic balances.

4. Chapter 88 (25 Pa. Code §§88.1 et. seq.) - This chapter sets forth requirements governing anthracite surface and deep mining activities. Chapter 88 establishes mine siting criteria and environmental protection performance standards, including requirements for the preservation of a hydrologic balance, proper closure of mines, and subsidence control.

5. Chapter 89 (25 Pa. Code §§89.1 et. seq.) - This chapter governs bituminous deep mining activities. Chapter 89 establishes mine siting criteria and environmental protection performance standards, including requirements for the preservation of a hydrologic balance, proper closure of mines, and subsidence control.

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6. Chapter 90 (25 Pa. Code §§90.1 et. seq.) - This chapter sets forth requirements regarding coal refuse disposal in surface and deep mines, including provisions for application requirements and environmental performance standards.

C. Guidance Documents:

1. Bureau of Mining and Reclamation Program Guidance Manual.

2. Program Guidance Manual for Surface Bituminous Coal Mining.

AR100261

DER's Bureau of Abandoned Mine Reclamation

No regulations. This Bureau should be notified of Superfund site work in abandoned mine areas.

AR100262

Other Potential Applicable or Relevant and Appropriate Requirements

Pennsylvania Scenic Rivers Act, Act of Dec. 5, 1972, P.L. 1277, as amended, 32 P.S. §§820.21 et. seq.

Historic Preservation Act of Nov. 22, 1978, P.L. 1160, as amended, 71 P.S. §§1047.1 et. seq.,

Department of Environmental Resources: Policies and Procedures for the Implementation of the History Code (37 Pa. C.S.A., Section 101 et. seq.). January 1, 1993. Also: Procedures for DER Permittees and for DER Projects.

The Fish and Boat Code, Act of Oct. 16, 1980, P.L. 996, as amended, 30 Pa. C.S. §§101 et. seq.

The Game and Wildlife Code, Act of July 8, 1986, P.L. 1225, 34 Pa. C.S. §§101 et. seq.

The Soil Conservation Law, Act of May 15, 1945, P.L. 547, as amended, 3 P.S. 849.

Pennsylvania Dept. of Transportation, Act of June 1, 1945 (P.L. 1242, No. 428) (36 P.S. §§670-411, 670-420, 670-421 and 670-702).

Pennsylvania State Police, Title 37, Part I, Chapters 11 and 13. Flammable and Combustible Liquids.

FEDERAL AND STATE STAT E/REGULATION GUIDE

Program	Federal		State		Roles of Federal and State Governments
	Statute	Regulation	Statute	Regulation	
/ater Pollution	33 U S C §1251	40 C F R Parts 100-149 and 400 471	35 P.S. §691.1 et seq. 35 P.S. §751.1 et seq.	25 PA Code, Chapter(s) 92 Chapter(s) 71, 73 Chapter(s) 94, 95	Federal Government's role in water pollution is almost exclusively oversight when NPDES permits have been delegated to a state as they have in PA. PA administers permit program for direct discharges and in conjunction with local government to administer the septic tank program.
ir Pollution	42 U S C §7401 et seq	40 C F R Parts 50-87	35 P.S. §4001 et seq.	25 PA Code, Chapter(s) 127,143 Chapter(s) 122, 124	Federal Government adopts National Ambient Standards, certain New Source Standards, and certain Hazardous Waste Standards and acts in major oversight role of State activities. PA develops state implementation plan to meet federal ambient standards and issues permits for point sources. Federal government retains some enforcement authority but major authority exercised by State.
lining	30 U S C §1201 et seq.	30 C F R Parts 761 955	52 P.S. §1396 et seq. 52 P.S. §1406.1 et seq.	25 PA Code, Chapter(S) 86-90	State has been delegated authority to implement mining law with the Department of Interior playing oversight role.
/aste Management Hazardous, Residual Municipal Waste xcept Superfund)	42 U S C §6901 et seq 15 U S C §2601 et seq	40 C F R Parts 240-280 40 C F R Parts 702-799	35 P.S. §6018.101 et seq	25 PA Code, Chapters 260-270 Chapters 287-299 Chapters 271-285	State implements RCRA after federal delegation. Pennsylvania has been delegated most but not all of federal RCRA. State implements independent program for municipal and residual waste.
rinking Water	42 U.S.C. §300f-300j	40 C.F.R. Parts 141-147	35 P.S. §721.1 et seq.	25 PA Code, Chapter(s) 109	State implements program after federal delegation. Federal role in Pennsylvania is largely oversight.
uperfund/Hazardous ites Cleanup Act	42 U.S.C. §9601 et seq.	40 C.F.R. Parts 300, 306	35 P.S. §6020.101 et seq.	Regulations in development	Federal superfund implemented by federal government. State plays supporting role. State statute created an independent state program, (Hazardous Sites Cleanup Act).
/etlands Protection	33 U S C §404 33 U S C §401	33 C F R Parts 300, 306	35 P.S. §693.1 et seq.	25 PA Code, Chapter(s) 105	Both state and federal permits are required to fill wetlands.
eneral Environmental npact Analysis	42 U S C §4321		PA Const. Art 1, §27	Self executing	Federal government is required under NEPA to develop environmental impact statement for federal actions. Constitution requires that state and local government comply with environmental provision of constitution.
lood Plain lanagement	42 U S C §4001	44 C F R Part 60	32 P.S. §679.101 et seq.	25 PA Code, Chapter(s) 106 16 PA Code, Chapter(s) 38	State law requires that municipalities pass regulations that comply with federal law.
am Safety & ncroachment	33 U S C §404	33 C F R Part 320, 330	32 P.S. §693.1 et seq.	25 PA Code, Chapter(s) 105	Army Corps of Engineers issues "404" permits in wetlands. Pennsylvania independent authority.
il & Gas Management	--	--	58 P.S. §601.101 et seq. 58 P.S. §501, et seq. 58 P.S. §471, et seq.	25 PA Code, Chapter(s) 78, 79	No express federal program except to the extent groundwater regulated under other federal statutes.
tormwater	33 U S C §402	40 C F R §122 21	32 P.S. §680.1 et seq.	25 PA Code, Chapter(s) 111, 102 and 92	Federal program implemented by the state in conjunction with the NPDES permits. State law requires municipalities to prepare stormwater management plans.

AR 100264

Appendix A

Water Quality Criteria for Toxic Substances

Table 1 lists the human health and aquatic life criteria for toxic substances which the Department will use in development of effluent limits in NPDES permits. The human health criteria are further defined as to the specific effect (that is, carcinogenicity, taste and odor, general health). For those aquatic life criteria which are hardness related and specified as a formula, such as several of the heavy metals, criteria for hardness values of 50, 100 and 200 are provided as examples. The Department will use the specific hardness of the receiving stream in calculating criteria on a case-by-case basis for these substances. The parameters are grouped according to chemical/analytical properties and denoted alphanumerically: M = Metals; A = Acid Soluble; V = Volatile; B = Base Neutral; and P = Pesticide. Some of these criteria may be superseded for Drainage Lists W (Ohio River Basin) and X (Lake Erie Basin) under interstate and international compact agreements with Ohio River Valley Sanitation Commission and International Joint Commission, respectively. See Section 93.9 (relating to designated water uses and water quality criteria) for specific parameters and criteria.

Acronyms and Footnotes to Table 1

H	=	Threshold effect human health criterion.
CRL	=	Cancer risk level criterion at 1×10^{-6}.
T&O	=	Taste and odor criterion.
lnH	=	Natural logarithm of the hardness of stream as mg/l $CaCO_3$.
N/A	=	Insufficient data to develop criterion.
b	=	Criterion is for total of halomethanes (5V + 8V + 12V + 20V + 21V) present.
c	=	Criterion is for total dichlorobenzenes (20B + 21B + 22B) present.
d	=	Criterion is for total PCBs (18P + 19P + 20P + 21P + 22P + 23P + 24P).

See 25 Pa. Code Chapter 16 for specific details.

Refer to 25 Pa. Code Chapter 93 for other specific Water Quality Standards.

TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
1M	ANTIMONY	07440360	219	1095	10	H
2M	ARSENIC	07440382	190(As3+)	360(As3+)	0.02	CRL
3M	BERYLLIUM	07440417	0.01 x 96hr LC50	0.05 x 96hr LC50	N/A	-
4M	CADMIUM	07440439	Exp(0.7852[lnH]-3.490)	Exp(1.128[lnH]-3.828)	10	H
5M	CHROMIUM, VI	07440473	11	16	N/A	-
6M	COPPER	07440508	Exp(0.8545[lnH]-1.465)	Exp(0.9422[lnH]-1.464)	1000	T&O
7M	LEAD	07439921	Exp(1.266[lnH]-4.661	Exp(1.266[lnH]-1.416	50	H
8M	MERCURY	07439976	0.012	2.4	0.144	H
9M	NICKEL	07440020	Exp(0.8460[lnH]+1.1645)	Exp(0.8460[lnH]+3.3612)	600	H
10M	SELENIUM	07782492	5	20	N/A	-
11M	SILVER	07440224	0.2	Exp(1.72[lnH]-6.52)	200	AES
12M	THALLIUM	07440280	13	65	2	H
13M	ZINC	07440666	Exp(0.8473[lnH]+0.7614)	Exp(0.8473[lnH]+0.8604)	5000	T&O
14M	CYANIDE, FREE	00057125	5	22	700	H
1A	2-CHLOROPHENOL	00095578	112	560	0.1	T&O
2A	2,4-DICHLOROPHENOL	00120832	337	1685	0.3	T&O

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	FISH and AQUATIC LIFE CRITERIA CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
3A	2,4-DIMETHYLPHENOL	00105679	132	660	400	T&O
4A	4,6-DINITRO-o-CRESOL	00534521	16	80	13.4	H
5A	2,4-DINITROPHENOL	00051285	131	655	70	H
6A	2-NITROPHENOL	00088755	1600	8000	N/A	-
7A	4-NITROPHENOL	00100027	467	2335	N/A	-
8A	p-CHLORO-m-CRESOL	00059507	31	155	3000	T&O
9A	PENTACHLOROPHENOL	00087865	Exp(1.005[pH]-5.290) @pH= 6.5 7.8 9.0 Crit= 3.5 13 43	Exp(1.005[pH]-4.830) @pH= 6.5 7.8 9.0 Crit= 5.5 20 68	0.3	CRL
10A	PHENOL	00108952	20	100	300	T&O
11A	2,4,6-TRICHLOROPHENOL	00088062	91	455	2	CRL
1V	ACROLEIN	00107028	1	5	320	H
2V	ACRYLONITRILE	00107131	129	645	0.06	CRL
3V	BENZENE	00071432	128	640	1	CRL
5V	BROMOFORM	00075252	365	1825	4	CRL
6V	CARBON TETRACHLORIDE	00056235	556	2780	0.3	CRL

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
7V	CHLOROBENZENE	00108907	236	1180	20	T&O
8V	CHLORODIBROMO-METHANE	00124481	N/A	N/A	0.4	CRL
9V	CHLOROETHANE	00075003	N/A	N/A	N/A	-
10V	2-CHLOROETHYL VINYL ETHER	00110758	3500	17,500	N/A	-
11V	CHLOROFORM	00067663	389	1945	6	CRL
12V	DICHLOROBROMO-METHANE	00075274	N/A	N/A	0.3	CRL
14V	1,1-DICHLOROETHANE	00075343	N/A	N/A	N/A	-
15V	1,2-DICHLOROETHANE	00107062	3088	15,440	0.4	CRL
16V	1,1-DICHLOROETHYLENE	00075354	1492	7460	0.06	CRL
17V	1,2-DICHLOROPROPANE	00078875	2165	10,825	N/A	-
18V	1,3-DICHLOROPROPYLENE	00542756	61	305	N.D.	CRL
19V	ETHYLBENZENE	00100414	580	2900	3000	H
20V	METHYL BROMIDE	00074839	110	550	50	H

AR100268

TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	FISH and AQUATIC LIFE CRITERIA CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
21V	METHYL CHLORIDE	00074873	5500	27,500	N/A	-
22V	METHYLENE CHLORIDE	00075092	2368	11,840	5	CRL
23V	1,1,2,2-TETRACHLOROETHANE	00079345	208	1040	0.2	CRL
24V	TETRACHLORO-ETHYLENE	00127184	139	695	0.7	CRL
25V	TOLUENE	00108883	330	1650	7000	H
26V	1,2-trans-DICHLOROETHYLENE	00156605	1350	6750	700	H
27V	1,1,1-TRICHLOROETHANE	00071556	605	3025	1000	H
28V	1,1,2-TRICHLOROETHANE	00079005	678	3390	0.6	CRL
29V	TRICHLOROETHYLENE	00079016	450	2250	3	CRL
31V	VINYL CHLORIDE	00075014	N/A	N/A	0.02	CRL
1B	ACENAPHTHENE	00083329	17	85	20	T&O
2B	ACENAPHTHYLENE	00208968	N/A	N/A	N/A	-
3B	ANTHRACENE	00120127	N/A	N/A	10,000	H
4B	BENZIDINE	00092875	59	295	0.0001	CRL

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	FISH and AQUATIC LIFE CRITERIA CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
5B	BENZO(a)ANTHRACENE	00056553	0.1	0.5	0.003	CRL
6B	BENZO(a)PYRENE	00050328	N/A	N/A	0.003	CRL
7B	3,4-BENZOFLUORANTHENE	00205992	N/A	N/A	0.003	CRL
8B	BENZO(ghi)PERYLENE	00191242	N/A	N/A	N/A	-
9B	BENZO(k)FLUORANTHENE	00207089	N/A	N/A	0.003	CRL
10B	BIS(2-CHLOROETHOXY) METHANE	00111911	N/A	N/A	N/A	-
11B	BIS(2-CHLOROETHYL) ETHER	00111444	6000	30,000	0.03	CRL
12B	BIS(2-CHLORO-ISOPROPYL)ETHER	39638329	N/A	N/A	1000	H
13B	BIS(2-ETHYLHEXYL) PHTHALATE	00117817	909	4545	2	CRL
14B	4-BROMOPHENYL PHENYL ETHER	00101553	54	270	N/A	-

ER 100270

TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
15B	BUTYLBENZYL PHTHALATE	00085687	35	140	300	H
16B	2-CHLORONAPH-THALENE	00091587	N/A	N/A	N/A	-
17B	4-CHLOROPHENYL PHENYL ETHER	07005723	N/A	N/A	N/A	-
18B	CHRYSENE	00218019	N/A	N/A	0.003	CRL
19B	DIBENZO(a,h) ANTHRACENE	00053703	N/A	N/A	0.003	CRL
20B	1,2-DICHLOROBENZENE	00095501	164	820	400 for dichloro-benzene	H
21B	1,3-DICHLOROBENZENE	00541731	69	345	see 20B	H
22B	1,4-DICHLOROBENZENE	00106467	146	730	see 20B	H
23B	3,3'-DICHLORO-BENZIDINE	00091941	N/A	N/A	0.04	CRL
24B	DIETHYL PHTHALATE	00084662	800	4000	20,000	H
25B	DIMETHYL PHTHALATE	00131113	495	2475	313,000	H

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
26B	DI-N-BUTYL PHTHALATE	00084742	21	105	3000	H
27B	2,4-DINITROTOLUENE	00121142	318	1590	0.05 for dinitro-toluene	CRL
28B	2,6-DINITROTOLUENE	00606202	198	990	see 27B	CRL
29B	DI-N-OCTYL PHTHALATE	00117840	N/A	N/A	N/A	-
30B	1,2-DIPHENYLHYDRAZINE	00122667	3	15	0.04	CRL
31B	FLUORANTHENE	00206440	40	200	300	H
32B	FLUORENE	00086737	N/A	N/A	1000	H
33B	HEXACHLOROBENZENE	00118741	N/A	N/A	0.0007	CRL
34B	HEXACHLOROBUTA-DIENE	00087683	2	10	0.5	CRL
35B	HEXACHLOROCYCLO-PENTADIENE	00077474	1	5	1	T&O
36B	HEXACHLOROETHANE	00067721	12	60	2	CRL
37B	INDENO(1,2,3-cd)PYRENE	00193395	N/A	N/A	0.003	CRL

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
38B	ISOPHORONE	00078591	2080	10,400	700	H
39B	NAPHTHALENE	00091203	43	135	10	T&O
40B	NITROBENZENE	00098953	808	4040	20	H
41B	N-NITROSODI-METHYLAMINE	00062759	3420	17,100	0.0007	CRL
42B	N-NITROSODI-N-PROPYLAMINE	00621647	N/A	N/A	0.005	CRL
43B	N-NITROSODI-PHENYLAMINE	00086306	59	295	5	CRL
44B	PHENANTHRENE	00085018	1	5	N/A	-
45B	PYRENE	00129000	N/A	N/A	1000	H
46B	1,2,4-TRICHLOROBENZENE	00120821	26	130	700	H
1P	ALDRIN	00309002	0.1	1.5	0.0001	CRL
2P	alpha-BHC	00319846	N/A	N/A	0.004	CRL
3P	beta-BHC	00319857	N/A	N/A	0.02	CRL
4P	gamma-BHC (LINDANE)	00058899	0.08	1	0.02	CRL
5P	delta-BHC	00319868	N/A	N/A	N/A	-

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
6P	CHLORDANE	00057749	0.0043	1.2	0.0005	CRL
7P	4,4'-DDT	00050293	0.001	0.55	0.0005	CRL
8P	4,4'-DDE	00072559	0.001	0.55	N.D.	CRL
9P	4,4'-DDD	00072548	0.001	0.55	N.D.	CRL
10P	DIELDRIN	00060571	0.0019	1.3	0.0001	CRL
11P	alpha-ENDOSULFAN	00095988	0.056	0.11	0.9 for endosulfan	H
12P	beta-ENDOSULFAN	33212659	0.056	0.11	see 11P	H
13P	ENDOSULFAN SULFATE	01031078	N/A	N/A	N/A	-
14P	ENDRIN	00072208	0.0023	0.09	0.8	H
15P	ENDRIN ALDEHYDE	07421934	N/A	N/A	N/A	H
16P	HEPTACHLOR	00076448	0.0038	0.26	0.0002	CRL
17P	HEPTACHLOR EPOXIDE	01024573	0.1	0.5	N.D.	CRL
18P	PCB-1242	53469219	0.014	1	0.00004 for PCBs	CRL
19P	PCB-1254	11097691	0.014	1	see 18P	CRL
20P	PCB-1221	11104282	0.014	1	see 18P	CRL

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
21P	PCB-1232	11141165	0.014	1	see 18P	CRL
22P	PCB-1248	12672296	0.014	1	see 18P	CRL
23P	PCB-1260	11096825	0.014	1	see 18P	CRL
24P	PCB-1016	12674112	0.014	1	see 18P	CRL
25P	TOXAPHENE	08001352	0.0002	0.37	0.0007	CRL
PP	2,3,7,8-TCDD	01746016	N/A	N/A	1 E-8	CRL
--	BARIUM	07440393	4100	20,500	1000	H
--	BORON	07440428	1610	8050	3000	H
--	COBALT	07440484	19	95	N/A	-
--	LITHIUM	07439932	N/A	N/A	900	H
--	VANADIUM	07440622	103	515	N/A	-
--	ACETONE	00067641	86,000	446,000	4000	H
--	p-CRESOL	00106445	159	795	2000	H
--	2-HEXANONE	00591786	4280	21,400	N/A	-
--	METHYLETHYL KETONE	00078933	32,200	161,000	2000	H
--	METHYLISOBUTYL KETONE	00108101	5000	26,000	2000	H

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TABLE 1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

PP NO	CHEMICAL NAME	CAS NUMBER	FISH and AQUATIC LIFE CRITERIA CRITERIA CONTINUOUS CONCENTRATIONS (ug/l)	FISH and AQUATIC LIFE CRITERIA CRITERIA MAXIMUM CONCENTRATIONS (ug/l)	HUMAN HEALTH CRITERIA (ug/l)	
--	1-PROPANOL	00071238	45,550	227,750	N/A	-
--	2-PROPANOL	00067630	88,633	443,165	N/A	-
--	1,2,3-TRICHLORO-PROPANE	00096184	N/A	N/A	200	H
--	XYLENE	01330207	211	1055	300	T&O
--	FORMALDEHYDE	00050000	436	2180	N.D.	CRL

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Appendix A
Table 2

Pennsylvania Maximum Contaminant Levels
January 1993

Primary Contaminants	Maximum Contaminant Level
Metals:	
Arsenic	0.05 mg/L
Barium[1]	1 mg/L
Cadmium	0.005 mg/L
Chromium[1]	0.05 mg/L
Copper	1.3 mg/L
(Not an MCL. Level at which public water systems must take action to reduce the concentration of copper)	
Lead	0.015 mg/L
(Not an MCL. Level at which public water systems must take action to reduce the concentration of lead)	
Mercury	0.002 mg/L
Selenium[1]	0.01 mg/L
Silver[2]	0.05 mg/L
Non-Metallic Inorganic Chemicals:	
Asbestos	7 million fibers (longer than 10um)/L
Fluoride	2 mg/L
Nitrate, as nitrogen	10 mg/L
Nitrite, as nitrogen	1 mg/L
Total Nitrate & Nitrite as nitrogen	10 mg/L
Volatile Organic Chemicals:	
Benzene	0.005 mg/L
Carbon tetrachloride	0.005 mg/L
o-Dichlorobenzene	0.6 mg/L
p-Dichlorobenzene	0.075 mg/L
1,2-Dichloroethane	0.005 mg/L
1,1-Dichloroethylene	0.007 mg/L
cis-1,2-Dichloroethylene	0.07 mg/L
trans-1,2-Dichloroethylene	0.1 mg/L
1,2-Dichloropropane	0.005 mg/L
Ethylbenzene	0.7 mg/L
Monochlorobenzene	0.1 mg/L
Styrene	0.1 mg/L
Tetrachloroethylene	0.005 mg/L
Toluene	1 mg/L
Total Trihalomethanes	0.10 mg/L
1,1,1-Trichloroethane	0.2 mg/L
Trichloroethylene (TCE)	0.005 mg/L
Vinyl chloride	0.002 mg/L
Xylenes (total)	10 mg/L

Primary Contaminants	Maximum Contaminant Level
Pesticides, PCBs:	
Alachlor	0.002 mg/L
Atrazine	0.003 mg/L
Carbofuran	0.04 mg/L
Chlordane	0.002 mg/L
2,4-D	0.07 mg/L
Dibromochloropropane (DBCP)	0.0002 mg/L
Endrin[a]	0.0002 mg/L
Ethylene dibromide (EDB)	0.00005 mg/L
Heptachlor	0.0004 mg/L
Heptachlor epoxide	0.0002 mg/L
Lindane	0.0002 mg/L
Methoxychlor	0.04 mg/L
PCBs	0.0005 mg/L
Pentachlorophenol	0.001 mg/L
Toxaphene	0.003 mg/L
2,4,5-TP (Silvex)	0.01 mg/L
Radiological:	
Gross Alpha	15 pCi/L
Combined Radium 226/228	5 pCi/L
Man-made Radionuclides (beta particle and photon radioactivity)	4 mrem/yr
Microbiological:	
Coliform bacteria	5% positive when ≥ 40 samples per month 1 positive per month when < 40 samples per month

Secondary Contaminants	Maximum Contaminant Level
Chloride	250 mg/L
Color	15 color units
Copper	1 mg/L
Corrosivity	non-corrosive
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Sulfate	250 mg/L
Total dissolved solids	500 mg/L
Zinc	5 mg/L

[a]Recently revised federal MCLs for these chemicals are less stringent than the current state MCLs. The more stringent state MCLs will remain in effect in Pennsylvania until changed by adoption of new state regulations.

[b]The federal primary MCL for silver was deleted on July 30, 1992. However, the state primary MCL for silver remains in effect.

APPENDIX B

LOCATION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
'roperty line isolation distances	Must maintain a 50 ft. buffer zone between property line and treatment, storage, disposal activities unless variance is granted. NOTE: Ignitables/Reactives in containers - no variance allowed.	Activities within regulated distance of property line.	PA SWMA, Act 97 Chapters 264 or 265 and Chapter 288
Within 1 mile of a fault displaced in Holocene time	Disposal prohibited unless demonstration is made that unit is designed to withstand fault activity.	Disposal within 1 mile of fault. NOTE: Disposal 1 mile or more from a fault acceptable with no demonstration.	PA SWMA, Act 97 Chapter 269
Within 100-year floodplain	No treatment or disposal within 100 yr. floodplain. Storage units must withstand 100 yr. flood forces.	None	PASWMA, Act 97 Chapters 269 and 288
	Obstructions must comply with Chapter 106 requirements.	Construction, earthmoving, filling, excavation within 100 yr. floodplain	Floodplain Management Act of 1978, PL 851, No 166 Dam Safety & Encroachment Act of 1978, PL 1375
Within area where action may cause irreparable harm, loss, or destruction of significant artifacts	Coal Mining Prohibited	Surface Mining and valid existing rights	Surface Mining Conservation & Reclamation Act
	Prohibition of adverse environmental visual or traffic impacts - must provide impact analysis.	Activity within one mile of property owned by PA Historical & Museum Commission Activity within 1/4 mile of site listed in PA Inventory of Historic Places or in PA Archaeological Site Survey.	PA SWMA, Act 97 Chapter 269 PA History Code (37 Pa Cons. Stat.)

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APPENDIX B

LOCATION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Historic project owned or controlled by Federal or State agency	Prohibition of adverse environmental, visual or traffic impacts must provide impact analysis. Treatment & Disposal prohibition.	Activity within one mile of property owned by PA Historical & Museum Commission or on National Register of Historic Places.	PA SWMA, Act 97 Chapter 269
	Coal Mining prohibited unless approved jointly by DER and agency with jurisdiction over the property/place	Surface Mining/Valid Existing Rights	Surface Mining Conservation & Reclamation Act
Critical habitat upon which endangered species or threatened species depends	Action to conserve endangered species or threatened species including consultation with DER Bureau of Forestry	Determination of presence of endangered or threatened species	Wild Resource Conservation Act, PL 547, No. 170, 32 P.S. 5301-5314
Wetlands	No treatment or disposal within Wetland Area. Isolation distances may apply.	Must be a wetland area as defined by State and Federal law.	PA SWMA, Act 97, Chapters 269 and 288
	Obstructions and encroachments must comply with Chapter 105 requirements.		Dam Safety & Encroachments Act of 1978, PL 1375
Wilderness Area	Prohibition of adverse environmental, visual or traffic impacts - must provide impact analysis. No Disposal or Treatment in Landmark Areas	Activity within one mile of wild, natural or landmark area.	PA SWMA, Act 97, Chapters 269
Wildlife refuge, fish hatchery	Same as Wilderness area, also no disposal or treatment in National or State refuges or hatcheries	Activity within one mile of wild, natural or landmark area.	PA SWMA, Act 97, Chapters 269

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APPENDIX B

LOCATION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Area affecting stream or river	Obstructions and encroachments must comply with Chapter 105 requirements.	Obstruction or encroachment at or in regulated waters of the State.	Dam Safety & Encroachments Act of 1978, PL 1375
	Water Quality Criteria must be met in stream.	Activity potentially affecting stream or river.	PASWMA, Act 97, Chapters 269 and 288
			25 PA Code 93 4, 93.7, 93.8(a), 93.9; 25 Pa Code 16
Within area affecting national or State wild, scenic, or recreational river	Prohibit activities that may create adverse environmental, visual or traffic impacts on a river.	River or river corridor designated pursuant to the PA Scenic Rivers Act or listed as a 1-A priority for study by DER.	The PA Scenic River Act and all subsequent legislation designating waterways as scenic PA SWMA, Act 97, Chapter 269
Within coastal zone	Conduct activities consistent with state program requirements.	Activities affecting designated PA Coastal Zones	Final Program EIS, PA Coastal Zone Management Program, 1980
Agricultural areas	Treatment and Disposal prohibited in Agricultural Areas established under PA Ag Area Security Law or in farmland classified as Class I agricultural land by SCS.	Area must be designated by Soil Conservation Service or under PA Ag Area Security Law.	PA SWMA, Act 97, Chapter 269
Exceptional value watershed	Treatment or disposal prohibited.	Must be designated exceptional value.	PA SWMA, Act 97 Chapter 269
	Impact analysis on pending designated exceptional value watershed.	DER/EQB must have received a written request for designation.	PA SWMA, Act 97 Chapter 269
	Maintain existing quality.	Designated in 25 PA Code Section 93.9.	25 PA Code 5 1(c)

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APPENDIX B

LOCATION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Oil and gas wells	Disposal prohibited over active or inactive oil and gas wells or gas storage areas located within or beneath site. If abandoned facilities exist, but not below disposal unit, need analysis of expected subsurface discharges for approval of unit.	Active, Inactive, Abandoned oil and gas wells and gas areas must meet definition in Oil & Gas Act of 1984.	PA SWMA, Act 97 Chapter 269
Underlain by fractured bedrock	Disposal prohibited over areas of coarse unconsolidated deposits including heavily fractured bedrock. Other activities acceptable if subsurface conditions pose no threat.	Existence of geologic condition.	PA SWMA, Act 97 Chapter 269
Underlain by carbonate or limestone formations (>5 feet)	Disposal prohibited over these formations: Areas mapped by PA Geologic Survey.	Formations must be >5 feet thick and be the topmost geologic unit.	PA SWMA, Act 97 Chapters 269 and 288
Landslide prone area	Treatment and Disposal activities: must provide impact analysis on unit design with respect to landslide.	Unit must be in or adjacent to landslide prone area.	PA SWMA, Act 97 Chapter 269
Within 5 miles of Earthquake epicenter	Treatment and Disposal activities: demonstrate unit design can withstand seismic activities.	Earthquake Epicenter mapped by USGS or PA Geologic Survey	PA SWMA, Act 97 Chapter 269
Deep mines/Surface mines	Treatment and Disposal activities: provide analysis of subsidence risk. Further mining of minerals providing support of unit prohibited.	Existence of deep or surface mines and supporting data for future mining areas.	PA SWMA, Act 97 Chapters 269 and 288

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APPENDIX B

LOCATION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
State Forest Natural Areas State Forest Wild Areas	Area must be administered in such a manner so as to leave it unimpaired as a Natural or Wild Area and to preserve its unique features for which it was designated.	Commonwealth-owned area designated as a Natural or Wild Area.	Administrative Code of 1929, PL 177 and 1902A PA SWMA, Act 97 Chapter 269
Public or Private Wild Plant Sanctuary	Area must be administered in such a manner as will leave it unimpaired as a wild plant sanctuary and to preserve its unique habitat values for which it was designated.	Area designated by DER, Bureau of Forestry as a Public or Private Wild Plant Sanctuary.	Wild Resource Conservation Act, PL 597, No. 170, 32 P.S. 5301-5314; PA SWMA, Act 97 Chapter 269
Park, Forest, Gameland, Appalachian Trail (or other State Trail)	Prohibit activities that may create adverse environmental, visual or traffic impacts.	Within one mile of facility.	PA SWMA, Act 97 Chapter 269
Rare, threatened, endangered species habitat	prohibition of adverse impacts on species or habitat	Habitat or species protected by Federal Endangered Species Act, Wild Resource Conservation Act or recognized by PA Fish & Game Commissions.	PA SWMA, Act 97 Chapter 269
Water Supply Area	Disposal prohibited unless permanent alternative supply provided and consent obtained.	Regulated isolation distances between wells, spring and/or supply intake	PA SWMA, Act 97 Chapters 269 and 288
40 ft. setback from building	Containers holding ignitables and reactives must maintain a 40 ft. setback from a building for outdoor storage.	Outdoor storage in containers	PA SWMA, Act 97 Chapters 264 and 265

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APPENDIX C

ACTION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Air stripping	Use BAT, Meet "Haz. Waste and Petroleum Products Contamination Clean-up" Procedures, and Air Toxics Substance Guidance limits.		Air Pollution Control Act (APCA)
Capping (see also Closure with Waste in Place for additional associated requirements)	Meet design and performance standards Table 3. Final grade 2-15%; cover soils USDA class. loams. Permeability of cap $\leq$ permeability of liner. Vegetation based on PennDOT Form 408 or Penn State Agronomy Guide.		PA SWMA, Act 97 Chapters 264 or 265 and 288
Clean Closures (removal of waste and contaminated soils - no groundwater contamination)	Demonstrate no subsoil contamination and no groundwater contamination from that unit. Use sampling grid to determine sampling locations.		PA SWMA, Act 97 Chapters 264 or 265
Closure with Waste in Place (including capping and groundwater monitoring, pumping)	Stabilize waste to support cap. Must withstand dynamic and static loading with a minimum of F.O.S. of 1.5. Install gas monitoring and venting systems if appropriate. Install groundwater monitoring system - minimum three (3) downgradient, one (1) upgradient per aquifer. Prepare and implement assessment and abatement plan if contamination is detected. Need approval of groundwater treatment plant design. 30 yr. post-closure monitoring; notice in property deed. Leachate storage capacity - 1,000 gal/ acre of closed unit.		PA SWMA, Act 97 Chapters 264 or 265 and 288 Clean Streams Law

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APPENDIX C

ACTION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Closure of Land Treatment Units	Establish/Maintain Vegetative cover; maintain run-on, run-off control, wind dispersal; prohibit growth of food chain crops		PA SWMA, Act 97 Chapters 264 or 265 and 288
Consolidation within a Unit	Closure of old units: either clean closure or capping		PA SWMA, Act 97 Chapters 264 or 265
Consolidation between Units	Disposal in a different unit prohibited unless unit meets "permit" standards. Old unit must meet closure standards.		PA SWMA, Act 97 Chapters 264 or 265
Container Storage	Meet spacing and set back requirements, secondary containment. Containers must be in good condition and labeled, Cannot store over 1 yr without cause.		PA SWMA, Act 97 Chapters 264 or 265 and 299
Tank Storage	Meet generally accepted industry standards; UL142, API650, etc. Have: secondary containment, alarms, pressure/overflow controls, min. shell thickness established, meet NFPA Code 30 standard, Tank Evaluation Repair Plan, VONC plan, standby equipment. VOC emission control device.		PA SWMA, Act 97 Chapters 264 and 299
Tank treatment (neutralization, filtration, separation, chemical treatment, dewatering)	See tank storage. Also have treatability study program/waste analysis trial treatment test. VOC, fugitive emission controls.		PA SWMA, Act 97 Chapters 264 or 265

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APPENDIX C

ACTION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Construction of New Landfill On-Site (see Closure with Waste in Place)	Meet design and performance standard for liners. Meet groundwater isolation distance - no groundwater manipulation allowed. Meet buffer zone, subbase slope and flow zone permeability requirements. Meet leachate and run-off storage requirements. Meet EPA's CQA and MTR. Develop and implement groundwater monitoring program (see closure with waste in place).		PA SWMA, Act 97 Chapters 264 and 288
Construction of New Surface Impoundments	See above, plus meet dike and slope limitation		PA SWMA, Act 97 Chapters 264 or 265 and 288
Dike Stabilization	Construct dikes with sufficient strength to prevent failure. Meet dike slope limitations for impoundments.		Dam Safety and Encroachments Act; PA SWMA, Act 97 Chapters 264 or 265 and 288
Discharge of Treatment System Effluent	Bureau of Water Quality authorization of NPDES discharge and treatment facility construction.		25 PA Code Chapters 91, 92
Incineration	Need approval from Bureaus of Air Quality Control and Waste Management. Meet Air Toxics Substances Guidance limits. Prepare Trial Burn Plan; establish POHC's demonstrate 99 99% DRE. See also tank storage. Use BAT. Meet buffer zone, odor and noise control.		PA SWMA, Act 97 Chapters 264 or 265 and 297

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APPENDIX C

ACTION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Thermal treatment (Pryolysis, Virtification, etc.)	Obtain Air Quality Plan approval. Meet buffer zone. Develop test plans. See also tank storage. NOTE: No open burning except for detonation of explosives - meet specific buffer zones.		APCA; PA SWMA, Act 97 Chapters 264 or 265
Land Treatment	Bureau of Water Quality authorization of any treatment facility construction. Meet food-chain crop prohibition, cadmium restriction. Prepare unsaturated zone monitoring Plan, VONC plan. Meet setback requirements. Application rates consistent with DER's "Sewage Septic Tank and Holding Tank Waste Use on Agricultural Land" Guide.		25 PA Code Chapter 91; PA SWMA, Act 97 Chapters 264 or 265 and 291
Treatment (when Waste will be Land Disposed)	See Tank Treatment. Prepare Treatability Study Plan. Meet EPA's Land Disposal Restriction Treatment Standard. Prepare Waste Analysis Plan for QA/QC of treatment process. For landfills, meet 20% min. solids content.		PA SWMA, Act 97 Chapters 264 or 265 and 288
Underground Injection of Wastes and Treated Groundwater	Bureau of Water Quality authorization of any treatment facility construction. NOTE: This is prohibited for listed or "derived-from" listed wastes. No Waste Management standards except groundwater monitoring.	Must be a treated waste or groundwater	25 PA Code Chapter 91 PA SWMA, Act 97 Chapters 264 or 265
Waste Piles	Meet liner standards, leachate and run-off storage requirements as for landfills. Meet groundwater isolation distances and setback. Prepare Waste Pile Evaluation and Repair Plan.	Indoor piles have less stringent requirements.	PA SWMA, Act 97 Chapters 264 or 265 and 299

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APPENDIX C

ACTION-SPECIFIC
APPLICABLE OR RELEVANT APPROPRIATE REQUIREMENTS

Location	Requirement	Prerequisite	Citation
Biological Treatment (soils or groundwater)	Meet Air Quality "Haz. Waste and Petroleum Product Contamination Clean-up" procedures. Prepare treatability study plan. See Tank Treatment. Prepare groundwater abatement plan.		PA SWMA, Act 97 Chapters 264 or 265 and 297
Stabilization	Prepare treatability study plan. See Tank Treatment.		PA SWMA, Act 97 Chapters 264 or 265 and 297
Activated carbon treatment of ground/surface water	See above. May need Air Quality approval if VOCs are treated.		PA SWMA, Act 97 Chapters 264 or 265 and 297; APCA
Recovery/Reclamation (solvents, metals, oils)	Air Quality Plan Approval. Hazardous waste recycling/disposal requirements.	Waste, product, coproduct, byproduct definition.	PA SWMA, Act 97 Chapters 261 and 266
Mining and Reclamation Facility Involvement	Mined land must be restored to approximate original contour (AOC) except areas previously mined prior to current practices and standards may be restored by terracing Alternatives to AOC and terracing may be approved for certain mining when proposed in conjunction with achieving postmining land use.	Lands affected by "surface mining" as defined in SMCRA and Noncoal SMCRA. Waters affected by mining operations. Mining subsidence damage to surface land.	surface Mine Conservation and Reclamation Act (SMCRA) Sec ; Noncoal SMCRA Sec 7 Coal Refuse Disposal Act; Bituminous Mine Subsidence and Land Conservation Act; Clean Streams Law
OTHER Non-specific Earthmoving Activit	Meet Chapter 102 requirements, develop Erosion and Sedimentation Control Plan.		Chapter 102 4, 31

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