Obsolete
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Reg. Filed 11/13/84

Emergency/Reg.
1 set in WR
Board

STATE OF WEST VIRGINIA
DEPARTMENT OF NATURAL RESOURCES
CHARLESTON 25306

JOHN D. ROCKEFELLER IV
Governor

November 4, 1983

DAVID C. CALLAGHAN
Director
WILLIS H. HERTIG, JR.
Deputy Director

The Honorable A. James Manchin
Secretary of State
State Capitol
Charleston, West Virginia 25305

Dear Mr. Secretary:

On May 4, 1983 regulations were promulgated on an emergency basis pursuant to Chapter 29A-3-15 and Chapter 20-5E of the Code of West Virginia. These emergency regulations have been in effect for six (6) months and shall expire after today. However, the reasons outlined in the enclosed Justification of Emergency formed the basis for the May 4, 1983 filing and still exist as of this date. Therefore, since the conditions for the emergency filing still exist, we ask that those regulations be renewed for another six (6) month period. Attached is a list of the emergency regulations filed on May 4, 1983.

Secondly, today we also wish to make and file several changes to the May 4, 1983 regulations and to those regulations duly filed and promulgated in April, 1982. Attached are the affected pages with the changes being underlined. These changes are hereby being promulgated on an emergency basis pursuant to Chapter 29A-3-15 and 20-5E. These changes have not been previously filed and are necessary for this State to receive Interim Authorization for the state Hazardous Waste Management Program as discussed in the enclosed Justification of Emergency.

Respectfully submitted,

David C. Callaghan
Director

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE Nov. 4, 1983
Administrative Law Division

DCC/mcd

STATE OF WEST VIRGINIA

OFFICE OF THE SECRETARY OF STATE

CHARLESTON 25305

A. JAMES MANCHIN
SECRETARY OF STATE

STATE REGISTER FILING

I, David C. Callaghan, Director (Title or Position),

Department of Natural Resources (Department or Division), hereby submit to record in the State Register on 8 1/2 x 11" paper two (2) copies of

( ) proposed rules and regulations concerning topics of material not covered by existing rules and regulations;

( ) proposed rules and regulations superseding rules and regulations already on file;

( ) notice of hearing;

( ) findings and determinations;

(x) rules and regulations; or

( ) other - specify (

This filing pertains to

Chapter 20
Article 5E
Series XV
Section See attached
Page No.

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE 11/4/83
Administrative Law Division

( ) proposed rules and regulations are required to go to Legislative Rule Making Committee;

( ) proposed rules and regulations are excluded from Legislative Rule Making Committee;

11/4/83
Date Submitted

D. C. Callaghan
Signature of Person Authorizing this Filing

Regulations Filed on an Emergency Basis On May 4, 1983, Pertaining to West Virginia Administrative Regulations, Series XV

Section	Changes or New Language
2.00	2.00(9), 2.00(34), 2.00(46), 2.00(71), 2.00(88), 2.00(99), 2.00(108), 2.00(111).
8.01.05 8.07.07	8.01.05(h), 8.07.07(a), 8.07.07(b), 8.07.07(b)(1), 8.07.07(b)(2), 8.07.07(b)(3), 8.07(c)
8.09.02	8.09.02(a), 8.09.02(c).
8.09.03	8.09.03(a)
8.09.04	All new language.
8.09.05	8.09.05(a)(1), 8.09.05(a)(3), 8.09.05(a)(4), 8.09.05(a)(5), 8.09.05(c), 8.09.05(c)(1)(iv).
8.09.06	8.09.06(c)(2), 8.09.06(c)(3), 8.09.06(c)(4), 8.09.06(c)(5) 8.09.06(d)(2), 8.09.06(e)(1), 8.09.06(e)(2).
8.09.10	All new language.
8.10.01	8.10.01(c)
8.10.02	All new language.
8.10.03	All new language.
8.10.04	All new language.
8.10.05	All new language.
8.11-8.13	All new language.
11.01.02	11.01.02(h)
11.05.01	11.05.01(n)
11.05.02	11.05.02(a)(2), 11.05.02(c), 11.05.02(d).
11.05.02(e) through rest of 11.05.02	All new language.
11.12	All new language.
13.00	All new language.

FILED IN THE OFFICE OF
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SECRETARY OF STATE
THIS DATE 11/4/83
Administrative Law Division

CHANGES TO EXISTING REGULATIONS

Section	Change
2.00	100, (118), (9), (120)
3.01.01	3.01.01(b)(1) and (2)
3.03.02	3.03.02(a)(4)
3.03.05	3.03.05 Table I
3.04.04	3.04.04(f), Appendix I, Appendix II and footnote
6.01	6.01(b) and (d)
6.05.01	6.05.01(b)(2)
8.05.01	8.05.01
8.05.02	8.05.02(a)
8.06.01	8.06.01(a), 8.06.01(b)
8.06.07	8.06.07(iii)
8.06.08	8.06.08(c)
8.09.04	All new language
8.09.05	8.09.05(a)
8.09.06	8.09.06(b), 8.09.06(4)
8.10.01	8.10.01(b), 8.10.01(c)
8.10.03	8.10.03, 8.10.03(2)
8.10.04	8.10.04, 8.10.04(3)
8.10.05	8.10.05(a), 8.10.05(a)(1), 8.10.05(a)(2)
8.10.06	8.10.06(b), 8.10.06(c)(2), 8.10.06(e)(2)
8.10.07	8.10.07(a)
8.10.09	8.10.09(b)
8.11.02	8.11.02(v), 8.11.02(ii), 8.11.02(iii), 8.11.02(b), 8.11.02(c), 8.11.02(f), 8.11.02(i), 8.11.02(j)
8.11.03	8.11.03(a), 8.11.03(a)(1), 8.11.03(b)(1), 8.11.03(c)(1)
8.11.11	8.11.04(6), 8.11.11(d)(1)
8.11.13	8.11.13(2)(b)
8.12.10	8.12.04(6), 8.12.04(7)(c)
8.12.11	8.12.11(7), 8.12.11(1)(ii)
8.13.01	8.13.01(b)(2)
8.13.02	8.13.02(a)
8.13.08	8.13.08(4), 8.13.08(6), 8.13.08(iii), 8.13.08(iv), 8.13.08(v), 8.13.08(c)(1), 8.13.08(v)

11.05.02	11.05.02(2)
11.05.03	11.05.03(b)(3)
11.09	11.09(e)(5)
11.10.12	11.10.12(b)(6) and (7)
11.11	11.11(a)
11.12	11.12(b)
11.18.01	11.18.01(e)
11.20	11.20(g) and (h)
13.00	13.00

JUSTIFICATION OF EMERGENCY

West Virginia Code §20-5E-6 requires the Director of the Department of Natural Resources to promulgate regulations within six months of the effective date of the Act [July 9, 1981]. This section indicates clearly that the legislature intended that performance standards for all facilities be developed by January, 1982.

Therefore, the promulgation of emergency regulations is proper inasmuch as such regulations are necessary to comply with a time limitation established by the Code. Further, the promulgation of these regulations may also meet the test of "emergency" because of deadlines established by EPA regulations and when states must apply for either interim or full authorization.

EPA regulations [40 C.F.R. §123.122(c)(1)] require states to apply for all three components of Phase II interim authorization (components A, B, and C) by July 26, 1983. Component A covers storage of waste in containers, Component B covers incineration of wastes and Component C covers land disposal of wastes and ground water monitoring. West Virginia has received an extension for Component C but is required to have Interim Authorization for Components A and B by December, 1983.

And finally, these regulations meet the requirements of an "emergency" in that such regulations are necessary to prevent substantial harm to the public interest and for the immediate preservation of the public health, safety, and welfare. The legislature found in West Virginia Code §20-5E-2 that:

> "(T)he public health and safety and the environment are threatened where hazardous wastes are not managed in an environmentally sound matter . . ." and that "the problem of managing hazardous wastes has become a matter of statewide concern."

The lack of emergency regulations will not only cause harm to the public health, safety, and environment, there will also be substantial harm to the public interest due to duplicative permitting requirements.

If the state obtains Interim Authorization then permits can be issued solely by the State for certain activities. Any state permit issued prior to state authorization (interim authorization for that particular activity), unless jointly issued with and identical to the federal permit, will be invalid at the time of authorization requiring the permit to be reissued. Thus, a facility could be subject to multiple permitting processes.

Another reason which supports the necessity of emergency regulations is that the State's regulatory deadline for permitting will not be met. The West Virginia Administrative Regulations covering Hazardous Waste Management, Section 11.02.04(b) requires the issuance of all hazardous waste management facility permits within five (5) years of the effective date of such regulations. The effective date of the regulations was April, 1982. Therefore,

a year has already elapsed with no substantial permitting activity. If these emergency regulations are not established at this time, an additional year will pass with the State and EPA issuing joint permits. It is doubtful that the State regulatory deadline of April, 1987 can be met under these conditions.

In summary, the following reasons exist which support the issuance of emergency regulations.

1) The rules are necessary to comply with the six months time limitation established in West Virginia Code §20-5E;

2) The rules are necessary to comply with EPA's deadline of December, 1983, for Interim Authorization;

3) The rules are necessary in light of the Legislature's findings that the improper management of hazardous wastes threatens public health, safety and the environment;

4) The rules are necessary to prevent duplication in permitting requirements, which will substantially harm the public interest;

5) The rules are necessary to enable the State to permit all facilities within five years, a requirement of the State regulations which reflects the immediate nature of the Hazardous Waste Program.

and shall include, without limiting the generality of the foregoing, natural or artificial lakes, rivers, streams, creeks, branches, brooks, ponds (except farm ponds, industrial settling basins and ponds and water treatment facilities), impounding reservoirs, springs, wells, water-courses and wetlands;

(99) "Storage" means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere;

(100) "Storm" means the 5-year 24-hour rainfall event for a particular location as it relates to the inspection requirements specified in Sections 8.09.05, 8.10.05 and 8.11.03; "storm" for the purposes specified in the design requirements of Sections 8.09.02, 8.10.02, and 8.11.02 shall mean a 25-year, 24-hour rainfall event for a particular location. Both definitions are as defined by the National Weather Services in Technical Paper #40, "Rainfall Frequency Atlas of the United States", May, 1961, and subsequent amendments thereto or equivalent region or State rainfall probability information developed therefrom;

(101) "Surface impoundment or impoundment" means a facility or part of a facility which is a natural topographic deperssion, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and [illegible] pits, ponds, and lagoons;

(102) "Tank" means a stationary device, designed to contain an [illegible] which is constructed primarily of non-earthen [illegible] structural support;

(118) "Confined aquifer" means an aquifer, overlain by a confining layer of significantly lower hydraulic conductivity, containing ground water that is under sufficient pressure to rise above the level at which it is encountered by a well.

(119) "Inactive portion" means that portion of a facility which has not been in operation since the effective dat· of Section 3.00 of these regulations.

(120) "Vessel" means every description of water craft used or capable of being used as a means of transportation on the water.

IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Section 3.00 General.

Section 3.01 Purpose and Scope.

(a) This section identifies those wastes which are subject to regulation as hazardous wastes.

(b) This section identifies only some of the materials which are hazardous wastes for purposes of Sections 5, 12, 13, and 17 of the West Virginia Code, Chapter 20, Article 5E. A material which is not a hazardous waste identified or listed in this section may still be a hazardous waste for purposes of those sections if the Director has reason to believe that the material may be a hazardous waste within the meaning of 20-5E-3(6) of the State Act.

3.01.01 Definitions of Waste.

(a) A waste is any garbage, refuse, sludge or any other waste material which is not excluded under 3.01.03(a).

(b) An "other waste material" is any solid, liquid, semi-solid or contained gaseous material, resulting from industrial, commercial, mining or agricultural operations, or from community activities which:

(1) Is discarded or is being accumulated, stored or physically, chemically or biologically treated prior to being discarded; or

(2) Has served its original intended use and sometimes is discarded; or

(3) Is a manufacturing or mining by-product and sometimes is discarded.

(c) A material is "discarded" if it is abandoned (and not used, re-used, reclaimed or recycled) by being:

(3) It is an ignitable compressed gas as defined in 49 C.F.R. Section 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under 40 C.F.R. §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 40 C.F.R. § 173.151.

(b) A waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste by the Administrator, or the Director has the Hazardous Waste Number of D001.

3.03.03 Characteristic of Corrositivity.

(a) A waste exhibits the characteristic of corrositivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either the test method specified in the "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," or an equivalent test method approved by the Administrator under the procedures set forth in 40 C.F.R. §§ 260.20 and 260.21.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," or an equivalent test method approved by the Administrator under the procedures set forth in 40 C.F.R. §§ 260.20 and 260.21.

(b) A waste that exhibits the characteristics of corrositivity, but is not listed as a hazardous waste by the Administrator, or Director has the Hazardous Waste Number of D002.

methods approved by the Administrator under the procedures set forth in 40 C.F.R. §§ 260.20 and 260.21, the extract from a representative sample of the waste contains any of the contaminants listed in Table I at a concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this section.

(b) A waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste by the Administrator or Director has the Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE I. - MAXIMUM CONCENTRATION OF CONTAMINANTS FOR CHARACTERISTIC OF EP TOXICITY

EPA Hazardous Waste Number	Contaminant	Maximum Concentration (Milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium (total)	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1 7-epoxy-1,4,4a,5,6,7,8,8a-octa-	

P114.....	Thallium (i) selenite
P115.....	Thallium (i) sulfate
P045.....	Thiofanox
P049.....	Thioimidodicarbonic diamide
P014.....	Thiophenol
P116.....	Thiosemicarbazide
P026.....	Thiourea, (2-chlorophenyl)-
P072.....	Thiourea, 1-naphthalenyl-
P093.....	Thiourea, phenyl-
P123.....	Toxaphene
P118.....	Trichloromethanethiol
P119.....	Vanadic acid, ammonium salt
P120.....	Vanadium pentoxide
P120.....	Vanadium(V) oxide
P001.....	Warfarin
P121.....	Zinc cyanide
P122.....	Zinc phosphide (R,T)

(f) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in § 3.01.04 of these regulations.

[Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

U001.....	Acetaldehyde (I)
U034.....	Acetaldehyde, trichloro-
U187.....	Acetamide, N-(4-ethoxyphenyl)-
U005.....	Acetamide, N-9H-fluoren-2-yl
U112.....	Acetic acid, ethyl ester (i)
U144.....	Acetic acid, lead salt
U214.....	Acetic acid, thallium(i) salt
U002.....	Acetone(I)
U003.....	Acetonitrile (I,T)
U004.....	Acetophenone
U005.....	2-Acetylaminofluorene
U006.....	Acetyl chloride (C,R,T)
U007.....	Acrylamide
U008.....	Acrylic acid (i)
U009.....	Acrylonitrile

APPENDIX I - REPRESENTATIVE SAMPLING METHODS

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similar to the indicated materials, will be considered by the Agency to be representative of the waste.

Extremely viscous liquid - ASTM Standard D140-) Crushed or powdered material--ASTM Standard D346-75 Soil or rock-like material--ASTM Standard D420-69 Soil-like material--ASTM Standard D1452-65.

Fly Ash-like material--ASTM Standard D2234-76 [ASTM Standards are available from ASTM, 1916 Race St., Philadelphia, PA 19103].

Containerized liquid wastes--"COLIWASA" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods."[1] SW-846 (second edition) U.S. Environmental Protection Agency, Office of Solid Waste, Washington, D.C. 20460 [Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 [202] 783-3238.

Liquid waste in pits, ponds, lagoons, and similar reservoirs.--"Pond Sampler" described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods."[1]

This manual also contains additional information on application of these protocols.

APPENDIX II - EP TOXICITY TEST PROCEDURE

A. Extraction Procedure (EP)

1. A representative sample of the waste to be tested (minimum size 100 grams) should be obtained using the methods specified in Appendix I or any other methods capable of yielding a representative sample within the meaning of Part 260. [For

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[1] These methods are also described in "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA 600/2-80-018, January 1980.

specified in Table I of § 3.04.02 using the Analytical Procedures designated below.

Separation Procedure

Equipment: A filter holder, designed for filtration media having a nominal pore size of 0.45 micrometers and capable of applying a 5.3 kg/cm² (75 psi) hydrostatic pressure to the solution being filtered shall be used. For mixtures containing nonabsorptive solids, where separation can be affected without imposing a 5.3 kg/cm² pressure differential, vacuum filters employing a 0.45 micrometers filter media can be used. (For further guidance on filtration equipment or procedures see "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.")

Procedure[4]

(i) Following manufacturer's directions, the filter unit should be assembled with a filter bed consisting of a 0.45 micrometer filter membrane. For difficult or slow to filter mixtures a prefilter bed consisting of the following prefilters in increasing pore size (0.65 micrometer membrane, fine glass fiber prefilter, and coarse glass fiber prefilter) can be used.

(ii) The waste should be poured into the filtration unit.

(iii) The reservoir should be slowly pressurized until liquid begins to flow from the filtrate outlet at which point the pressure in the filter should be immediately lowered to 10-15 psig. Filtration should be continued until liquid flow ceases.

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[4] This procedure is intended to result in separation of the "free" liquid portion of the waste from any solid matter having a particle size greater then or equal to 0.45um. If the sample will not filter, various other separation techniques can be used to aid in the filtration. As described above, pressure filtration is employed to speed up the filtration process. This does not alter the nature of the separation. If liquid does not separate during filtration, the waste can be centrifuged. If separation occurs during centrifugation the liquid portion (centrifugate) is filtered through the 0.45um filter prior to becoming mixed with the liquid portion of the waste obtained from the initial filtration. Any material that will not pass through the filter after centrifugation is considered a solid and is extracted.

detailed guidance on conducting the various aspects of the EP see, "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," SW-846, Second Edition, U.S. Environmental Protection Agency Office of Solid Waste, Washington, D. C. 20460.[2]

2. The sample should be separated into its component liquid and solid phases using the method described in "Separation Procedure" below. If the solid residue[3] obtained using this method totals less than 0.5% of the original weight of the waste, the residue can be discarded and the operator should treat the liquid phase as the extract and proceed immediately to Step 8.

3. The solid material obtained from the Separation Procedure should be evaluated for its particle size. If the solid material has a surface area per gram of material equal to, or greater than, 3.1 cm^2 or passes through a 9.5 mm (0.375 inch) standard sieve, the operator should proceed to Step 4. If the surface area is smaller or the particle size larger than specified above, the solid material should be prepared for extraction by crushing, cutting or grinding the material so that it passes through a 9.5 mm (0.375 inch) sieve or, if the material is in a single piece, by subjecting the material to the "Structural Integrity Procedure" described below.

4. The solid material obtained in Step 3 should be weighed and placed in an extractor with 16 times its weight of deionized water. Do not allow the material to dry prior to weighing. For purposes of this test, an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extration fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid.

5. After the solid material and deionized water are placed in the extractor, the operator should begin agitation and measure the pH of the solution in the extractor. If the pH is greater than

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[2] Copies may be obtained from Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 (202)783-3238.

[3] The percent solids is determined by drying the filter pad at 80°C until it reaches the constant weight and then calculating the percent solids using the following equation:

(weight of pad + solid)
- (tare weight of pad)
x 100 = % solids

initial weight of sample

STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

Section 6.00 General.

Section 6.01 Purpose, Scope and Applicability.

(a) This Section establishes standards and regulations for generators of hazardous wastes.

(b) A generator who treats, stores, or disposes of hazardous waste on-site must only comply with the following subsections of this Section with respect to that waste: 6.01.01 for determining whether his waste is hazardous; 6.01.02 for obtaining an EPA identification number; 6.04.01(c) and (d) for recordkeeping; 6.04.04 for additional reporting; and, if applicable; 6.05.02 for Farmers ; and 6.03.05 for accumulation of hazardous waste.

(c) Any person who imports hazardous waste into West Virginia shall comply with the standards applicable to generators established in this section.

(d) A farmer who generates waste pesticides which are hazardous wastes and who complies with all the requirements of Section 6.05.02 is not required to comply with the remainder of these regulations with respect to such pesticides.

(e) A person who generates a hazardous waste, as defined in Section 3.00 is subject to the compliance requirements and penalties prescribed in Sections 14, 15 and 16 of the Hazardous Waste Management Act if he does not comply with the requirements of this section.

(e) An owner or operator who initiates a shipment of hazardous waste from a treatment, storage, or disposal facility

6.04.04 Additional Reporting.

The Chief, as he deems necessary, may require generators to furnish additional reports concerning the quantities and disposition of hazardous wastes identified or listed in Section 3.00.

Section 6.05 Special Conditions.

6.05.01 International Shipments.

(a) Any person who exports hazardous waste to a foreign country or imports hazardous waste from a foreign country into West Virginia shall comply with the special requirements regulations.

(b) When shipping hazardous waste outside the United States the generator shall:

(1) Notify the Chief in writing four weeks before the initial shipment of hazardous waste to each country in each calendar year. The waste shall be identified by its EPA hazardous waste identification number and its Department of Transportation shipping description. The name an address of the foreign consignee shall be included in the notice.

(2) Send the original of the notice to the Office of International Activities (A-106), U. S. Environmental Protection Agency, Washington, D. C. 20460, and one copy to the Chief, Division of Water Resources.

(3) Require that the foreign consignee confirm the delivery of the waste in the foreign country. A copy of the manifest, signed by the foreign consignee, may be used for this purpose.

(4) Meet the requirements under Section 6.02.02 for the manifest, except that:

(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable.

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

(8) Measures taken to prevent recurrence of the emergency.

(9) Such other information specifically requested by the Chief which is reasonably necessary and relevant to the purpose of an operating record.

Section 8.05 Manifest System, Recordkeeping, and Reporting.

8.05.01 Applicability.

The regulations in this section apply to owners and operators of both on-site and off-site facilities, except as Section 8.01 provides otherwise. Sections 8.05.02, 8.05.03 and 8.05.07 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

8.05.02 Use of the manifest system.

(a) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his agent must:

(1) Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

(2) Note any significant discrepancies in the manifest [as defined in 8.05.03(a)] on each copy of the manifest;

(3) Immediately give the transporter at least one copy of the signed manifest;

(4) Within 30 days after the delivery, send a copy of the manifest to the generator; and

[Comment: Small quantities of hazardous waste are excluded from regulation under this section and do not require a manifest. Where a facility receives unmanifested hazardous wastes, the owner or operator must obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the owner or operator is required to file an unmanifested waste report for the hazardous waste movement.]

8.05.08 Additional Reports.

In addition to submitting the annual report and unmanifested waste reports, the owner or operator shall also report to the Chief:

(a) Releases, fires and explosions as specified in Section 8.04.07.

(b) Facility closure as specified in Section 8.06.

Section 8.06 Closure and Post-Closure.

8.06.01 Applicability.

Except as Section 8.01 provides otherwise:

(a) Sections 8.06.02 - 8.06.08 &15.01 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

(b) Sections 8.06.02 - 8.06.08 & 15.01 (which concern post-closure care) apply to the owners and operators of all hazardous waste disposal facilities.

8.06.02 Closure Performance Standard.

The owner or operator must close the facility in a manner that:

(a) Minimizes the need for further maintenance.

(b) Controls, minimizes or eliminates, to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents leachate, contaminated rainfall, or waste decomposition products to the State waters or to the atmosphere.

8.06.03 Closure Plan; Amendment of Plan.

(a) The owner or operator of a hazardous waste management facility must have a written closure plan. The plan must be submitted with Part B of the permit application in accordance with Section 11.05.01 of these regulations, and become a condition of the permit. A copy of the approved plan and all revisions to the plan must be kept at the facility until closure is completed and certified. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The closure plan must include, at least:

(1) A description of how and when the facility will be partially closed, if applicable, and finally closed. The description must identify the maximum extent of the operation which will be

unclosed during the life of the facility, and how the applicable requirements of this sections will be met.

(2) An estimate of the maximum inventory of wastes in storage and treatment at any time during the life of the facility.

(3) A description of the steps needed to decontaminate facility equipment during closure.

(4) An estimate of the expected year of closure and a schedule for final closure. The schedule must include, at a minimum, the total time required to close the facility and the time required for intervening closure activities which will allow tracking of the progress of closure.

[Comment: For example, in the case of a landfill, estimates of the time required to treat and dispose of all waste inventory and of the time required to place a final cover must be included.]

(5) And must satisfy the applicable requirements of Sections 8.02.02; 8.02.04; 8.02.06; 8.07.10; 8.08.05; 8.09.07; 8.09.10; 8.11.11; 8.12.11 and Air Pollution Control regulations, Section 26.

(b) The owner or operator may amend the closure plan at any time during the active life of the facility. (The active life of the facility is that period during which wastes are periodically received.) The owner or operator must amend the plan whenever changes in operating plans or facility design affect the closure plan, or whenever there is a change in the expected year of closure. When the owner or operator requests a permit modification to authorize a change in operating plans or facility design, a modification of the closure plan must be made at the same time. If a permit modification is not needed to authorize the change in operating plans

or facility design, the request for modification of the closure plan must be made within sixty (60) days after the change in operating plans or facility design occurs.

(c) The owner or operator must notify the Chief at least 180 days prior to the expected closure date.

(d) All closure plans must be approved by the Chief based on the determination of compliance with the applicable requirements of Sections 8.02.02; 8.02.04; 8.02.06; 8.07.10; 8/08.05; 8.09.07; 8.09.10; 8.10.09; 8.11.11; 8.12.11 and Air Pollution Control Regulations Section 26. Upon approval, the closure plan shall become a condition of the Hazardous Waste Management Permit.

8.06.04 Closure; Time Allowed for Closure

(a) Within ninety (90) days after receiving the final volume of hazardous wastes, the owner or operator must treat, remove from the site, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Chief may approve a longer period if the owner or operator demonstrates that:

(1)(i) The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete; or

(ii) A. The facility has the capacity to receive additional wastes;

B. There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site; and

C. Closure of the facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment.

(b) The owner or operator must complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes. The Chief may approve a longer closure period if the owner or operator demonstrates that:

(1)(i) The closure activities will, of necessity, take longer than 180 days to complete; or

8.06.07 Post-Closure Care and Use of Property

(a)(1) Post-closure care must continue for thirty (30) years after the date of completing closure and must consist of at least the following:

(i) Groundwater monitoring and reporting as applicable.

(ii) Maintenance of monitoring and waste containment systems as applicable.

(iii) All applicable post closure regulations of Sections 8.09; 8.10; 8.11; 8.12; and 8.13.

(2)(i) During the 180 day period preceding closure or at any time thereafter, the Chief may reduce the post-closure care period to less than thirty (30) years if it is found that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the waste, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the facility is secure.)

(ii) Prior to the time that the post-closure care period is due to expire, the Chief may extend the post-closure care period if it is found that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of waste at levels which may be harmful to human health and the environment.)

(b) The Chief may require, at closure, continuation of any of the security requirements of Section 8.02.05 during part or all of the post-closure period after the date of completing closure when access by the public or domestic livestock may pose a hazard to human health.

(c) Post-closure use of property on or in which hazardous wastes remain after closure must never be allowed to disturb the integrity of the final cover, liner(s) or any other

(ii) The function of the facility monitoring equipment.

(3) The name, address, and phone number of the person or office to contact about the disposal facility during the post-closure period. This person or office must keep an up-dated post-closure plan during the post-closure period

(b) The owner or operator may amend the post-closure plan at any time during the active life of the disposal facility or during the post-closure care period. The owner or operator must amend the plan whenever changes in operating plans or facility design, or events which occur during the active life of the facility or during the post-closure period, affect the post-closure plan. This plan must be amended whenever there is a change in the expected year of closure.

(c) When a permit modification is requested during the active life of the facility to authorize a change in operating plans or facility design, modification of the post-closure plan must be requested at the same time. In all other cases, the request for modification of the post-closure plan must be made within sixty (60) days after the change in operating plans or facility design or the events which affect the post-closure plan occur.

Section 8.07 Use and Management of Containers.

8.07.01 Applicability.

The regulations in this section apply to owners and operators of all hazardous waste management facilities that store containers of hazardous waste, except as Section 8.01 provides otherwise. [Comment: Under Section 3.01.06 and 3.04.04(c) if a hazardous waste is emptied from a container the residue remaining in the

(e) The owner or operator and a registered professional engineer must submit to the Chief a certification that the facility has been designed and constructed in compliance with Section 8.09.04 prior to placement of wastes into the impoundment.

8.09.05 Inspections and Testing

(a) During construction or installation, liner systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, and foreign materials).

(1) Soil based and admixed liner systems must be tested for compaction density, moisture content, permeability, and inspected for imperfections including lenses, cracks, channels, root holes or other structural non-conformities that may cause an increase in the permeability of the liner; and other structural non-conformities that may cause an increase in the permeability of the liner; and

(2) Manufactured liner materials (e.g., membranes, sheets, and coatings) must be inspected to ensure tight seams and joints and the absence of tears or blisters.

(3) Upon discovery of such imperfections, the repair of the liner must be completed prior to placement of the wastes into the impoundment.

(4) The leachate detection, collection and removal system must be inspected for cracks, breaks, loose seams and joints, clogging, areas of structural stress, and any other faults or

(b) Whenever there is a positive indication of an unplanned sudden drop in liquid level in the impoundment, or active leakage through the dike, the impoundment must be removed from service.

(c) If the surface impoundment must be removed from service as required by (b) of this section, the owner or operator must:

(1) Immediately shut off the flow or stop the addition of wastes into the impoundment.

(2) Immediately contain any surface leakage which has occurred or is occurring and cause such leak(s) to be stopped.

(3) Immediately notify the Chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074.

(4) If all leaks specified in (b) of this section (including leaks not evident at the surface) cannot be stopped by any other means, empty the impoundment.

(5) Within 15 days after detecting the leak, submit to the Chief a written report of the problem and corrective measures taken.

(d) As part of the contingency plan required in Section 8.04, the owner or operator must specify:

(1) A procedure for complying with the requirements of (c) of this section; and

the leachate must be managed as a hazardous waste in accordance with all regulations governing the generation of such wastes.

(3) If it is determined that the liner(s) is leaking, the owner or operator must begin the remedial actions set forth in the contingency plan specified in the permit which shall at least include plans for repairing the breach in the liner and preventing the continued migration of the leachate.

Section 8.10 Waste Piles

8.10.01 Applicability.

(a) The regulations in this section apply to owners and operators of facilities that store or treat hazardous waste in piles, except as Section 8.01 provides otherwise.

(b) Waste piles closed with wastes left in place must comply with the requirements for landfills under Section 8.11.

(c) Owners and operators of waste piles used to store or treat only hazardous wastes that do not contain free liquids are not subject to regulation under Sections 8.10.02, 8.10.03, 8.10.04, 8.10.05, 8.10.06 and 8.13 with respect to these piles, provided that:

(1) Liquids or materials containing free liquids are not placed in the pile;

(f) The Chief will specify in the permit all conditions for design and operation practices that are necessary to ensure that the requirements of this section are satisfied.

(g) A liner system must be protected from plant growth which could puncture any component of the system.

(h) A liner system must have a containment life equal to or greater than the life of the pile.

8.10.03 Specific Requirements for Double Lined Waste Piles.

(a) The owner or operator of a double lined waste pile must meet the following:

(1) The pile (including its underlying liners) must be located at least three (3) feet above the seasonal high water table.

(2) The pile must be underlain by two liners which are designed and constructed in a manner that prevents the migration of liquids into or out of the space between the liners. Both liners must meet all specifications in Section 8.10.02(a)(1).

(3) A leak detection system must be designed, constructed, maintained, and operated between the liners to detect any migration of liquids into the space between the liners.

(4) The pile must have a leachate collection and removal system above the top liner that is designed, constructed, maintained and operated in accordance with Section8.10.02(a)(2).

(b) If liquid leaks into the leak detection system, the owner or operator must:

(1) Immediately notify the Chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074;

(2) Within 15 days after detecting the leak, submit to the Chief a written report of the problem and corrective measures taken; and

(3) Comply with the provisions of Section 8.10.06.

8.10.04 Specific Requirements for Single Lined Waste Piles: Inspection of Liners.

(a) The owner or operator of a single lined pile must meet the following conditions:

(1) The wastes in the pile must be removed periodically, and the liner must be inspected for deterioration, cracks, or other conditions that may result in leaks. The frequency of inspection will be specified in the inspection plan required in Section 8.02.06 and must be based on the potential for the liner (base) to crack or otherwise deteriorate under the conditions of operation (e.g., waste type, rainfall, loading rates, and sub-surface stability).

(2) The liner must be of sufficient strength and thickness to prevent failure due to puncture, cracking, tearing, or other physical damage from equipment used to place waste in or on the pile or to clean and expose the liner surface for inspection.

(3) The requirements listed in Section 8.10.02 (a) and Section 8.10.02(b).

(b) If deterioration, a crack, or other condition is identified that is causing or could cause a leak, the owner or operator must:

(1) Immediately notify the Chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074.

(2) Within 15 days after detecting the leak, submit to the Chief a written report of the problem and corrective measures taken; and

(3) Comply with the provisions of Section 8.10.06.

8.10.05 Monitoring and Inspection

(a) During and immediately after construction or installation, liner and cover systems must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, and foreign materials).

(1) Soil based and admixed liners must be tested for compaction density, moisture content, permeability, and inspected for imperfections including lenses, cracks, channels, root holes or other structural nonconformities that may cause an increase in the permeability of the liner; and

(2) Synthetic liner materials (e.g., membranes, sheets, and coatings) must be inspected to ensure tight seams and joints and the absence of tears or blisters.

(3) Upon discovery of any imperfections, the repair of the liner must be completed prior to placement of the wastes into the liner.

(4) The results of such tests and repairs must be certified in writing by the owner or operator and a registered professional engineer.

on observation or test samples of the liner materials.

(b) Whenever there is a positive indication of a failure of the liner system, the waste pile must be removed from service and the leachate treated by a method approved by the Chief. Indications of positive failure of the liner system include waste detected in the leachate detection system (where applicable), or a breach (e.g., a hole, tear, crack, or separation) in the base.

(c) If the waste pile must be removed from service as required by (b) of this section, the owner or operator must:

(1) Immediately stop adding waste to the pile.

(2) Immediately contain any leakage which has or is occurring and treat the leachate by a method approved by the Chief.

(3) Immediately cause the leak to be stopped.

(4) If the leak cannot be stopped by any other means, remove the waste from the base.

(d) As part of the contingency plan required in Section 8.04 the owner or operator must specify:

(1) A procedure for complying with the requirements of (c) of this section; and

(2) A liner system evaluation and repair plan describing testing and monitoring techniques; procedures to be followed to evaluate the integrity of the liner system in the event of a possible failure; a schedule of actions to be taken in the event of a possible failure; and a description of the repair techniques to be used in the event of leakage due to liner

system failure or deterioration which does not require the waste pile to be removed from service.

(e) No waste pile that has been removed from service in accordance with (b) of this section may be restored to service unless:

(1) The liner system has been repaired; and

(2) The liner system has been certified by a registered professional engineer as meeting the design specifications approved in the permit and that to the best of his knowledge and opinion the leak has been stopped.

(f) A waste pile that has been removed from service in accordance with (b) of this section and that is not being repaired must be closed in accordance with Section 8.10.09.

(g) All wastes removed from the waste pile must be managed as a hazardous waste in compliance with all applicable requirements. Any point source discharge to waters of the State is subject to the requirements of the Water Pollution Control Act and all regulations promulgated thereunder.

8.10.07 Special Requirements for Ignitable or Reactive Waste.

(a) Ignitable or reactive waste must not be placed in a pile unless the waste is treated, rendered, or mixed before or immediately after placement in the pile so that:

(1) Addition of the waste to an existing pile results in the waste or mixture no longer meeting the definition of ignitable or reactive waste and complies with Section 8.02.08; or

(b) At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with these regulations that the waste removed from the waste pile is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements listed in Sections 8.02.02; 8.02.03; 8.02.04; 8.02.05; 8.02.06; 8.02.07; and 8.02.08.

(j) If the owner or operator determines that the corrective action program being implemented under Section 8.13.09 is insufficient for causing cessation of hazardous waste constituents migration, then the unit must be closed. However, if it is determined that the corrective action will adequately arrest and remove the contamination, the owner may choose one of the four options which will become part of the conditions of the permit:

(1) Retrofit the unit with liners; in accordance with Section 8.09.04;

(2) Stop the leak;

(3) Continue the operation of the unit, (while concurrently developing/implementing an alternate treatment, storage or disposal method), for a period of five years at which time the unit must be closed; or

(4) Continue the operation of the unit provided a demonstration can be made and approved by the Chief that no adverse impact to human health or to the environment will result from the continued operation of the unit during the active life and closure and post closure period, provided that the facility continues to comply with an approved corrective action program. Such demonstration must include and discuss the following:

(i) Potential adverse effects on ground water quality, considering:

(A) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The quantity of ground water and the direction of ground water flow;

(D) The proximity and withdrawal rates of ground water users;

(E) The current and future uses of ground water in the area;

(F) The existing quality of ground water, including other sources of contamination and their cu[illegible]ve impact on the ground water quality;

(G) The potential for health risks caused by human exposure to waste constituents;

(H) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(I) The persistence and permanence of the potential adverse effects; and

(ii) Potential adverse effects on hydraulically-connected surface water quality, considering:

(A) The volume and physical and chemical characteristics of the waste in the regulated unit;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The quantity and quality of ground water, and the direction of ground water flow;

(D) The patterns of rainfall in the region;

(E) The proximity of the regulated unit to surface waters;

(F) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(G) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

(H) The potential for health risks caused by human exposure to waste constituents;

(I) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(J) The persistence and permanence of the potential adverse effects.

(iii) In making any determination under paragraph (4) of this section concerning the use of ground water in the area around the faiclity, the Chief will consider any identification of underground sources of drinking water and exempted aquifers made under the West Virginia Administrative Regulations of the State Water Resources Board Chapter 20, Article 5A, Series IX (1983).

(i) The owner or operator, in order to qualify for the exemption in (i) above, must demonstrate that statistically significant increases of hazardous constituents do not occur in the groundwater or surface water during its active life and the [illegible]osure period.

(ii) If statistically significant increases of hazardous constituents are detected as outlined in Section 8.13.08(d) in the groundwater beneath the facility (including the regulated unit) the owner or operator must comply with the corrective action outlined in Section 8.13.09 (if groundwater contamination has been determined.

The liner will be tested for compatibility with the waste and leachate expected to be generated to determine possible effects on the liner materials prior to installation.

(ii) Placed upon a foundation or base capable of providing support to the liners and resistance to pressure gradients above and below the liners to prevent failure of the liners due to settlement, compression, or uplift; and

(iii) Installed to cover all surrounding earth likely to be in contact with the waste and leachate; and

(iv) Constructed to be free of lenses, cracks, channels, holes, or other structural nonuniformities; and

(v) Soil-based and admixed liners must be at least 90 cm (3 feet) thick with a maximum saturated hydraulic conductivity of not more than 1×10^{-7} cm/sec throughout the total thickness and area of the liner.

(2) A leachate collection and removal system immediately above the primary liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The Chief will specify conditions for design and operation in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

(i) Constructed of materials that are:

(A) Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

(ii) Must be overlain by a graded granular material assuring a hydraulic conductivity of 1×10^{-3} cm/sec placed with a minimum slope of 2%.

(iii) Designed and operated to function without clogging through the operating life and scheduled closure and post closure period of the landfill.

(3) A leachate detection system must be designed, constructed, maintained and operated between the liners to detect any migration of liquid into the space between the liners.

(b) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year 24-hour storm.

(c) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control

at least the water volume resulting from a 25-year, 24-hour storm.

(d) Collection and holding facilities (e.g., tanks, or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(e) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind dispersal.

(f) The landfill (including the base of the lower most liner components) must be located at a minimum of 3 feet above the highest known seasonal water table elevation. This 3 foot distance may be achieved by elevating the waste disposal facility artifically or by the non-mechanical lowering of the water table at the location. However, no mechanical means (i.e. - pumps) may be used to lower the water table. All plans for alteration of the water level must be approved by the Chief and will become a part of the hazardous waste management permit.

(g) The Chief will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(h) The design specification, construction and installation practices and operating conditions will be certified by the owner or operator and a registered professional engineer.

(i) Existing portions of landfills are exempt from the requirements of Sections 8.11.02(a); 8.11.03(a), (c); 8.11.04; 8.11.11(c)(2), (c)(3), and (d) provided that paragraph (i) is complied with.

8.11.03 Monitoring, Testing and Inspection.

(a) During and immediately after construction or installation, liners must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials).

(1) Synthetic liners and covers (e.g., membranes, sheets or coatings) must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(2) Soil-based and admixed liners and covers must be tested for compaction density, moisture content, and permeability and inspected for imperfections including lenses, cracks, channels, root holes, animal borings or other structural nonuniformities that may cause an increase in the permeability of the liner or cover.

(3) Upon discovery of any imperfections, damage, or nonuniformities, the repair of the liner must be completed prior to placement of the wastes into the landfill.

(4) Any repair to the liner must be certified by a registered professional engineer.

(b) While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems.

(2) The presence of liquids in leak detection systems where installed to comply with Section 8.11.02.

(3) Proper functioning of wind dispersal control systems, where present; and

(4) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(c) If liquid leaks into the leachate detection system, the owner or operator must:

(1) Immediately notify the Chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074 and follow with written notification within 7 days of detecting the leak.

(2) Within 15 days after detecting leak, submit to the Chief a written report of the problem and corrective measures taken.

(3) Within a period of time specified in the permit, remove accumulated liquid, repair or replace the liner which is leaking to prevent the migration of liquids through the liner, and obtain a certification from a registered professional engineer that, to the best of his knowledge and opinion, the leak has been stopped.

(4) File a report including all technical drawings and information detailing the repair of liner replacement work accomplished immediately after repairs are completed.

(d) The Chief will specify in the permit all conditions for design and operation that are necessary to ensure that the requirements of this section are satisfied.

8.11.04 Liner System Repairs, Contingency Plans.

(a) Whenever there is any indication of a possible failure

(5) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

(6) Protect and maintain surveyed benchmarks or reference points used in complying with Section 8.11.10.

(d) During the post closure period, if liquid leaks into a leachate detection system installed under Section 8.11.02, the owner or operator must:

(1) Immediately notify the Chief through the Division of Water Resources' Emergency Notification Number 1-800-642-3074 followed with written notification within 7 days of detecting the leak.

(2) Within 15 days after detecting the leak, submit to the Chief a written report of the problem and corrective measures taken.

(3) Begin remedial actions set forth in the contingency plan specified in the permit which shall at least include removing the accumulated liquid and begin corrective action to stop any leak and minimize the potential of possible groundwater contamination by some means within the time period prescribed.

(4) Manage as hazardous waste in accordance with all regulations governing the generation of such waste, the liquid removed from the detection system unless the owner or operator can demonstrate otherwise.

(5) Obtain a certification from a registered professional engineer that to the best of his knowledge and opinion, the leak has been stopped and that all necessary work and repairs has been completed to prevent or minimize any potential for groundwater contamination.

8.11.12 [Reserved]

8.11.13 Special Requirements for Ignitable or Reactive Waste.

(a) Except as provided in paragraph (b) of this section, and in Section 8.11.17, ignitable or reactive waste must not be placed in a landfill, unless the waste is treated, rendered, or mixed before or immediately after placement in a landfill so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Section 3.03.02 or Section 3.03.04 of these regulations; and

(2) Section 8.02.08(b) is complied with.

(b) Non liquid ignitable wastes in containers may be landfilled without meeting the requirements of paragraph (a) of this section, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered after placement with soil or other non-combustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

8.11.14 Special Requirements for Incompatible Wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix I of this section for examples) must not be placed in the same landfill cell, unless Section 8.02.08(b) is complied

(b) The owner or operator must design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.

(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-year 24-hour storm.

(d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

(f) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

(g) The owner or operator must manage the unit to control the wind dispersal of aerosols/vapors during waste application.

(h) The owner or operator must inspect the unit weekly and after any precipitation event to detect evidence of:

(1) Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and

(2) Improper functioning of wind dispersal control measures.

[8.12.05 - 8.12.0 eserved]

8.12.10 Record Keeping.

The owner or operator must include hazardous waste application dates and rates in the operating record required under Section 8.05.04.

8.12.11 Closure and Post Closure care.

(a) During the closure period the owner or operator must:

(1) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under Section 8.12.04(a), except to the extent such measures are inconsistent with paragraph (a)(8) of this section.

(2) Continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under Section 8.12.04(b);

(3) Maintain the run-on control system required under Section 8.12.04(c);

(4) Maintain the run-off management system required under Section 8.12.04(d);

(5) Control wind dispersal of hazardous waste if required under Section 8.12.04(f);

(6) Continue to comply with any prohibitions or conditions concerning growth of food chain crops under Section 8.12.07.

(7) Continue unsaturated zone monitoring in compliance with Section 8.12.09, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and

(6) Continue to comply with any prohibitions or conditions concerning growth of food chain crops under Section 8.12.07; and

(7) Continue unsaturated zone monitoring in compliance with § 8.12.09 except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.

(d) The owner or operator is not subject to regulation under paragraphs (a)((8) and (c) of this section if the Chief finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in paragraph (d)(3) of this section. The owner or operator may submit such a demonstration to the Chief or at any time during the closure or post closure care periods. For the purposes of this paragraph:

(1) The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under Section 8.12.02(b).

(i) Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

(ii) The owner or operator must express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of

statistically significant increases under paragraph (d)(3) of this section.

(2) In taking samples used in the determination of background and treatment zone values, the owner or operator must take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical make-up of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.

(3) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent in the treatment zone to the background value for that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The owner or operator must use a statistical procedure that:

(i) Is appropriate for the distribution of the data used to establish background values; and

(ii) Provides a reasonable balance between the probability of falsely identifying hazardous constituent presence in the treatment zone and the probability of failing to identify real presence in the treatment zone.

(e) The owner or operator is not subject to regulation under Section 8.13 of these regulations if the Chief finds that the owner or operator satisfies paragraph (d) of this section and if

Section 8.13 Groundwater Protection

8.13.01 Applicability.

(a) Except as provided in paragraph (b) of this section, the regulations in Section 8.13 apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, or landfills. The owner or operator must satisfy the requirements of Section 8.13 for all wastes (or constituents thereof) contained in any such waste management unit at the facility that receives hazardous waste after the effective date of Section 8.13 (hereinafter referred to as a "regulated unit"). Any waste or waste constituent migrating beyond the waste management area under Section 8.13.05(b) is assumed to originate from a regulated unit unless the Chief finds that such waste or waste constituent originated from another source.

(b) The owner or operator is not subject to regulation under Section 8.13 if:

(1) He is exempted under Section 8.01;

(2) He designs and operates a pile in compliance with Section 8.10.01(c).

(3) The Chief finds, pursuant to Section 8.12.11(d), that the treatment zone of a land treatment unit does not contain concentrations of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of Section 8.12.09 has not shown a statistically significant increase

in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under this paragraph can only relieve an owner or operator of responsibility to meet the requirements of Section 8.13 during the post closure care period.

(c) The regulations under Section 8.13 apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in Section 8.13:

(1) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

(2) Apply during the post closure period under Section 8.06.07 in all other cases.

8.13.02 Required Programs.

(a) Owners and operators subject to Section 8.13 must conduct a monitoring and corrective action program as follows:

(1) Whenever the Water Resources Board's Groundwater Protection Standard Regulation Series VII, Section 1 is exceeded, the owner or operator must institute a corrective action program under Section 8.13.09;

(2) In all other cases, the owner or operator must institute a groundwater monitoring program under Section 8.13.08.

(b) In order to prevent potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken, the owner or

(i) Sample collection;

(ii) Sample preservation and shipment;

(iii) Analytical procedures; and

(iv) Chain of custody control.

(4) The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents in groundwater samples. Recommended methods include those outlined in 40 C.F.R. Part 136. The proposed sampling and analytical methods must be approved by the Chief and upon approval, become a condition of the hazardous waste management permit.

(5) The owner or operator must determine the groundwater flow rate and direction in the uppermost aquifer at least annually and determine transmissibility during initial sampling or initial well development.

(6) The groundwater monitoring program must include a determination of the static water level and groundwater surface elevation each time groundwater is sampled.

(7) If the owner or operator determines that the groundwater monitoring program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(8) The owner or operator must assur that monitoring and corrective action measures necessary to achieve compliance with the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 1 are taken during the term of the permit.

(9) The groundwater monitoring wells must be sampled to allow detection of density separated hazardous constituents or monitoring parameters which may escape from the regulated unit.

(b) Establishing water quality concentrations:

(1) The groundwater monitoring program must establish background groundwater quality concentrations for each of the hazardous constituents or monitoring parameters specified in the permit.

(i) The background concentration for a hazardous constituent must be based on data from upgradient wells.

(ii) Samples shall be obtained from upgradient well(s) each time downgradient wells are sampled. Downgradient concentrations of hazardous constituents or monitoring parameters shall be compared with upgradient concentrations to determine whether the upgradient background concentrations have been exceeded.

(iii) In comparing concentrations of hazardous constituents or monitoring parameters at the point of compliance with background concentrations, the owner or operator shall use the background concentration values for the current quarter. At least four (4) background concentration values collected as required under (b)(1)(v) of this section must be used when utilizing the statistical test outlined in Section 8.13.08(c)

(iv) The owner or operator may propose to the Chief to use background concentrations of hazardous constituents or monitoring parameters based on sampling of wells that are not upgradient from the waste management area where sampling at other wells will provide values that are representative or more representative than those provided by the upgradient wells or in situations where the owner or operator cannot define or locate an upgradient well due to adverse hydrogeologic conditions. The owner or operator must submit the details of such a proposal to the Chief for his approval. The reasons for the [illegible]al to utilize wells that are not upgradient must be included with the proposal.

(v) In developing the data base used to determine a background concentration for each monitoring parameter or hazardous constituent, the owner or operator must take a minimum of four samples from each well used to determine background groundwater quality, each time the system is sampled.

(2) The owner or operator must determine the concentration of each hazardous constituent and monitoring parameter at each monitoring well at the point of compliance and each upgradient well at least quarterly during the compliance period. Intervals between sampling and the frequency of sampling will be specified in the permit. The owner or operator must express the concentrations of each hazardous constituent and monitoring parameter

at each monitoring well in a form necessary for the determination of statistically significant increases under (c) of this section.

(c) Statistical method:

The owner or operator must use the following statistical procedure in determining whether the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 1 has been exceeded:

(1) If, in a groundwater monitoring program, the concentration of a hazardous constituent or monitoring parameter at the point of compliance is to be compared to it's respective background concentration, and both the background concentration data set and the point of compliance monitoring well concentration date set have been determined to be normally distributed by an appropriate method approved by the Chief.

(i) The owner or operator must take at least 4 samples at each well at the point of compliance and determine whether crease between the mean concentration of each constituent at each well (using all samples taken) and the background concentration value for the constituent is significant at the 0.05 level using the Cochran's Approximattion to the Behren-Fisher Student's t-test as described in Appendix II. If the test indicates that the increase is significant, the owner or operator must repeat the same procedure (with at least the same number of samples as used in the first

test) using fresh samples from the monitoring well. If this second round of analyses indicates that the increase is significant, the owner or operator must conclude that a statistically significant increase has occurred; or

(ii) The owner or operator may request in writing for authorization to use an equivalent statistical procedure for determining whether a statistically significant increase has occurred. The Chief will specify such a procedure in the permit if he finds that the alternative procedure reasonably balances the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit in a manner that is comparable to that of the statistical procedure described in paragraph (c)(1)(i) of this section. This alternative procedure must be appropriate for the distribution of the data.

(2) In all other situations in a groundwater monitoring program the owner or operator must use a statistical procedure which provides a reasonable balance of the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit. The Mann-Whitney Test (Appendix III) is recommended. The owner or operator must supply to the Chief a written request to use such a statistical procedure, completely describing the details of the procedure and the reasons for using it.

(3) The Chief will approve statistical procedures in specific cases where he finds the procedure:

background concentration value for that parameter or constituent, according to the statistical procedure specified under Section 8.13.08(c).

(ii) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well at the point of compliance. This will be done within the time period after completion of sampling specified in the permit. The Chief will specify that time period, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

(2) If the owner or operator determines, pursuant to paragraph (d)(1) of this section, that there is a statistically significant increase in the concentrations of any monitoring parameter or hazardous constituents specified pursuant to paragraph (a)(1) of this section at any monitoring well at the point of compliance, he must:

(i) Notify the Chief of this finding in writing within seven (7) days. The notification must indicate what monitoring parameter(s) or hazardous constituent(s) have shown statistically significant increases;

(ii) Immediately sample the ground water in all monitoring wells and determine the concentration of all constituents identified in Appendix VIII of Section 3 of these regulations that are present in ground water;

(iii) Establish a background value for each Appendix VIII constituent that has been found at the compliance point under paragraph (d)(2)(ii) of this section as follows:

(A) The owner or operator must comply with Section 8.13.08(b) in developing the data base used to determine background values;

(B) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under Section 8.13.08(c); and

(C) In taking samples used in the determination of background values, the owner or operator must use a groundwater monitoring system that complies with Section 8.13.07(a)(1)(b)(c), and (d);

(iv) Within 60 days submit to the Chief a written reporting including the following information:

(A) Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of Section 8.13.09;

(B) Any proposed changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of Section 8.13.09.

(C) An identification of the concentration of any Appendix VIII constituents found in the groundwater at each monitoring well at the compliance point; and

(iii) If the owner or operator determines, pursuant to paragraph (d)(1) of this section, that there is a statistically significant increase in the concentrations of hazardous constituents specified pursuant to paragraph (a)(1) of this section at any monitoring well at the point of compliance (thereby violating the Water Resources Board's Groundwater Protection Standard Regulation, Series VIII, Section 1), he must comply with the provisions of the corrective action program specified in the permit, unless the Chief determines that a demonstration made under paragraph (d)(3) of this section successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from an error in sampling, analysis or evaluation.

(3) If the owner or operator determines, pursuant to paragraph (d)(1) of this section, that the Water Resources Board's Groundwater Protection Standard Regulation, Series VII, Section 1 is being exceeded at any monitoring well at the point of compliance, he may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, anaylsis or evaluation. In making a demonstration under this paragraph, the owner or operator must:

present in the land treated waste, a description of how the requirements of Section 8.12.07 will be complied with;

(6) A description of the vegetative cover to be applied to closed portions of the facility, and a plan for maintaining such cover during the post closure period, as required under Section 8.12.11. This information should be included in the closure plan and, where applicable, the post closure plan submitted under paragraph (a)( ) of this section;

(7) If ignitable or reactive wastes will be placed in or on the treatment zone, an explanation of how the requirements of Section 8.12.12 will be complied with;

(8) If incompatible wastes, or incompatible wastes and materials, will be placed in or on the same treatment zone, an explanation of how Section 8.12.13 will be complied with.

(f) For facilities that dispose of hazardous waste in landfills, except as othewise provided in Section 8.01:

(1) A list of the hazardous wastes placed or to be placed in each landfill or landfill cell;

(2) Detailed plans and an engineering report describing how the landfill is or will be designed, constructed, operated, and maintained to comply with the requirements of Section 8.11.04. This submission must address the following items as specified in Section 8.11.04:

(i) The liner system and leachate collection and removal system;

(ii) Control of run-on;

(iii) Control of run-off;

(iv) Management of collection and holding facilities

(a) The portion of the applicant's environmental analysis dealing with environmental assessments shall contain, but not be limited to:

(1) The potential impact of the method and route of transportation of hazardous waste to the site and the potential impact of the establishment and operation of such facilities on air and water quality, existing land use, transportation and natural resources in the area affected by such facilities;

(2) A description of the expected effect of such facilities; and

(3) Recommendations for minimizing any adverse impact.

(b) The portion of the applicant's environmental analysis dealing with technical and economic assessments shall contain, but not be limited to:

(1) Detailed descriptions of the proposed site and facility, including site location and boundaries and facility purpose, type, size, capacity and location on the site and estimates of the cost and charges to be made for material accepted, if any;

(2) Provisions for managing the site following cessation of operation of the facility; and

(3) Qualifications of owner and operator, including a description of the applicant's prior experience in hazardous waste management operations.

11.05.04 Additional Information.

In addition to the information required in Sections 11.05.01 through 11.05.03, the Chief may request that the applicant submit such other information as may be necessary for the Chief to carry out his duties under the Hazardous Waste Management Act.

Section 11.09 Emergency Permits.

Notwithstanding any other provision of Section 11.00, in the event the Chief finds an imminent and substantial endangerment to human health or the environment, the Chief may issue a temporary emergency permit to a facility to allow treatment, storage or disposal of hazardous waste at a non-permitted facility, or hazardous waste not covered by the permit for a facility with an effective permit. This emergency permit:

(a) May be oral or written. If oral, it shall be followed within five (5) days by a written emergency permit.

(b) Shall not exceed ninety (90) days in duration.

(c) Shall clearly specify the hazardous wastes to be received, and the manner and location of their treatment, storage, or disposal.

(d) May be terminated by the Chief at any time without prior notice if it is determined that termination is appropriate to protect human health or the environment.

(e) Shall be accompanied by a public notice as required by these regulations including:

(1) Name and location of the permitted hazardous waste management facility.

(2) A brief description of the wastes involved.

(3) A brief description of the action authorized and reasons for authorizing.

(4) Duration of the emergency permit.

(5) Name and address of the office granting the emergency authorization.

(f) Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of these regulations.

the circumstances. A written submission shall also be provided within five (5) days. The written submission shall contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance 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 non-compliance.

The following shall also be reported immediately:

(a) Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

(b) Any information of a release or discharge of hazardous waste, or a fire or explosion from a hazardous waste management facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

(1) Name, address and telephone number of the owner or operator.

(2) Name, address and telephone number of the facility.

(3) Date, time and type of incident.

(4) Name and quantity of material(s) involved.

(5) The extent of injuries, if any.

(6) An assessment of actual or potential hazards to the environment and human health outside the facility; and,

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

(h) Other non-compliance.

The permittee shall report all instances of non-compliance not reported under Sections 11.10.12(a), (e), (f) and (g) above, at the time monitoring reports are submitted. The report shall contain the information listed in Section 11.10.12(g).

(i) Other information.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Chief,

applicable requirements of the Hazardous Waste Management Act, these regulations, and any applicable statutory or regulatory requirement that takes effect prior to the final administrative disposition of a permit.

(b) New or reissued permits, and to the extent allowed under Section 11.18, modified or revoked and reissued permits, shall incorporate each of the applicable requirements in these regulations.

(c) All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements shall be given in the permit.

Section 11.12 Duration of Permits.

(a) Hazardous Waste Management Permits shall be effective for a fixed term not to exceed ten (10) years.

(b) Except as provided in Section 11.12(c), the term of a permit shall not be extended by modification beyond the maximum duration specified in this section.

(c) The conditions of an expired permit shall continue in force until the effective date of a new permit if:

(1) The permittee has submitted a timely application under Section 11.05 which is a complete application for a new permit; and

(2) The Chief, through no fault of the permittee, does not issued a new permit with an effective date on or before the expiration date of the previous permit.

(d) Permits continued under subsection (c) remain fully effective and enforceable. When the permittee is not in compliance with the conditions of the expiring or expired permit, the Chief may choose to do any or all of the following:

(e) When the permittee has filed a request under Section 13 for a variance to the level of financial responsibility or when the Chief demonstrates under Section 13 that an upward adjustment of the level of financial responsibility is required.

11.18.02 Causes for Modification or Revocation and Reissuance.

The following are causes to modify or, alternatively, revoke and reissue a permit:

(a) Cause exists for revocation under Section 11.19, and the Chief determines that modification or revocation and reissuance is appropriate.

(b) The Chief has received notification of a proposed transfer of the permit.

11.18.03 Facility Siting.

The suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that an endangerment to human health or the environment exists which was unknown at the time of permit issuance.

Section 11.19 Termination, Revocation or Suspension of Permits.

(a) The following are causes for revocation or suspension of a permit during its term, or for denying a permit renewal application:

(1) Non-compliance by the permittee with any condition of the permit; or

(2) The permittee's failure in the application or during the

(f) Change estimates of maximum inventory under Section 8.06.03.

(g) Changes in ownership.

(h) Changes in estimates of expected year of closure or schedules of final closure.

Section 11.21 Draft Permits.

(a) Once an application is complete, the Chief shall tentatively decide whether to prepare a draft permit or to deny the application.

(b) If the Chief decides to prepare a draft permit, a draft permit shall be prepared that contains the following information:

(1) All conditions under Sections 11.10 and 11.11.

(2) All compliance schedules under Section 11.15.

(3) All monitoring requirements under Section 11.16.

(4) Standards for treatment, storage, and disposal and other permit conditions under Section 11.00.

Section 11.22 Fact Sheet

(a) A fact sheet shall be prepared by the Chief for every draft permit for each hazardous waste management facility or activity. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. The Chief shall send this fact sheet to the applicant and, on request, to any other person.

(b) The fact sheet shall include, when applicable:

(1) A brief description of the type of facility or activity which is the subject of the draft permit.

(2) The type and quantity of wastes, fluids, or pollutants which are

Section 13.00 Financial Requirements

The Director hereby adopts and incorporates by reference 40 C.F.R. Parts 264 and 265, Subparts H, as published in the Code of Federal Regulations on July 1, 1982 with the following modifications: Sections 264.143(f), §265.143(e), §264.145(f), §265.145(e), and §264.147(f), §265.147(f) shall be amended by the addition of the following paragraph:

"Notwithstanding the above, the Director may disallow the use of this test on the basis of information that the owner or operator has violated or is in violation of any state or federal law or regulation pertaining to environmental protection. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance."

Section 264.149, §265.149, §264.150 and §265.150 shall be deleted.

Wherever the term Administrator or Regional Administrator is used, the term shall have the meaning of the Director of the Department of Natural Resources.

Wherever the term Environmental Protection Agency or EPA is used, the term shall have the meaning of the West Virginia Department of Natural Resources.

WEST VIRGINIA ADMINISTRATIVE REGULATIONS
Department of Natural Resources
Chapter 20-5D
Series XVI
1981

Subject: Rules and regulations pertaining to the design, placement construction, enlargement, alteration, repair or removal of dams, to include application for approval, hazard potential, subsurface and geologic investigation, laboratory investigation, hydrology, runoff control, hydraulics, slope stability and protection, seepage analysis, settlement analysis, foundation analysis, liquefaction potential, quality control, maintenance and inspection.

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Section 1. General.

1.01. Scope. These regulations establish general and specific rules for the design, placement, construction, enlargement, alteration, repair or removal of dams, to include application for approval, hazard potential, subsurface and geologic investigation, laboratory investigation, hydrology, runoff control, hydraulics, slope stability and protection, seepage analysis, settlement analysis, foundation analysis, liquefaction potential, quality control, maintenance and inspection.

1.02. Authority. These regulations are issued under the authority of Article 5D, Chapter 20, Code of West Virginia.

1.03. Filing Date. These regulations were promulgated on the 10th day of April, 1981, filed on the 14th day of December, 1981, in the Secretary of State's office, and were refiled December 30, 1982, to become effective January 1, 1983, and shall remain in effect unless otherwise amended or new regulations are issued by the Director.

SECTION 2. DEFINITIONS: UNLESS THE CONTEXT IN WHICH USED CLEARLY REQUIRES A DIFFERENT MEANING, AS USED IN THESE REGULATIONS OR AS REFERRED TO IN ARTICLE 5D, CHAPTER 20, CODE OF WEST VIRGINIA, THESE DEFINITIONS APPLY TO THE FOLLOWING DAM CONTROL REGULATIONS:

2.01. Appurtenances means any ancillary part of the dam and/or reservoir system which contributes to the operation or construction of the dam.

2.02. Channel Protection means any measures taken to prevent or control erosion, cavitation, or other destructive processes in channels such as diversion ditches and spillways.

2.03. Dangerous Condition means any structural, or hydraulic condition of a dam or its appurtenances which may lead to (1) failure of the dam and possible loss of human life or substantial loss of property, or (2) harm to the public health or welfare, or (3) significant harm to the environment.

2.04. Design Storm means predicted precipitation of given intensity, frequency, and duration based on National Weather Service data.

2.05. Diversion Ditch means a designed channel constructed for the purpose of collecting and transmitting surface runoff resulting from a given design storm.

2.06. Embankment means a man-made deposit of earth or waste materials, usually exhibiting at least one sloping face.

2.07. Emergency Spillway means a hydraulic structure designed to discharge water in excess of that which an impoundment is designed to store or which cannot be passed through a principal spillway.

2.08. Engineer means a registered professional engineer in accordance with Chapter 30, Article 13 of the Code of West Virginia (W.Va. State Registration Law for Professional Engineers).

2.09. Freeboard means the vertical distance between the lowest point of the crest of the embankment of a dam and the reservoir water surface.

2.10. Geotechnical Engineering means the application of soil mechanics, rock mechanics, and geology to the solution of problems involving engineering structures and their interaction with surrounding earth materials.

2.11. Hazard Potential means a classification rating assigned to a structure based on engineering evaluations and judgement for predicting the danger to human life, property and environment should a failure of the structure occur.

2.12. Highway, Primary means those roadways which are designated as interstates, U.S. numbered highways or West Virginia numbered highways.

2.13. Highway, Secondary means those roadways which are designated by the West Virginia Department of Highways as county numbered routes.

2.14. Hydraulics means the study of the physical behavior of liquids, especially water, in natural or man-made systems or processes.

2.15. Hydrologic Analysis means a determination, using accepted engineering methods, to establish surface water runoff for a specified design storm.

2.16. Hydrology means the science that deals with the occurrence and behavior of water in the atmosphere, on the ground and underground.

2.17. Impoundment means a basin constructed for the retention of water, sediment or waste.

2.18. Natural Drainway means any natural water course which may carry water to the tributaries and rivers of the watershed.

2.19. P100 means the rainfall amount based on a 100 year frequency, 6-hour duration rainfall event.

2.20. PMP means the probable maximum precipitation.

2.21. Principal Spillway means the hydraulic structure designed to discharge water stored between normal pool and the emergency spillway invert elevations.

2.21. Probable Maximum Precipitation means the depth-duration-area rainfall for a particular area that represents the maximizing of the most critical meteorological conditions that are considered possible of occurrence.

2.22. Safety Factor means the ratio of the available shear strength to the developed shear stress, or ratio of the sum of the resisting forces to the sum of the loading or driving forces, as determined by accepted engineering practices.

2.23. Sediment means solid material, either mineral or organic, resulting from the works of man that has been moved from its site of origin by water.

2.24. Serious Problem means a situation, which left uncorrected, may lead to a dangerous condition.

2.25. Site means the actual or planned location of a dam including, but not limited to, appurtenant works, reservoir area, diversion ditches, sediment control facilities, and borrow areas.

2.26 Subsidence means a sinking, collapsing or cracking of a portion of the earth's surface resulting from the presence of a void or voids beneath the surface.

SECTION 3. REQUIREMENTS

3A. Requirements for a Certificate of Approval

3A.01. Applicability--An application and certificate of approval is required for any placement, construction, modification, enlargement, alteration, repair or removal of a dam after June 13, 1973. The Director shall give notice to file an application for a certificate of approval to every owner of a dam completed prior to July 1, 1973. Any person who wishes to construct, modify, or remove a dam or who is notified by the Director shall (a) file an application for a certificate of approval with the Department, and (b) obtain from the Department a certificate of approval.

3A.02. Application Requirements--An application for a certificate of approval shall be prepared by or under the direct supervision of a registered professional engineer. The application shall include one set of maps and drawings on standard 24" by 36" size plan sheets with two copies of an engineering report. The engineering report shall contain information in the following order: project narrative, design data, supporting calculations, specifications and reduced maps and drawings.

3B. Plan Requirements

3B.01. Narrative and Discussion

a. Project Narrative--A general narrative and discussion of the project shall be submitted to include as required by the design concept a discussion of existing site conditions, local geology, the design life of the facility, subsidence potential, design methodology backed up with design computations and data, method of construction to include clearing and grubbing, topsoil stockpiles, construction of surface and subsurface drainage facilities, phases of construction, routine inspection and maintenance, and timetable of construction. A description of the duties, responsibilities and lines of communication between those persons responsible for the design, construction and operation of the dam shall be included.

b. Emergency Warning Systems--All owners of dams posing a hazard to human life shall include an emergency notification and evacuation procedure and shall include a list of appropriate agencies to be contacted in