

# GUIDANCE DOCUMENT

FOR THE

DELAWARE REGULATIONS GOVERNING THE LOCATION  
OF HAZARDOUS WASTE STORAGE, TREATMENT, AND  
DISPOSAL FACILITIES

PREPARED BY

THE HAZARDOUS WASTE MANAGEMENT BRANCH  
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# TABLE OF CONTENTS

SECTION	SUBJECT	Page
I.	Introduction .....	1
II.	Agencies and Groups Involved.....	2
III.	The Siting Process .....	6
	Appendix A: Notice of Intent.....	A - I
	Appendix B: Exclusionary Criteria.....	B - I
	Appendix C: Cautionary Criteria .....	C - I
	Appendix D: Checklist: Steps In the Siting Process.....	D - I

## 1. INTRODUCTION

Pursuant to 7 Delaware Code, Chapter 63 Section 6305(a)(15), the Department of Natural Resources and Environmental Control (the Department), Hazardous Waste Management Branch is authorized to develop and promulgate criteria and regulations governing the location of hazardous waste management facilities. This document will serve as a guideline for facilities interested in siting a hazardous treatment, storage and/or disposal facility in Delaware under the Delaware *Regulations Governing the Location of Hazardous Waste Storage, Treatment, and Disposal Facilities*. This document is not intended to supersede any statutory or regulatory authorities.

The State of Delaware hopes this document will serve as a road map to the siting process, answering the most commonly asked questions, and providing all forms and information necessary to complete a satisfactory application for locating a hazardous waste storage, treatment and/or disposal facility in the State of Delaware.

## H. AGENCIES AND GROUPS INVOLVED

The process of seeking and obtaining approval to locate a hazardous waste storage, treatment and/or disposal facility (TSDF) in Delaware involves a joint effort by three distinct participants: the Applicant; the Department of Natural Resources and Environmental Control (DNREC); and the residents of the local Community.

A joint effort assures the interests of all the participants are addressed and the proposed location meets all standards set forth in the regulations. Each participant plays a vital role in the successful outcome of the siting approval process.

The following is a discussion of the participants and their roles during the siting process

### A. Applicant

The applicant(s) must provide the Department with all information necessary to make an informed decision on the suitability of a proposed location.

#### ROLE

Adequate familiarity with the Delaware *Regulations Governing the Location of Hazardous Waste Storage, Treatment, and Disposal Facilities* and the Delaware *Regulations Governing Hazardous Waste*.

- 1> Knowledge of the regulations is required to enable the Applicant to choose a location which will conform with all the site suitability requirements, and to continue through the Subtitle C Permit process.
- 2> Upon selection of a potential location the applicant shall initiate the application process
  - Submit a *Notice of Intent* to seek location approval; and if necessary
  - 3> Submit a notice that a *Petition for a Reduction in Scope of Site Suitability Report* will be submitted.
- 10. Prepare a detailed *Site Suitability Report* in accordance with the regulations.
- 0. Bear the responsibility for all costs associated with the administration of a public hearing held in accordance with the requirements of section 9.2 of the *Regulations Governing the Location of Hazardous Waste Storage, Treatment, and Disposal Facilities*.
- 10. Attend Citizens Advisory Committee (CAC) meetings as requested
  - 1> Address CAC inquires

### 3. Community

Community participants come from three separate sources: citizens living near to the proposed facility location, citizens living along the transportation route to the proposed facility location, and nominees submitted by the local government body(ies) with land use jurisdiction. From these sources a Citizens Advisory Committee (CAC) is formed.

The CAC members are appointed by the Secretary of the Department of Natural Resources and Environmental Control. The Chairperson of the committee will be a Department employee familiar with the siting process, as well as Departmental procedures and policies. The members of the committee at a minimum will consist of one person nominated by the local government body(ies) with land use jurisdiction, two people from the local community, and two people from along the transportation route to the facility. The purpose of the committee is to provide a forum for comments, questions and concerns about the location and facility and to promote discussion between the community and the Applicant interested in siting a facility. Through this committee citizens can directly affect the decision making process without having to use an intermediary party.

#### ROLE:

Review the Applicant's *Petition for Reduction in Scope of Site Suitability Report* (if applicable), and *Site Suitability Report* and the Departments non-binding feasibility report;

Meet with the applicant to discuss the proposed facility location;

Prepare a written report summarizing the comments, questions, and concerns of the Citizens Advisory Committee.

#### Department of Natural Resources and Environmental Control (DNREC)

The Department's mission is "to protect and manage the state's natural resources, protect public health and safety, provide quality outdoor recreation and to serve and educate the citizens of Delaware to promote the wise use, conservation and enhancement of Delaware's environment". The Hazardous Waste Management Branch (HWMB) is responsible for ensuring the fulfillment of that mission as it relates to all hazardous waste generation, treatment, storage, disposal and transportation within the state.

The Hazardous Waste Management Branch within the Department of Natural Resources and Environmental Control oversees all hazardous waste issues and, all hazardous waste treatment, storage and disposal facility siting issues. The statutory authority for the HWMB is imparted in 7 Del. C., Chapter 63. The 7 Del. C. Chapter 63 authority is administered through the *Delaware Regulations Governing Hazardous Waste, and Regulations Governing the Location of Hazardous Waste Storage, Treatment and Disposal Facilities*.

ROLE:

The Department, having established the standards for determining where hazardous waste treatment, storage, and disposal facilities may be located, is responsible for ensuring those standards are met by the applicant. To accomplish the regulatory standards the Department shall:

p- Provide technical and/or regulatory interpretation assistance;

p- Establish a target time table for the formation of the citizens advisory committee and a project decision schedule;

p- Appoint a Citizens Advisory Committee composed of residents living near to the proposed facility location, along the transportation route to the proposed facility location and nominees from the local government entities with land use planning and zoning authority;

p- Act as a conduit for the dissemination of information and promote discussion amongst the various participants;

P. Review all reports submitted by the applicant;

Review all reports and comments received from citizens, and the Citizens Advisory Committee;

Prepare a non-binding feasibility report and distribute it to the Citizens Advisory Committee and the local government body(ies) responsible for land use planning and zoning;

Public Notice the receipt of the Applicant's *Petition for Reduction in Scope of Site Suitability Report* (if applicable), and *Site Suitability Report*;

p- Advertise and conduct a public hearing if requested;

P- Make a final location suitability determination;

D. Local Government

The local government body(ies) with land use jurisdiction are responsible for protecting and/or enhancing the residential, commercial and/or industrial interests of the citizens that dwell within its local boundaries.

ROLE:

P. Nominate candidates for the Citizens Advisory Committee;

U. Agencies and Groups Involved  
D. Local Government

If an Applicant requires a change to a land use plan, a change of zoning, a conditional use or special exemption permit, or a zoning variance to legally-carry out the proposed activity; review the Applicants site suitability report and the non-binding feasibility report, prepared by the Department;

Certify, in writing, to the Department that the applicant complies with local land use plans and zoning regulations.

## M. THE SITING PROCESS

All hazardous waste management facilities must receive siting approval from the Secretary prior to applying for a hazardous waste Treatment, Storage and/or Disposal permit for any new unit. In addition, a facility must obtain siting approval prior to the alteration of an existing unit, such that the alterations would require a Class 3 permit modification as described in *Delaware Regulations Governing Hazardous Waste* (DRGHW) Section 122.42. Siting approval is also required prior to seeking written approval to own and operate a hazardous waste Transfer facility.

### A. Preapplication

1. The process is initiated when an Applicant submits a *Notice of Intent* to the Department of Natural Resources and Environmental Control.
  - a. The notice shall be in letter form and shall include, but not be limited to, pertinent information such as the following (See Appendix A for more information):
    - i. The site for which approval is being sought;
    - ii political jurisdiction (e.g. county, township, or election district);
    - iii. the types of units to be located at the proposed site;
    - iv. site address;
    - v. owner name;
    - vi. owner address;
    - vii. company contact name and phone number.
  - b. If the Applicant intends to submit a *Petition for Reduction in Scope of the Site Suitability Report*, the Department must be notified when the *Notice of Intent* is submitted.
    - i. The Applicant should include which criteria are affected.
2. The Department determines if the *Notice of Intent* is complete.
  - a. Within thirty days after determining the *Notice of Intent* is complete, the Department will:
    - i. Notify the Applicant the *Notice of Intent* is complete;
    - ii. provide the applicant with a project decision schedule

(A) The project decision schedule will specify target dates by which the Secretary intends to:

- (1). submit a request for nomination for the Citizens Advisory Committee (CAC); and
- (2). appoint a Citizens Advisory Committee and chairperson.

iii. initiate the community participation requirements.

4. The Department and the Applicant meet:

- a. Discuss Notice of Intent;
- b. arrange for the Department to visit the site;
- c. Arrange schedule for submission of site suitability report and completion of siting process; d.

Discuss any questions the Applicant or Department may have.

#### B. Petition for Reduction in Scope of the Site Suitability Report

An Applicant may petition the Department to reduce the scope of the *Site Suitability Report*. This petition must accompany any reduced site suitability submittal.

1. The petition must clearly set forth the rationale for any omission of information from the *Site Suitability Report*
  - a. Include documentation.
2. The petition is reviewed and commented on by the CAC and the Department.
3. The Department makes the final decision on granting of Petition.
4. The Department will Public Notice the petition determination.

#### C. Site Suitability Report

The *Site Suitability Report*, submitted by the applicant, provides Department personnel with the technical information necessary to make an informed decision on the suitability of the proposed location. In this report the Department requires specific documentation for all criteria listed in the siting regulations, except for those addressed in a *Petition for the Reduction in Scope of Site Suitability Report*, which should be referenced where applicable. Each issue listed in the regulations must be addressed separately. It should be complete but as brief as possible.

HI. The Siting Process  
C. Site Suitability Report

1. The applicant shall simultaneously submit five copies of the site suitability report to the Department and one copy to the appropriate local authorities when the proposed site requires a change to land use plans, change of zoning, conditional use or special exemption permit, or a zoning variance, in order to conduct the proposed activity.
  - a. The Department shall not issue a final location approval for any new or expanded hazardous waste management facility until the local land use planning and zoning authority certifies in writing that the applicant has complied with appropriate land use plans and zoning regulations.
2. The applicant is expected to conduct a detailed geologic, hydrogeologic, and environmental study of the proposed location.
  - a. The submitted study must be signed by the owner/operator of the site and by an independent Professional Engineer registered in Delaware.
3. The following information shall be presented in the form of a report describing the site in detail, and evaluating the onsite data obtained. All supporting documentation will be included with the report.
  - a. The report, at a minimum, includes the following information:
    - i. Facility Description. A detailed description of the facility, its purpose, and all processes, disposal, storage, and/or treatment to be conducted on the site.
    - ii. Exclusionary criteria. Those factors the Department has determined make a site unsuitable for any hazardous waste management activity. Documentation must be submitted proving that the proposed site does not fulfill any exclusionary criteria. See Appendix B for more detail.
    - iii. Cautionary criteria.
      - (A) Those factors the Department has determined might be addressed with additional measures. Site characteristics that initially do not meet the cautionary criteria may be compensated for with methods such as engineering controls or process design.
      - (B) If a proposed facility site does not satisfy each cautionary criterion, the Applicant shall submit additional information and justification allowing the Department to assess what effect failure to satisfy the criterion has upon the acceptability of the facility site. The Department shall provide notice to municipal officials and other interested persons in order to solicit additional information regarding potential effects of the reduction at the proposed facility site. The Department may undertake additional investigations and, after consideration of relevant

information, shall determine whether the proposed design, construction, and operation of the facility will successfully mitigate adverse effects which would otherwise be associated with failure to satisfy the cautionary criteria.

(C) After evaluating each criterion individually, the Department shall evaluate the facility's overall compliance with the cautionary criteria and shall identify risks that have not been eliminated through mitigative measures. If risks to public health, safety, welfare, and the environment remain, which, in the judgement of the Department, render the proposed facility site unacceptable for a hazardous waste management facility, the Department may include conditions in the approval which eliminate or reduce the identified risks or may deny site approval altogether. See Appendix C for more detail.

iv. Topography. A USGS topographic map of the site, facility boundaries accurately represented, at a scale of no greater than 1:2,400, and contour interval of no greater than two feet.

v. Facility Delineation. The hazardous waste facility means all contiguous land, and structure, other appurtenances, and improvements on the land used for temporary or permanent storage, treatment and/or disposal of hazardous wastes. A facility may consist of several treatment, storage, or disposal operational units. A facility also includes any truck parking areas where loaded trucks may be parked, truck washing facilities and scales, and any portion of the access road where loaded trucks might park awaiting access to the facility. Future expansion areas may be included if the Applicant chooses to do so. Measurement of distances to the various siting criteria should be done from the nearest facility site boundary.

(A) All maps submitted by the Applicant must include the following:

- (1) drafting scale;
- (2) date drawn; and
- (3) map orientation.

(B) A map or maps which illustrate the following requirements and/or criteria about actual and proposed site information:

- (1) legal property line boundaries of the site;
- (2) location and identity of existing and proposed buildings, treatment, storage, disposal, and auxiliary facilities and structures (note, no such facilities can be located within a 50-foot buffer zone measured inside the

- site boundary);
- (3) location of the entire access road;
  - (4) location of non-contiguous areas to be used during the normal course of facility operations.
  - (5) location of hazardous waste operations units.
  - (6) access control;
  - (7) loading and unloading areas;
  - (8) fire control;
  - (9) sewers;
- (C) A map or maps which illustrate the following requirements and/or criteria about site surface water and ground water information:
- (1) A map of the proposed facility at a scale in which one inch equals no more than 200 feet and with contour intervals that are sufficient to clearly show the pattern of surface water flow in the vicinity of the hazardous waste units and must cover an area extending 1000 feet beyond the facility property line.
  - (2) 100 year floodplain area;
  - (3) surface waters (including intermittent streams and wetlands) and direction of their flow;
  - (4) injection and withdrawal wells;
  - (5) the location of each intake and discharge structure;
  - (6) flood control or drainage barriers;
- (D) A map or maps which illustrate the following requirements and/or criteria about miscellaneous information:
- (1) surrounding land uses;
  - (2) critical environmental lands

- (3) a wind rose;
- (4) wind speed and direction;

vi. Geology

- (A) A comprehensive subsurface geological investigation including soil and bedrock borings to the bedrock aquifer in the Piedmont, and into the uppermost major confined aquifer in the Coastal Plain.
- (B) A structural geological map showing the surface geological formation and all faults, fractures, bedding attitudes, fold axes, cleavage, or foliation directions within 1,500 feet of the site boundaries.
- (C) Geological cross sections showing the subsurface geology beneath the site.
- (D) Assessment of the stability of the site related to geological processes such as erosion, mass movement, earthquakes, and landslides.
- (E) A map showing the 100 and 500 year floodplains, if any, on the site.

vii. Hydrogeology

- (A) A detailed hydrogeological investigation using a series of wells sufficient to define groundwater flow, both vertical and horizontal, and all groundwater systems hydraulically connected to the site.
- (B) Identification of all points of discharge for groundwater leaving the site.
- (C) Calculation of groundwater flow rates and volumes, and vertical groundwater leakage rates and volumes in all flow systems hydraulically connected to the site.
- (D) An assessment of regional hydrogeology as it relates to potential off-site effects of a facility.
- (E) A water budget using long term meteorological data to determine recharge, discharge, and evapotranspiration rates to obtain maximum, average, and minimum seasonal variations.
- (F) Assessment of any secondary permeability (joints, fractures, cleavages), weathering, or depositional features which can affect rates and directions-of - groundwater flow under existing or stressed (pumping, reduced groundwater--- recharge, groundwater mounding) conditions.

viii. Water Quality

- (A) Assessment of existing groundwater quality in all groundwater flow systems hydraulically connected to the site.
- (B) Assessment of existing water quality in all surface waters receiving groundwater discharge or runoff from the site.
- (C) Identification of all groundwater use within 1,500 feet, all uses downgradient and an assessment of potential effects of the site use on existing and future groundwater use.
  - (1) Include all groundwater uses on-site;
  - (2) all groundwater use within 1500 feet of the location (measured from outside of the location property line); and
  - (3) all uses between the site and identified discharge area(s).
- (D) Assessment of all downstream uses in surface waters receiving groundwater discharge or runoff from the site.

ix. Soil Properties

- (A) Quantitative assessment of the capabilities of the earth materials to attenuate or renovate any contamination which might emanate from any landfarming facility.
- (B) Assessment of the compatibility of the site soil chemistry with any artificial liner or containment structure.
- (C) Assessment of soil stability during seismic events if the site is in an area of seismic risk.

x. Cultural

- (A) Assessment of existing and projected population densities and land use activities within a minimum of one mile radius of the site.
- (B) Assessment of the effects of the facility on any cultural or historic resources on or adjacent to the site.
- (C) Assessment of the proximity to airports and other land uses which require a buffer by statute or policy.

(D) Assessment of effects of the proposed facility on nearby property values.

xi. Transportation and Emergency Response Plans

(A) Assessment of transportation facilities and access to the site particularly with regard to the traffic volume, road capacity, road hazards, alternate routes, the potential for accidents, and proposed remedies.

(B) Description of existing or proposed emergency response needs and capabilities and, if appropriate, emergency evacuation plans.

xii. Biological

(A) Assessment of the extent and location of any critical wildlife habitat on or adjacent to the site.

(B) Assessment of the effects on downstream shellfish beds or any nearby coastal or freshwater wetlands, if any.

(C) Assessment of the effects on rare, threatened, or endangered species.

(D) Assessment of the effects on significant environmental lands.

D. Document Review

1. Completeness review

a. all criterion have been considered by the Applicant in their report and petition.

b. the applicant will be notified when the report is considered complete.

c. The Department forwards a project decision schedule to the Applicant.

i. The schedule will specify target dates by which the Secretary intends to:

(A). Complete review of the site suitability report;

(B). Furnish the local government a non-binding feasibility determination, and;

(C). Advertise the receipt of the application and provide opportunity for public comment.

d. The report is forwarded to the chairperson of the Citizens Advisory Committee.

2. Technical review

E. Non-Binding Feasibility Report

1. Based on the completeness review and technical review the Department will prepare a non-binding feasibility report. The report will be distributed to the Citizens Advisory Committee, and the Local Government body(ies) with land use planning and zoning authority (if applicable).

F. Public Participation

1. Citizens Advisory Committee

- a. The Citizens Advisory Committee is an opportunity for individuals who might be affected by the siting of a facility to communicate directly with the Department and the facility during the siting process.
- b. The committee is expected to review the *Site Suitability Report* and prepare a report of their findings to present to the Department prior to the final decision. This report becomes part of the public record.
  - i. The report, at a minimum, will include the following sections.
    - (A) A brief summary of the facility being commented on, indicating a clear understanding of the project.
    - (B) Summary of the committee's comments, questions, and concerns about the site and/or facility, include how the applicant is addressing the concerns.
    - (C) Conclusion. Include constructive suggestions for resolutions of items of concern. 2.

Public Notice and Hearing Process

Public Notice and Hearing procedures are detailed in Section 9 of the *Regulations Governing the Location of Hazardous Waste Storage, Treatment and Disposal Facilities*. All public notice and hearing procedures were developed consistent with the *Delaware Regulations Governing Hazardous Waste* (DRGHW), § 124. Seven Del. C., Chapters 60 and 63 sets the statutory basis for public comment requirements and policies.

a. Public Notice

- i. The Secretary receives all siting applications and provides opportunity for public comment through newspaper notices.
  - (A) At a minimum, the public will be afforded a fifteen day period to submit

comments. Items required to be public noticed include:

- (1) Receipt of the *Site Suitability Report*, and
- (2) *Petition for Reduction in Scope of Site Suitability Report*, if applicable.

ii. If a meritorious request for a hearing is received, the Department will hold such a hearing. Hearings will be held in accordance with the directives found in the Siting Criteria Regulations and the DRGHW.

b. Public Hearing

i. Public Hearing Notifications will be posted in newspapers at least twenty days prior to the hearing date and shall include:

- (A) A brief description of the of the hearing subject.
- (B) The time, date, and place of hearing, and,
- (C) The time and place where copies of the subject material may be obtained.

ii. A record from which a verbatim transcript can be prepared shall be made of all hearings and shall, along with the exhibits and other documents introduced by the Secretary or other parties, constitute the record.

G. Department Determination

1. Primary responsibility is with the applicant to prove site suitability for the type of facility planned.
2. Public concerns expressed during the siting process will be evaluated by the Department when making the final determination of site suitability.
3. Final determination of site suitability by the Department is based on the record. The record includes, but is not limited to, the following:
  - a. The site suitability report provided by the applicant;
  - b. The written report provided by the citizens advisory committee as described in Section F; c. Response to the Public Notice;
  - d. Transcripts of the Public Hearing(s); and

e. Written land use planning and zoning authority approval.

4. The Secretary or the Board of Appeals or a duly authorized designee shall make a finding of fact based on the record.
5. The Secretary or the Board shall then enter an Order approving or denying the proposed hazardous waste storage, treatment, and/or disposal facility location.
6. The Secretary shall promptly give written Notice to the persons affected by such order.
7. Contention about the Department final decision will be referred to the Environmental Appeals Board and then to the Superior Court of Delaware.

# **APPENDIX A**

NOTICE OF INTENT TO SITE A HAZARDOUS WASTE FACILITY

Department of Natural Resources  
and Environmental Control  
Hazardous Waste Management Branch  
PO Box 1401  
89 Kings Hwy  
Dover, DE 19903

Dear Siting Coordinator,

Company XYZ intends to site a (Hazardous Waste Management) Facility in Delaware. This letter will act as our *Notice of Intent per the Delaware Regulations Governing the location of hazardous Waste Storage, Treatment, and Disposal Facilities*. To that end we are providing the following information:

Applicant:  
Applicant Address:  
Applicant EPA ID Number:  
Contact Name and Title:  
Phone Number:  
Environmental Record'  
Proposed Facility Location  
Proposed Facility Type  
Proposed location EPA ID Number (if applicable)  
Type of Action (siting a new facility, modification to an existing facility, etc.)  
Type of Unit  
Waste Stream Characterization  
Intended Management Practices

At this time we anticipate/do not anticipate submitting a *Petition for the Reduction in Site Suitability Report* (specify which criteria are affected if anticipating submittal).

The *Site Suitability Report* is expected to be submitted within x number of days.

Sincerely,

Legal Owner or Corporate Officer Signature

*Under the authority of 7 Del. C. Chapter 79 §7902 the Department is able to require the following information: (1) A complete list of all current members of the board of directors, all current corporate officers, all persons owning more than 20 percent of the applicant's stock or other resources, all subsidiary companies, parent companies and companies with which the applicant's company shares 2 or more directors, (2) A description of all notices of violation, criminal citations, arrests, convictions, or civil or administrative penalties assessed against the applicant or any other person identified under paragraph (1) of this section for the violation of any environmental statute, regulation, permit, license, approval or order, regardless of the state in which it occurred for the 5 years prior to the date of the application; (3) A description of the disposition of any of the items identified pursuant to paragraph (2) of this section and any actions that have been taken to correct the violations that led to such enforcement actions,- (4) A description of any felony or other criminal conviction of any person identified in paragraph (1) of this section that resulted in a fine greater than \$1,000 or a sentence longer than 7 days, regardless of whether such fine or sentence was suspended,- and (5) Copies of any and all settlements of environmental claims, whether or not such settlements were based on agreements where the applicant did not admit liability.*

A - I

# **APPENDIX B**

## EXCLUSIONARY CRITERIA CITATIONS AND INTERPRETATIONS

### **CRITERION #1: Flood Hazard Areas**

- (a) *Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in the 100-year flood hazard area.*

#### **INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Flood Hazard Areas: Those land areas adjacent to open coast, coastal sounds, estuaries, lakes, rivers, and streams which are prone to flooding from storms of a specified annual probability of occurrence.

100-year Flood Hazard Area: The land area inundated by a flood which has a 1% annual probability of occurrence as contained on the flood insurance rate maps published by the Federal Emergency Management Agency (FEMA).

An applicant must demonstrate to the Department that the proposed facility site is not within a 100-year floodplain. This identification must include the source of data for such determination and include a copy of the relevant Federal Insurance Administration (FIA) flood map, if used, or the calculations and maps used where an FIA map is not available.

#### **FOR MORE INFORMATION:**

An applicant can contact the local government in the area of the project (check phone book for number), and/or the DNREC Wetlands Section (302) 739-4691.

### **CRITERION #2: Wetlands**

- (a) *Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in Wetlands.*
- (b) *Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in freshwater wetlands.*

#### **INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Wetlands: Those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat, or other lowland subject to tidal action in the state along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary, or tributary waterway or any portion thereof, including those areas which are now, or in this century have been, connected to tidal waters, whose surface is at or below an elevation of two feet above local mean high water, and upon which may grow or is capable of growing

any but not necessarily all of the plants, listed in Del. C!, Title 7, Chapter 66.

Freshwater Wetlands: Those wetlands defined in accordance with the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (January, 1989 or as amended). They include both non-tidal and tidal freshwater wetlands not mapped under Delaware's Wetlands Act of 1973, (Title 7, Del. C., Chapter 66).

The applicant must demonstrate that the proposed facility site is not located in wetlands or freshwater wetlands. The term wetlands and freshwater wetlands includes but is not limited to wetland areas listed in the State Wetland Inventory or on such maps as the State has prepared, The U.S. Forest Service Wetlands Inventory of Delaware, the Delaware Coastal Zone Management Plan, the U.S. Fish and Wildlife National Wetland Inventory, any wetland areas designated by a river basin commission.

In order to determine if wetlands and/or freshwater wetlands are present on-site, applicants should check with DNREC Wetlands Branch for state regulated wetlands and U.S. EPA, Region 111, Office of Wetland and Marine Protection for federally regulated wetlands.

### **FOR MORE INFORMATION:**

The publication *A Federal Manual for Identifying and Delineating Jurisdictional Wetlands* is available from the U.S. EPA, Region 111, Office of Wetland and Marine Protection. For state regulated wetlands contact DNREC Wetlands Section at (302) 739-4691. Any indication that unregistered wetlands are present on the proposed facility site will require a wetlands survey conducted by a qualified biologist.

### **CRITERION #3: Carbonate Bedrock Areas**

- (a) Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in Carbonate Bedrock Areas.*
- (b) Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in Carbonate Bedrock Drainage Areas.*

### **INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Carbonate Bedrock Areas: Those areas in the Piedmont Province where the first bedrock stratum encountered below the land surface is limestone or dolomite.

Carbonate Bedrock Drainage Areas: The surface of the land in the Piedmont Province draining to the subcrop of limestone or dolomite rock.

An applicant must demonstrate that the proposed facility is not located over a carbonate bedrock or a carbonate bedrock drainage area. In most cases, the State Geologic Map can delineate such formations, however, in situations where sites lie on the border of such formations, backup publications, special surveys done by the state Geologic Survey and more detailed quadrangle maps could be available to provide a clearer determination of the extent and location of the carbonate formation. The applicant

may wish to retain a geologist to conduct a detailed survey of the area. DNREC will evaluate the geologic studies and data presented by the applicant and make a decision about the existence of carbonate formations under a proposed facility site.

**FOR MORE INFORMATION:**

The State Geologic Map and other survey publications and quadrangle maps which may be useful to the applicant are available from the Delaware Geological Survey (302) 831-2833.

**CRITERION #4 - Public Water Supply Watersheds**

*(a) Land emplacement units shall be prohibited in public water supply watersheds upstream from the points of withdrawal.*

*(b) Non-land em ,placement storage, treatment, and disposal units shall be prohibited in public water supply watersheds upstream from reservoirs.*

**INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Public Water Supply System: A water supply system, approved by the Division of Public Health, which provides water to the public for potable or domestic purposes through a piped system directly to the user's free-flowing outlet.

Public Water Supply Watershed: The land area draining to a river, lake, or stream used as a public water supply.

The applicant must demonstrate that a facility site is not located in the types of areas specified above. The drainage pattern of the site must be determined. If the proposed site drains to a river, lake, or stream the applicant must determine and report downstream use of the subaqueous land.

**FOR MORE INFORMATION:**

The applicant may contact the Water Resources Agency for New Castle County (New Castle County only) (302) 731-7670, Division of Health and Social Services - Department of Public Health - Public Water Systems Supervision Program (302) 739-5410, and DNREC Division of Water Resources (302) 739-4761.

**CRITERION #5: Aquifers**

*(a) Land emplacement units shall be prohibited in subcropping aquifers, aquifer recharge areas, and areas where the transmissivity of the unconfined aquifer is greater than 10,000ft/day.*

**INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Aquifer: A geologic formation, group .of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs.

Subcropping Aquifers and Aquifer Recharge Areas: Those are as where the major pre-Quaternary coastal plain aquifers outcrop or subcrop beneath surficial sediments and receive or could receive significant recharge by natural or induced groundwater flow. These areas include: sands of the Potomac and Magothy formations; sands of the Rancocas Group; the Cheswold, Frederica, Manokin, and Pocomoke aquifers; and some finer grained aquifers through which substantial leakage may be induced by pumping.

Unconfined Aquifer: An aquifer in which there are no confining beds between the zone of saturation and the ground surface.

Transmissivity: The rate at which water of the prevailing kinematic viscosity is transmitted through a unit width of an aquifer under a unit hydraulic gradient. It equals the hydraulic conductivity multiplied by the aquifer thickness.

An applicant must demonstrate that the proposed facility site is not located on lands where there are any subcropping aquifers and/or aquifer recharge areas, or where the transmissivity of an aquifer is greater than 10,000 ft/day. In addition, the uppermost aquifer and aquifers hydraulically connected with the uppermost aquifer, in the vicinity of the facility property must be identified, and their groundwater flow directions and rates determined. As transmissivity fluctuations occur within and across an aquifer, a survey, including date of survey, must be provided. The information provided must be of such quality to be acceptable to hydrologists experienced with aquifers and associated flow characteristics.

#### **FOR MORE INFORMATION:**

Aquifers are identified on the State Geologic Map. It and other survey publications are available from the Delaware Geological Survey (302) 831-2833. In addition you may contact DNREC Division of Water Resources at (302) 739-4761.

#### **CRITERION #6: Significant Environmental Lands**

- (a) *Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in significant environmental lands.*

#### **INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Significant Environmental Lands: State parks, state wildlife areas, state forests, national wildlife refuges, or state nature preserves, or privately owned nature preserves dedicated under the Natural Areas Preservation Systems Act (7 Del. C. Chapter 73), lands protected under the Conservation and Preservation Easements Act (7 Del. C Chapter 69), and lands on the National Register of Historic - Places.

An applicant must demonstrate that the proposed facility site is not located within the boundaries of

significant environmental lands including those sites listed on the National Register of Historic Places.

**FOR MORE INFORMATION:**

A listing of the National Natural landmarks is available from the National Park Service, Mid-Atlantic Region. The listing of historic sites on the National Register of Historic Places and their site boundaries can be obtained from the State Historic Preservation Office (302) 739-5685. A listing of state parks, state wildlife areas, state forests, national wildlife refuges and state nature preserves is available from DNREC, Division of Parks and Recreation (302) 739-5285. Privately owned nature preserves would have to be determined on an individual basis.

**CRITERION #7: Groundwater**

*(a) Land emplacement units shall be prohibited in areas where groundwater under natural conditions could come into contact with the waste.*

**INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Groundwater: Water below the land surface in a zone of saturation.

An applicant must demonstrate that waste placed in the proposed land emplacement unit and all waste related leachate will not come into contact with groundwater under natural conditions.

**FOR MORE INFORMATION:**

Contact DNREC, Division of Water Resources at (302) 739-4761.

**CRITERION #8: Wellhead Protection Areas**

*(a) Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in wellhead protection areas.*

**INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Wellhead Protection Area: The surface area designated by the Department which surrounds a drinking water well or well field supplying a public water system within which contaminants, if released to the environment, are likely to move toward and reach such well or well **field**.

**FOR MORE INFORMATION:**

Contact DNREC, Division of Water Resources at (302) 739-4761.

**CRITERION #9: Seismic Standard '**

- (a) *Land emplacement units and non-land emplacement storage, treatment, and disposal units shall be prohibited in areas within 500 feet of a fault that has experienced movement within the last 35, 000 years (capable fault).*

**INTERPRETATION:**

The following definitions should be applied in the interpretation of this criterion:

Fault: A fracture along which rocks on one side have been displaced with respect to those on the other side.

The applicant shall demonstrate compliance with the seismic standard. This demonstration may be made using either published geologic data or data obtained from field investigations carried out by the applicant. The information provided must be of such quality to be acceptable to geologists experienced in identifying and evaluating seismic activity.

**FOR MORIE E4FORMATION:**

DE Geological Survey at (302) 831-8258 or (302) 831-3586.

# **APPENDIX C**

## CAUTIONARY CRITERIA

### **CRITERION #1: Seismic Risk**

- (a) *The location of land emplacement or non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*
  - (1) *A proposed unit within a seismic risk zone shall be designed in accordance with recognized seismic design standards such as API 650 Appendix E.*

The following definitions should be applied in the interpretation of this criterion:

Seismic Risk Zone: All lands within five miles of an epicenter of an earthquake of a Modified Mercalli VII or greater intensity.

### **CRITERION #2: Erosion and Mass Movement**

- (a) *The location of land emplacement units meeting the criteria below shall be considered acceptable:*
  - (1) *Units should be located where the natural site characteristics and geomorphic processes will have minimal long term effect on the unit, i.e., avoiding highly dissected uplands or interfluves, deeply incised swales, and headwardly eroding streams.*

The following definitions should be applied in the interpretation of this criterion:

Erosion and Mass Movement: The relative degree to which the site will be vulnerable to the forces of erosion, landslide, soil creep, or any other mass movements which might breach or carry wastes away from a facility.

### **CRITERION #3: Depth to Groundwater**

- (a) *The location of non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*
  - (1) *If, under natural conditions, groundwater may encroach upon any subsurface unit, then that groundwater shall be kept below the bottom of the facility by means of properly designed drainage.*

The following definitions should be applied in the interpretation of this criterion:

Groundwater: Water below the land surface in a zone of saturation.

### **CRITERION #4: Depth to Consolidated Bedrock**

- (a) *The location of land emplacement or non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*

- (1) *At least ten feet of unconsolidated and unsaturated material should lie between the bottommost part of the unit and bedrock.*

The following definitions should be applied in the interpretation of this criterion:

Bedrock: Any solid rock exposed at the surface of the earth or overlain by unconsolidated material.

#### **CRITERION #5: Proximity to Surface Water**

(a) *The location of land emplacement units meeting the criteria below shall be considered acceptable:*

- (1) *The location of a proposed unit shall provide that monitoring and frequency of sampling detect the presence of contaminants, and initiation of appropriate remedial action before degradation of surface water quality.*

The following definitions should be applied in the interpretation of this criterion:

Surface Water: Water occurring generally on the surface of the earth.

#### **CRITERION #6: Groundwater Use**

(a) *The location of land emplacement or non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*

- (1) *Units should be located at least .25-mile from, and not hydraulically upgradient of, any drinking water wells where no effective hydrogeologic barrier to flow exists.*

The following definitions should be applied in the interpretation of this criterion:

Groundwater: Water below the land surface in a zone of saturation.

#### **CRITERION #7: Proximity to Population**

(a) *The location of land emplacement or non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*

- (1) *Sites should be selected such that proposed land emplacement, storage, and treatment units are more than 1,500 feet from a residential dwelling.*

#### **CRITERION #8: Proximity to Immobile Resident Populations**

(a) *The location of land emplacement units meeting the criteria listed below shall be considered acceptable:*

- (1) *Units handling toxic, explosive, reactive, or flammable and combustible wastes, and which are regulated by the Extremely Hazardous Substances Risk Management Act (7*

Del. C Chapter 77), and Delaware Regulations \_\_\_\_\_-for the Management of Extremely Hazardous Substances, should be more than one mile from an immobile resident population. This criteria is -not- applicable to units handling other types of -hazardous waste.

- (b) *The location of non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*
- (1) *Units handling toxic, explosive, reactive, or flammable and combustible substances, or which are regulated by the Extremely Hazardous Substances Risk Management A (7 Del. C Chapter 77), and Delaware Regulations for the Management of Extremely Hazardous Substances should be more than one mile from an immobile resident population. This criteria is not applicable to units handling other types of waste.*

The following definitions should be applied in the interpretation of this criterion:

Immobile Resident Population : Individuals residing in public or private institutions such as prisons, hospitals, nursing homes, and mental health care facilities and who cannot be easily evacuated in case of an emergency.

**CRITERION #9: Proximity to Existing Waste Management Units or Industrial Facilities Handling Hazardous Materials**

- (a) *The location of land emplacement units meeting the criteria listed below shall be considered acceptable:*
- (1) *Proposed units should be located near existing waste management units or industrial facilities handling hazardous materials only if the potential environmental effects can be distinguished from those of existing units, and if the wastes are not incompatible or dangerous if inadvertently combined in the environment.*
- (b) *The location of non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*
- (1) *Proposed units may be located near existing waste management units or industrial facilities handling hazardous materials only if the potential environmental effects can be distinguished from those of existing units, and if the wastes are not incompatible or dangerous if inadvertently combined in the environment.*

The following definitions should be applied in the interpretation of this criterion:

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

Existing Hazardous Waste Management Facility: A facility which has satisfied the requirements of 7

Del. C. Chapter 6307 and the regulations promulgated pursuant to this section on or before the effective date of this regulation.

**CRITERION #10: Emergency Response Facilities**

(a) *The location of land emplacement or non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*

- (1) *Sites should be selected where emergency response time is adequate for the types of wastes handled.*

The following definitions should be applied in the interpretation of this criterion:

Emergency Response Facility: Fire control and emergency medical service.

**CRITERION #11: Critical Habitat for Rare and Endangered Species**

(a) *The location of land emplacement or non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*

- (1) *Units should not be located on lands providing habitat for species listed by the Federal government under the Endangered Species Act, unless adequate mitigation is provided.*

The following definitions should be applied in the interpretation of this criterion:

Critical Habitat for Rare and Endangered Species: Areas in public or private ownership which the Secretary has determined to provide sole or significant support to populations of rare or endangered plant or animal species.

**CRITERION #12: Proximity to Significant Environmental Lands**

(a) *The location of land emplacement units meeting the criteria listed below shall be considered acceptable:*

- (1) *Units should be located more than one-half mile from such lands.*

(b) *The location of non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*

- (1) *Units should be located more than 1500 feet from such lands.*

The following definitions should be applied in the interpretation of this criterion:

Significant Environmental Lands: State parks, state wildlife areas, state forests, national wildlife refuges, or state nature preserves, or privately owned nature preserves dedicated under the Natural Areas Preservation Systems Act (7 Del. C. Chapter 73), lands protected under the Conservation and Preservation Easements Act (7 Del. C Chapter 69), and lands on the National Register of Historic

Places.

**CRITERION #13: Proximity to Flood Hazard Area**

- (a) *The location of land emplacement units meeting the criteria listed below shall be considered acceptable:*
  - (1) *Sites should be outside of the 500 year floodplain.*

The following definitions should be applied in the interpretation of this criterion:

Flood Hazard Areas: Those land areas adjacent to open coast, coastal sounds, estuaries, lakes, rivers, and streams which are prone to flooding from storms of a specified annual probability of occurrence.

500 Year Flood Hazard Area: The land area inundated by a flood which has a 0.2 % annual probability of occurrence.

**CRITERION #14: Subcropping Aquifers and Aquifer Recharge Areas**

- (a) *The location of non-land emplacement storage, treatment, and disposal units meeting the criteria listed below shall be considered acceptable:*
  - (1) *Units should not be located in areas where major pre-Quaternary coastal plain aquifers outcrop or subcrop beneath surficial sediments and receive or could receive significant recharge by natural or induced ground water flow. These areas include: sands of the Potomac and Magothy formations; sands of the Rancocas Group; the Cheswold, Frederica, Manokin, and Pocomoke aquifers, - and some finer grained aquifers through which substantial leakage may be induced by pumping.*

The following definitions should be applied in the interpretation of this criterion:

Aquifer: A geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs.

Subcropping- Aquifers and Aquifer Recharge Areas: Those areas where the major pre-Quaternary coastal plain aquifers outcrop or subcrop beneath surficial sediments and receive or could receive significant recharge by natural or induced groundwater flow. These areas include: sands of the Potomac and Magothy formations; sands of the Rancocas Group; the Cheswold, Frederica, Manokin, and Pocomoke aquifers; and some finer grained aquifers through which substantial leakage may be induced by pumping.

## **APPENDIX D**

## CHECKLIST: STEPS IN THE SITING PROCESS

Below is a simplified flow chart of the siting process for a hazardous waste treatment, storage or disposal facility. Detailed descriptions of each of the steps follows this chart.

### Step 1: Pre-Application Process

- a. Applicant submits *Notice of Intent, and Reduction in Scope of Site Suitability Notice (if applicable)* to the Department.
- b. The Department conducts a completeness review.
  1. Deficiencies are corrected.
- c. The Department provides the applicant with a project decision schedule within 30 days of completing the completeness review.
  1. Targets dates by which the Secretary intends to submit a request for nomination for the citizens advisory committee and appoint a citizens advisory committee and chairperson.
- d. The Department and the Applicant conduct Pre-Application Meeting to answer questions, and initiate a tentative time table for submittal of the site suitability report.
- e. The Department completes a Pre-Application Meeting summary answering any questions the Applicant may have had.

### Step 2: Petition for Reduction in Scope of Site Suitability Report

- a. Submittal of Petition
- b. Department review
- c. Citizens Advisory Committee review
- d. Department Determination about Petition
- e. Public Notice of Department Determination for 20 days

### Step 3. Site Suitability Report Review

- a. Applicant submits Site Suitability Report.
- b. Department conducts a completeness review.
  1. Deficiencies are corrected.

c. Applicant Notification

1. Includes project decision schedule targeting dates by which the Secretary intends:

- a. To complete the review of the site suitability report;
- b. Furnish the local government a non-binding feasibility determination, if necessary;
- c. Advertise receipt of the application and provide opportunity for public comment, and; d. make a final location determination.

d. Department forwards report to the chairperson of the Citizens Advisory Committee.

e. Citizens Advisory Committee begin meetings.

Step 4. Site Suitability Report Technical Review

a. Department performs technical review of the document.

b. Department and Applicant meet to discuss findings of technical review.

1. Deficiencies are corrected.

c. Department prepares a non-binding feasibility report

1. Report is forwarded to the CAC, and;

2. Report is forwarded to local government entities, if necessary.

Step 5. Public Participation

a. The Citizens Advisory Committee reviews Site Suitability report and non-binding feasibility report.

b. Citizens Advisory Committee and Applicant meet to discuss any pertinent issues.

c. Citizens Advisory Committee completes and submits report to the Department.

Step 6. Department Determination

a. A Public Hearing is held.

b. The Department issues or denies siting location approval.

c. Department issues Public Notice of Final Determination.