Chapter NR 510

INITIAL SITE REPORTS FOR LANDFILLS

NR 510.01 Purpose. The purpose of this chapter is to ensure that efficient, nuisance-free and environmentally acceptable solid waste management procedures are practiced in Wisconsin and to outline the recommended investigations regarding initial site reports for new solid waste disposal facilities or expansions to existing facilities. The purpose of submitting an initial site report is to obtain an opinion from the department on the potential for development as a solid waste disposal facility and the advisability of spending additional time and funds to prepare a feasibility report. This chapter is adopted under ss. 144.43 to 144.47, and 227.11, Stats.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.02 Applicability. (1) Except as otherwise provided, this chapter governs all solid waste disposal facilities as defined in s. 144.43(5), Stats., except hazardous waste facilities as defined in s. 144.61(5m), Stats., and regulated under ch. NR 181 and metallic mining operations as defined in s. 144.81(5), Stats., and regulated under ch. NR 182.

(2) This chapter does not apply to the design, construction or operation of industrial wastewater facilities, sewerage systems and waterworks treating liquid wastes approved under s. 144.04, Stats., or permitted under ch. 147, Stats., nor to facilities used solely for the disposal of liquid municipal or industrial wastes which have been approved under s. 144.04, Stats., or permitted under ch. 147, Stats., except for facilities used for the disposal of solid waste.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.03 Definitions. The terms used in this chapter are defined in s. NR 500.03.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.04 Initial inspection. Any person intending to establish a new solid waste disposal facility or expand an existing solid waste disposal facility shall contact the department's district or area office as appropriate to arrange for an initial inspection for the purpose of evaluating compliance with the location and performance standards of s. NR 504.04. This inspection shall be completed prior to submittal of the report.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.05 General submittal requirements. (1) GENERAL PROVISIONS. Any applicant, prior to submitting a feasibility report, may submit an

initial site report to the department. If an initial site report is submitted, it shall address s. NR 500.05 and all requirements of this chapter except s. NR 510.11, regarding needs. A favorable opinion under this chapter does not guarantee a favorable feasibility determination. The department shall review and respond to the initial site report within 65 business days of receipt of the report and the appropriate review fee specified in ch. NR 520.

(2) CONTENT. The initial site report shall identify the project title; name, address and phone number of the primary contacts including the facility owner and any consultants; present property owner; proposed facility owner and operator; facility location by quarter-quarter section; total acreage of the property and proposed limits of fill; proposed facility life and design capacity; municipalities and industries to be served; estimated waste types and characteristics; estimated weekly quantities of each major waste stream; anticipated cover frequency; mode of operation; anticipated base and sub-base grades; and preliminary design concepts.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.06 Land use information. The initial site report shall discuss the present and former land uses at the facility and the surrounding area. A thorough discussion of land uses which may have an impact on the suitability of the property for waste disposal or affected groundwater quality shall be included. The report shall address all areas that may affect or be affected by the proposed facility. At a minimum, this will be the area within one-half mile of the limits of filling for facilities with a design capacity of 50,000 cubic yards or less and areas within one mile for facilities with a design capacity greater than 50,000 cubic yards. The discussions shall be supplemented with land use maps. At a minimum, this report shall specifically address the following items:

(1) ADJACENT LAND OWNERS. Identify and locate the adjacent land owners. This information may be presented on a plat map. However, check current ownership conditions and note any changes.

(2) LAND USE ZONING. Include a discussion of land use zoning in the area. Give particular attention to areas where zoning variances will be required, where agricultural impact statements may be required, or where floodplain, shoreland or wetland zoning is designated.

(3) DOCUMENTATION OF PRESENT LAND USES. Include a description of the present land uses in the area. Put particular emphasis on the discussion of known recreational, historical, archaeological or environmentally unique areas including natural or scientific areas, county forest lands and critical habitat. Include a letter from the department's bureau of endangered resources addressing the known presence of any endangered or threatened species, critical habitat and natural or scientific areas and a letter from the state historical society addressing the presence of any known historical, scientific or archaeological areas in the vicinity of the proposed facility. Address the need for an archaeological survey of the area prior to development.

(4) TRANSPORTATION AND ACCESS. Delineate the present or proposed transportation routes and access roads including any weight restrictions.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.07 Regional geotechnical information. The initial site report shall discuss the regional setting of the facility to provide a basis for comparison and interpretation of information obtained through field investigations. This discussion may be limited to information available from publications such as a hydrologic investigations atlas, water supply papers, informational circulars and technical bulletins published by the Wisconsin state geologic and natural history survey, the United States geological survey and the soil conservation service. The regional setting to be described is the area which may affect or be affected by the proposed facility. At a minimum, this will be the area within 5 miles of the proposed limits of filling. Supplement the discussions with available regional bedrock and glacial geology maps, USGS topographic maps, SCS soil maps and regional water table maps. Specifically discuss the following items:

(1) TOPOGRAPHY. Describe the existing topography including predominant topographic features.

(2) HYDROLOGY. Describe the surface water drainage patterns and significant hydrologic features such as surface waters, springs, surface water drainage basins, divides and wetlands.

(3) GEOLOGY. Describe the origin, texture, nature and distribution of bedrock; the origin, texture, thickness and distribution of the unconsolidated units; and the texture and classification of the surficial soils.

(4) HYDROGEOLOGY. Indicate the depth to groundwater, groundwater flow directions and hydraulic gradients, recharge and discharge areas, groundwater divides, aquifers and identification of the aquifers used by public and private wells in the region.

(5) WATER QUALITY. Submit information on groundwater and surface water quality which is available from the USGS, WSGNHS, DNR, UW-Extension and regional planning commissions.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.08 Specific geotechnical information. The applicant shall perform field investigations to define the topography, subsurface soils, depth to bedrock, type of bedrock, depth to groundwater, groundwater flow direction and gradients at the facility. The results of this investigation shall be described in the narrative section of the initial site report. Include all raw data such as boring logs, well construction diagrams, laboratory tests and field hydraulic conductivity test data and water level measurements in the report appendix. The following investigations at a minimum shall be performed unless an alternative geotechnical investigation program is approved by the department in writing.

(1) BORINGS. Drill borings at 8 separate locations for the first 10 or less acres of the anticipated limits of filling and one additional boring for each additional 10 or less acres. Extend all borings a minimum of 25 feet below the anticipated sub-base grade or to bedrock, whichever is less. Distribute the borings on a grid pattern and attempt to locate the borings no further than 300 feet from the anticipated limits of filling. Collect samples and prepare boring logs in accordance with s. NR 512.11(1)(c) and (e). Borings not converted to wells shall be abandoned in accordance with s. NR 508.07.

(2) WELLS. Install water table observation wells to adequately define the depth to groundwater and horizontal gradients. At a minimum, install 3 water table observation wells for the first 10 or less acres of the anticipated limits of filling and one additional well for each additional 10 or less acres. Construct the wells such that the water table intersects the well screen at all times during the year and attempt to locate the wells no further than 150 feet from the anticipated limits of filling. At a minimum, for each 20 or less acres of the anticipated limits of filling install a piezometer adjacent to a water table observation well to create a well nest. All wells shall be installed and developed in accordance with ch. NR 508.

(3) FIELD DIRECTION. A hydrogeologist or other qualified person shall observe and direct the drilling of all borings; the installation, development and abandonment of all wells; and all in-field hydraulic conductivity tests. The hydrogeologist or other qualified person shall also visually describe and classify all geologic samples.

(4) LABORATORY AND FIELD ANALYSES. Conduct laboratory and field analyses to identify the specific geologic and hydrogeologic conditions at the proposed facility:

(a) Analyze a minimum of one representative sample from each major soil unit encountered for grain-size distribution by mechanical and hydrometer tests and Atterberg limits as appropriate for the particular type of material. Classify the material according to the unified soil classification system.

(b) Test a minimum of one representative sample from each major soil unit for laboratory hydraulic conductivity. Conduct the tests using undisturbed soil samples where conditions allow.

(c) Conduct an in-field test on each well installed at the proposed facility to obtain a determination of the in-situ hydraulic conductivity. The test shall be of long enough duration and include a sufficient amount of data to provide a representative estimate of the actual hydraulic conductivity.

(d) Submit any available groundwater or surface water quality data which has been obtained from sampling at the facility. The department recommends that at least one round of baseline groundwater quality sampling be performed on all wells in accordance with s. NR 508.14.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.09 Data presentation. The results of the subsurface investigations shall be presented on 24 inch × 36 inch plan sheets unless an alternative size is approved by the department, as follows:

(1) TOPOGRAPHIC MAP. A topographic map of the area showing the anticipated limits of filling, property boundaries, homes, buildings, manmade features, water supply wells, and the location of soil borings and wells. The base map may consist of an enlarged 7.5 minute USGS map or other map having a minimum scale of one-inch equals 500 feet with contour intervals sufficient to show relief.

(2) GEOLOGIC CROSS-SECTIONS. Construct geologic cross-sections through all borings both perpendicular and parallel to the facility baseline as well as along and across transects which include major geologic

and geomorphic features such as ridges, valleys and buried bedrock valleys. Construct at least one cross-section parallel to groundwater flow. Where more than one interpretation can be reasonably made, conservative assumptions shall be used when evaluating heterogeneities within the unconsolidated deposits. Include the following information on the geologic cross-sections:

(a) A dashed line or question mark for inferred lithostratigraphic boundaries, a number or symbol to label major soil units instead of extensive shading and a key containing a description of the soil units.

(b) The anticipated sub-base, base and final grades for the proposed facility.

(c) All boring logs, the USCS classifications and the geologic origin for each major soil unit. Show the results of all lab and field tests beside the boring.

(d) Well construction details including screen and seal length at the appropriate scale along with stabilized water level elevations measured on the same day. When 2 or more water table observation wells are presented on a cross-section, draw a line representing the water table elevation.

(3) WATER TABLE MAP. Present at least one water table contour map. Base the maps on stabilized water levels recorded on the same day from all observation wells at the facility. Show all the wells and the measured water level at each well on the water table maps. The topographic map shall be used as a base map. If more than one set of water levels has been taken, base the water table map on the set of data which indicates the highest water table.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.10 Data analysis and design recommendations. Analyze the results from the sub-surface investigations, regional geotechnical information and land use information and give preliminary conclusions and recommendations on facility development and include a discussion of the following items:

(1) LOCATIONAL CRITERIA. The potential for the facility to meet the location and performance standards set forth in s. NR 504.04.

(2) FACTORS AFFECTING DEVELOPMENT. A discussion of the geologic environment including those factors which may affect the development, design or operation of the facility.

(3) PRELIMINARY DESIGN. A discussion of the preliminary design concepts including type and thickness of liners, leachate collection systems, base slopes, top slopes and side slopes, and proposed final cover. More than one design alternative may be submitted for consideration.

(4) EXISTING FACILITY PERFORMANCE. Evaluate and discuss all existing monitoring data from the facility. Give particular attention to any attainment or exceedance of the groundwater standards contained in ch. NR 140.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.

NR 510.11 Needs. The applicant may submit an evaluation to justify the need for the proposed facility in accordance with s. 144.44 (2) (nm),

Stats., unless the facility is exempt under s. 144.44 (2) (nr), Stats. A favorable preliminary opinion on the need for the facility does not guarantee a favorable determination of needs.

History: Cr. Register, January, 1988, No. 385, eff. 2-1-88.