

Feasibility Report Completeness Checklist

Chapter NR 512, Wis. Adm. Code



Revised January 2022

Waste & Materials Management
P.O. Box 7921
Madison, WI 53707-7921

Instructions: This checklist is intended for use by department staff for the review of landfill feasibility reports to determine completeness. This checklist is intended to be used in conjunction with the Design and Construction Criteria Completeness Checklist, Chapter NR 504, Wis. Adm. Code. Applicants may complete this checklist and submit it with a landfill feasibility report to facilitate department review. Please refer to applicable statutes and codes for exact requirements.

General Information

Facility Name: _____

Facility Type: _____

Proposed Waste Types: _____

Proposed Total Design Capacity: _____ (including daily and intermediate covers)

Initial Submittal: Date Received: ___/___/___ Completeness Due: ___/___/___ DNR Response: ___/___/___ (Complete: __ yes __ no)

Addendum # ___ Date Received: ___/___/___ Completeness Due: ___/___/___ DNR Response: ___/___/___ (Complete: __ yes __ no)

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Addendum # ___ Date Received: ___/___/___ Completeness Due: ___/___/___ DNR Response: ___/___/___ (Complete: __ yes __ no)

Has the assigned DNR hydrogeologist started to fill out a **Feasibility Internal Procedures** form for this project? Y N

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 500.05 GENERAL SUBMITTAL REQUIREMENTS.					
(1) Has the adequate review fee specified in s. 520.04 been submitted?					
(2) Has a cover letter detailing the desired action been submitted?					
(3) Have 5 copies (2 Regions, 3 Central Office) been submitted to the department?					
(4) Are the report and plan sheets submitted under the seals and certifications of a P.E. and P.G.?					
(5) Technical Procedures:					
Were all test procedures specified in the report?					
Were all technical procedures used to investigate the facility current standard procedures?					
Were explanations and reasons given for deviations from the current standard procedures?					
(6) Do all maps, plan sheets, drawings, isometrics, cross-sections, figures, photographs and tables meet the following requirements?					
(a) No larger than 24 inches x 36 inches & no smaller than 8 ½ inches x 11 inches.					
(b) Appropriate scale to show required detail.					
(c) Do visuals meet the following requirements? ___ numbered ___ legends for all symbols ___ referenced in the narrative ___ horizontal & vertical scales ___ titled ___ drafting and origination dates					
(d) Were uniform scales used?					
(e) Were north arrows shown?					
(f) Was a USGS datum used as basis for all elevations?					
(g) Do visuals contain a survey grid based upon monuments established in the field and which is referenced to the state plane coordinates?					
(h) Is the original topography and a grid system shown on the plan sheets that show construction, operation and closure topography?					
(i) Do cross-sections meet the following requirements? ___ Show survey grid locations, ___ Reference major plan sheets, ___ Include a reduced diagram of plan view showing cross-section location.					
(7) Was a table of contents provided listing all sections of the submittal?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(8) Was an appendix provided listing the following? __ names of all references __ all raw data, __ testing and sampling procedures __ calculations					
NR 504.04(3) LOCATIONAL CRITERIA. Does the report indicate that the proposed limits of filling are within:					
(a) 1,000 feet of any navigable lake, pond or flowage not including landfill drainage or sedimentation control structures? __ yes __ no __ If yes, was an exemption requested?					
(b) 300 feet of any navigable river or stream? __ yes __ no __ If yes, was an exemption requested?					
(c) A 100-year flood plain? __ yes __ no __ If yes, was an exemption requested?					
(d) 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or any public park or state natural area? __ yes __ no __ If yes, was a line of site study provided showing that the landfill would not be visible from the road, park or natural area through the use of screening and/or, __ was an exemption requested? Note: If waste may be visible for periods of time even with the use of screening, then an exemption should be requested.					
(e) 10,000 feet of the end of an airport runway designed or planned to be designed and used by turbojet aircraft or within 5,000 feet of any airport runway designed for and used by piston type aircraft? __ yes __ no Is FAA notification required? __ yes __ no Note: If the proposed limits of waste filling would be within <u>5 miles</u> (for expansions of an existing MSW landfill, initially accepting waste prior to 4/5/2000) or within <u>6 miles</u> (for new MSW landfills, after 4/5/2000) of the end of the runway of any airport used by turbojet or piston type aircraft, the applicant must provide notice to both the Federal Aviation Administration (FAA) and the affected airport. The report should contain all correspondence related to the notices including any determinations made by the FAA. (Ref. 49 U.S.C. § 44718(d), See FAA Advisory Circular AC 150/5200-34A, dated 1/26/2006)					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
<p>(f) 1,200 feet of any water supply well (i.e. public, private, irrigation or stock water supply wells)? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> was an exemption requested? If yes, have the following been provided for each identified well? <input type="checkbox"/> well location <input type="checkbox"/> former and present well owner <input type="checkbox"/> well driller <input type="checkbox"/> well construction log <input type="checkbox"/> Has an NR 812 well variance application been submitted? (Note: This is not a feasibility completeness item; however, an NR 812 variance application must be received by the department before an NR 504.04 exemption may be granted.) Note: Exemptions may not be granted if the above information is not provided.</p>					
<p>(g) 200 feet of a fault that has had displacement in Holocene time? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> If yes, was an exemption requested?</p>					
<p>(h) Seismic impact zones? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> If yes, was an exemption requested?</p>					
<p>(i) Unstable areas? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> If yes, was an exemption requested?</p>					
<p>NR 504.04(4) PERFORMANCE STANDARDS. Does the report indicate that the proposed landfill or any proposed noncommercial soil borrow source(s) will have:</p>					
<p>(a) A significant adverse impact on wetlands? <input type="checkbox"/> yes <input type="checkbox"/> no Note: If a significant adverse impact would occur to wetlands (e.g. filling or excavation) then a wetland permit would be required under s. 281.36, Stats. A wetland permit would supersede the NR 103 water quality standards for wetlands. The wetland permit application requires a practicable alternatives analysis, a wetland functional values analysis and a public comment period specific to the wetland permit application. Wetland mitigation may also be required. <input type="checkbox"/> Has a wetland permit been submitted with the feasibility report or has a wetland application been submitted to the department? <input type="checkbox"/> Has a wetland delineation and functional values report been submitted with the feasibility report?</p>					
<p>(b) A take of an endangered or threatened species in accordance with s. 29.604, Stats? <input type="checkbox"/> yes <input type="checkbox"/> no</p>					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(c) A detrimental effect on any surface water? <input type="checkbox"/> yes <input type="checkbox"/> no Note: Exemptions are <u>not</u> granted.					
(d) A detrimental effect on groundwater quality or will cause or exacerbate an attainment or exceedance of any preventive action limit or enforcement standard at a point of standards application as defined in ch. NR 140? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Has an exemption been requested to the groundwater standards in accordance with ss. NR 507.29 and NR 140.28, Wis. Adm. Code? If an exemption is required, does the feasibility report include: <input type="checkbox"/> A list of the specific wells and parameters for which an exemption is being requested. <input type="checkbox"/> A discussion of how the criteria listed in s. NR 140.28(2), (3) and (4) are met.					
(e) The migration and concentration of explosive gases in excess of 25% of the lower explosive limit for such gases at any time? <input type="checkbox"/> yes <input type="checkbox"/> no					
(f) The emission of any hazardous air contaminant exceeding the limitations for those substances contained in s. NR 445.04 or 445.05? <input type="checkbox"/> yes <input type="checkbox"/> no					
NR 512.04 INITIAL SITE REPORT.					
Has the department rendered an initial site report opinion? <input type="checkbox"/> yes <input type="checkbox"/> no Date: _____					
Has an optional pre-feasibility report been submitted? <input type="checkbox"/> yes <input type="checkbox"/> no Date: _____					
NR 512.05 GENERAL SUBMITTAL REQUIREMENTS.					
Does the report address all of the department's review comments on the initial site report or any applicable pre-feasibility report?					
Does the report contain justification for requests for any exemptions to the locational and performance standards listed in s. NR 504.04?					
For an alternative design to s. NR 504.05 – 504.09 requirements, does the report include an analysis to predict whether the facility will meet or exceed performance standards of s. NR 504.04(4)(d) regarding groundwater quality?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 512.06 PROCEDURAL REQUIREMENTS.					
(1) Local approvals: Does the report contain the following:					
<input type="checkbox"/> Documentation that each affected municipality (towns, villages, cities, and counties) has been notified and that application has been made for applicable local approvals, at least 120 days prior to submittal. <small>Note: Act 241, effective June 18, 1998 changes the definition of affected municipalities. The new law defines affected municipality as a town, city, village or county within 1,500 feet of the facility.</small>					
<input type="checkbox"/> A copy of all requests for the specification of applicable local approvals.					
<input type="checkbox"/> Responses from all affected municipalities regarding any applicable local approvals.					
<input type="checkbox"/> The standard municipal notice required by the waste facility siting board.					
<input type="checkbox"/> Follow up applications for any applicable local approvals submitted to the clerk of the governing board of each participating municipality per s. 289.23(2), Stats.					
(2) Documentation of and when copies of the ISR, the ISR opinion, any applicable pre-feasibility report, and the feasibility report have been submitted to each participating municipality under s. 289.33(6)(b), Stats.					
NR 512.07 GENERAL FACILITY INFORMATION. Does the report include all of the following:					
<input type="checkbox"/> Project title					
<input type="checkbox"/> Name, address and phone number of primary contacts, including the landfill's owner, operator and any consultants					
<input type="checkbox"/> Present property owner					
<input type="checkbox"/> Proposed owner and operator					
<input type="checkbox"/> Proposed landfill location by ¼ -¼ section					
<input type="checkbox"/> Total acreage of property					
<input type="checkbox"/> Total acreage of proposed fill area					
<input type="checkbox"/> Proposed design capacity					
<input type="checkbox"/> Proposed site life in years					
<input type="checkbox"/> Anticipated date of closure					
<input type="checkbox"/> Municipalities and industries to be served					
<input type="checkbox"/> Anticipated waste types and characteristics					
<input type="checkbox"/> Anticipated volumes of each major waste stream and any seasonal fluctuations taking into account waste reduction, reuse, recycling, composting and the recovery of energy from solid waste					
<input type="checkbox"/> Anticipated cover frequency					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
<input type="checkbox"/> Mode of operation					
<input type="checkbox"/> Anticipated sub-base, base and final grades					
<input type="checkbox"/> Preliminary design concepts					
NR 512.08 LAND USE INFORMATION. Does the report include a thorough discussion of <u>any changes</u> in land uses or zoning within one mile of the proposed limits of filling since the submittal of the ISR?					
<input type="checkbox"/> Does the report include a discussion of any changes in the identification of adjacent landowners discussed? Note: this information may be presented on a plat map if it accurately shows current land ownership conditions.					
<input type="checkbox"/> Are any changes in zoning discussed?					
<input type="checkbox"/> Are any changes in present land uses discussed with emphasis on known recreational, historical, archaeological or state/local natural areas, county forest lands, and critical habitat?					
<input type="checkbox"/> Are any changes in existing and/or proposed transportation routes and access roads, including any new weight restrictions, discussed?					
<input type="checkbox"/> Does the report include any information or bird study requested by the Department or the FAA? Note: This applies only if the owner proposes to accept putrescible waste and the limits of filling are within 5 miles (for expansions) or 6 miles (for new landfills) of the end of an airport runway. [Ref. s. NR 504.04(3)(e) and 49 U.S.C. § 44718(d), See FAA Advisory Circular AC 150/5200-34A, dated 1/26/2006]					
NR 512.085 ALTERNATIVE GEOTECHNICAL INVESTIGATION PROGRAM.					
Has the applicant proposed an alternative geotechnical investigation program that includes the following: <input type="checkbox"/> Detailed description of the proposed alternative program <input type="checkbox"/> Detailed explanation of the rationale for the proposed differences to NR 512.09 or 512.10 <input type="checkbox"/> Anticipated benefits of the proposed alternative program <input type="checkbox"/> Is a copy of the accepted program included in the feasibility report? Note: The applicant may propose an alternative geotechnical investigation program prior to initiating the geotechnical investigations required for a feasibility report. The program may not be implemented prior to receipt of written review by the department. The formal approval of the accepted alternative geotechnical program is made in the department's feasibility determination.					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 512.09 SITE-SPECIFIC GEOTECHNICAL INFORMATION.					
Has an alternate geotechnical investigation program been approved by the department in writing? <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> If yes, does the report include justification for the approved alternative geotechnical investigation program?					
(1) BORINGS. Have borings been made both inside and outside the proposed limits of filling?					
(a) Have the required number of borings been completed in or within 300 feet of the proposed limits of filling? <input type="checkbox"/> 10 borings for the first 5 or less acres of proposed fill area <input type="checkbox"/> 2 additional borings for each additional 5 or less acres of proposed fill area <input type="checkbox"/> Proposed limits of filling in acres <input type="checkbox"/> Number of borings required <input type="checkbox"/> Number of borings made within 300 feet of proposed limits of filling					
(b) Do all borings extend at least 25 feet below anticipated sub-base grades? Note: For borings located outside the proposed limits of filling, applicable sub-base grade is the elevation of the bottom of the proposed base liner nearest to the borehole.					
(c) Has 1 boring been extended at least 5 feet into bedrock, if bedrock is within 50 feet of the lowest elevation of the proposed sub-base grades? Was bedrock drilling performed in accordance with ch. NR 141 and s. NR 507.05?					
(d) Were samples collected and retained and borings logs prepared in accordance with ss. NR 507.05 and 507.14? Note: The following requirements refer to NR 507.05 and 507.14.					
<input type="checkbox"/> Fine-grained soils: Was continuous sampling to 25 feet below sub-base grades performed?					
<input type="checkbox"/> Coarse-grained soils or following continuous sampling in fine-grained soils: Were samples collected from each major soil unit and at maximum 5 foot intervals?					
<input type="checkbox"/> Sample at the depth of well screen: Was a soil sample collected at the depth of the well screen of any subsequently placed monitoring well and analyzed for grain size distribution using mechanical and hydrometer methods and Atterberg limits, as appropriate for the soil type?					
<input type="checkbox"/> Bedrock samples: Were continuous core samples collected?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
___ Soil samples: Do descriptions of each major soil sample unit include? ___ Structure ___ Lenses ___ Mottling ___ Geologic origin ___ Voids ___ USCS classified ___ Layering					
___ Do descriptions of continuous bedrock core samples include? ___ General rock properties ___ Rock Quality Designation (RQD) ___ Fracture frequency ___ Percent recovery					
___ Does the report contain a boring log for each boring that includes the following? ___ Elevations of land surface and bottom of boring corrected to USGS (national geodetic survey) datum ___ If converted to a well, water level at the time of drilling, date of water level measurement, and a well construction diagram on the boring log					
(e) Have all borings not converted to wells been abandoned in accordance with ss. NR 507.08 and 141.25 and been documented as instructed on Department forms (3300-5B)?					
(2) GROUNDWATER MONITORING WELLS.					
(a) Have the required number of water table observation wells with screens intersecting the water table been installed to adequately define the water table surface? ___ 5 water table observation wells for the first 5 or less acres of proposed fill area ___ 1 additional water table observation well for each additional 5 or less acres of proposed fill area ___ Proposed limits of filling in acres ___ Number of water table observation wells required ___ Number of water table observation wells installed					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(b) Have the required number of piezometers been installed? <input type="checkbox"/> 1 piezometer adjacent to a water table observation well at 2 separate locations for the first 5 or less acres of proposed fill area <input type="checkbox"/> 1 additional piezometer for each additional 10 or less acres of proposed fill area to create additional well nests <input type="checkbox"/> At least 1 well nest within the proposed limits of filling for every 20 acres of proposed fill area <input type="checkbox"/> Proposed limits of filling in acres <input type="checkbox"/> Number of piezometers required <input type="checkbox"/> Number of piezometers installed					
(c) If the proposed site is in a fine-grained soil environment does each well nest required above in (b) consist of 3 wells (a water table observation well, a piezometer installed at or just below the proposed subbase grades and a deeper piezometer installed at least 15 feet below the bottom of the upper piezometer's well screen)?					
(d) Are all wells located no more than 300 feet from the proposed limits of filling and are at least half of the wells located no more than 150 feet from the proposed limits of filling?					
(e) Are all wells designed, installed, developed, documented, and sampled in accordance with ch. NR 141 and ss. NR 507.06, 507.07, 507.14 and 507.17, or have alternative methods of well design and installation been approved by the department prior to well construction?					
(3) FIELD DIRECTION. Did a Professional Geologist (P.G.) or qualified technician directly supervised by a P.G. perform the following tasks? <input type="checkbox"/> Observe and direct drilling of all borings <input type="checkbox"/> Observe and direct installation, development and abandonment of all wells <input type="checkbox"/> Conduct all in-field hydraulic conductivity tests <input type="checkbox"/> Visually describe and classify all geologic samples					
(4) LABORATORY AND FIELD ANALYSIS.					
(a) Have 5 grain-size analyses per major soil unit (mechanical & hydrometer) with USCS classifications and Atterberg limits where appropriate been provided? <input type="checkbox"/> Number of major soil units <input type="checkbox"/> Number of grain size analyses required					
(b) Have lab hydraulic conductivity tests been provided for 2 undisturbed samples from each major fine-grained soil unit?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(d) Have <i>in-field hydraulic conductivity test</i> data and results been provided for each well?					
(e) Does report include 6 monthly water level measurements for all wells?					
(f) Does report include 6 monthly surface water level measurements for any surface water bodies including streams, lakes, ponds, drainage ditches and wetlands located within 1,000 feet of the proposed limits of filling?					
(g) <i>Baseline groundwater quality</i> for all wells located outside the proposed limits of filling in accordance with s. NR 507.18: NOTE: If a groundwater standard is attained or exceeded in any of the 4 baseline groundwater quality sample rounds, see ss. NR 140.28 and 507.29 for exemption criteria.					
Note: The following requirements refer to s. NR 507.18. ___ 4 monthly rounds for each detection monitoring parameter listed in Appendix 1, Tables 1 and 2 of ch. NR 507, as appropriate, for the particular waste types to be accepted ___ 4 monthly rounds for Public Health and Welfare parameters listed in Appendix I, Table 3 of ch. NR 507 ___ 2 monthly rounds for VOCs, plus 2 additional sampling rounds for any wells that have VOC concentrations above their limit of detection					
(h) Has the department required other work such as groundwater modeling, pump tests, geophysical investigations, isopach maps or a fence diagram to assess the hydrogeologic conditions at the proposed facility?					
(5) SAMPLE RETENTION					
Have all soil and bedrock samples collected from the proposed property been retained in accordance with NR 507.05?					
(6) ADDITIONAL REQUIREMENTS FOR LANDFILLS WITH EXTENDED COLLECTION LINES.					
(a) Does the landfill meet the requirements of (b) and (c) below for a facility where MSW is accepted and the leachate collection lines exceed 1,200 feet from the end of each cleanout to the toe of the opposite slope?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(b) Does the report include the following: ___ A minimum of one boring in the area of each proposed cell drilled to physically characterize subbase conditions for landfill foundation assessment of stability and settlement ___ Borings that extend a minimum of 50 feet below the proposed subbase grades or to competent bedrock, whichever is shallower. ___ Samples taken at each significant soil layer ___ A minimum of one sample from each fine grained layer and from each soft or compressible coarse grained layer subjected to geotechnical testing to define parameters used in assessment of stability and settlement of the liner					
(c) Does the report include the consolidation testing data include the data summarized in the major soil unit table required by NR 512.10(2)(d)?					
NR 512.10 SUBSURFACE DATA ANALYSIS.					
(1) Does the subsurface investigations presented in the report include the minimum following requirements (unless an alternative geotechnical investigation plan was accepted in writing)?					
(2) SOIL AND BEDROCK DESCRIPTIONS.					
(a) Have grain size distributions, geologic origin, USCS classification been provided for each major soil unit?					
(b) Does the report describe the lateral and vertical extent of each major soil unit including descriptions of any lenses or other heterogeneities, and if bedrock was encountered by borings, the strike and dip of any rock formations?					
(c) Does the report describe the presence and frequency of joints, fractures, voids, solution openings, faults or other structural features?					
(d) Does the report include a table summarizing the following testing data by major soil unit? ___ Geologic origin ___ Liquid limit ___ Sample ID number ___ Plasticity index ___ Percent gravel, sand, silt and clay ___ Percent P200 content ___ Lab & field hydraulic conductivities ___ Statistical analyses for averaged values					
(3) HYDROGEOLOGIC PROPERTIES AND FUNCTIONS. Does the report discuss the following properties and functions of each saturated soil unit or rock formation?					
(a) Hydraulic conductivity					
(a) Role as a confining unit					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(c) Hydraulic connections to other units					
(d) Actual/potential use as a water supply unit					
(e) Depth to groundwater & seasonal variations in groundwater elevations					
(f) Location & extent of perched groundwater					
(f) Local & regional flow directions including the locations of groundwater divides					
(h) Horizontal & vertical gradients					
(4) APPENDIX. Does the Appendix include the following?					
<input type="checkbox"/> All raw data <input type="checkbox"/> Soil boring log information forms 4400-122 <input type="checkbox"/> Well information forms (4400-89) <input type="checkbox"/> Groundwater and surface water level measurements <input type="checkbox"/> Monitoring well development forms (4400-113B) <input type="checkbox"/> Baseline groundwater quality sampling <input type="checkbox"/> Monitoring well construction forms (4400-113A) <input type="checkbox"/> Soil test results <input type="checkbox"/> Well/drillhole/borehole abandonment forms 3300-5B					
NR 512.11 DATA PRESENTATION. Are the results from the subsurface investigation presented on 24" x 36" plan sheets?					
(1) EXISTING CONDITIONS PLAN SHEET. Is a detailed topographical survey of all areas within 1500 feet of the proposed limits of filling provided (minimum scale 1" = 200' with maximum 2 foot contour interval) and does it show all of the following:					
(a) 100-year floodplain area					
(b) Surface waters, including intermittent & ephemeral streams & wetlands					
(c) Residences, buildings, utility lines & other cultural features					
(d) Surrounding land uses (residential, commercial, agricultural & recreational)					
(e) Property & proposed limits of filling, including any previous fill areas					
(f) Access control including fences & gates					
(g) Water supply wells including public, private, irrigation, & stock					
(h) Boring, test pit, and well locations for the proposed landfill					
(i) Other structures including storm water control systems, agricultural drain tile systems, access & internal roads, storm & sanitary sewerage systems					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(2) GEOLOGIC CROSS-SECTIONS.					
Have geologic cross-sections been constructed as follows: ___ Through <u>all</u> borings, both perpendicular and parallel to the proposed landfill's baseline ___ For proposed contiguous expansions, through all previous borings for the existing landfill ___ 1 cross-section parallel to groundwater flow					
Do the geologic cross-sections include the following:					
(a) Inferred/questionable lithostratigraphic boundaries shown with a dashed line or question mark					
(b) Numbers/symbols used to label each major soil unit with a key that describes each major soil unit including geologic description and origin, USCS classification and color					
(c) Boring logs show USCS classification, geologic origin, grain size analyses, Atterberg limits, and field hydraulic conductivities					
(d) ___ Well construction details shown to scale including well screen and filter pack length, upper and any lower seals, and stabilized water levels measured on same day ___ If two or more observation wells are presented, a line representing the water table surface drawn and date the measurements were taken specified in the key					
(3) WATER TABLE MAPS.					
___ Are at least two water table maps (seasonal high & low) provided?					
___ For a proposed contiguous expansion, do the water table maps include the observation wells and measured water table elevations for each observation well for the existing landfill?					
___ Has a bedrock piezometric map been provided if 3 or more bedrock wells have been installed?					
(4) BEDROCK MAP.					
Has a bedrock contour map been provided if 3 or more borings have been drilled into bedrock?					
(5) FLOW NET.					
Has a flow net , parallel to the direction of groundwater flow to show distribution of recharge & discharge been provided?					

Facility Name: _____

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	Y	N	NA		
NR 512.12 WASTE AND LEACHATE CHARACTERIZATION.					
(1) INDUSTRIAL WASTES. Have the physical & chemical characteristics of any high volume industrial waste anticipated to individually constitute more than 5% of the total proposed design capacity and leachates been analyzed and described?					
(2) MUNICIPAL WASTES. Does the report include actual field leachate data from existing landfills of similar size, design and waste type or an estimate of the anticipated leachate strength and quality?					
(3) LEACHATE GENERATION. Does the report include the estimated daily volume of leachate that will be collected for unclosed and closed areas?					
(a) A minimum of 6 inches per year for all unclosed areas of the proposed limits of filling for landfills with a composite liner and a minimum of 4 inches per year for landfills that do not have a composite liner?					
(b) One inch per year for all closed areas of the proposed limits of filling for landfills with a composite cap and a minimum of 3 inches per year for all closed areas that will not have a composite cap?					
NR 512.13 CONSTRAINTS ON LANDFILL DEVELOPMENT.					
(1) LOCATIONAL CRITERIA AND PERFORMANCE STANDARDS. Does the report contain a demonstration that the proposed landfill will meet the locational and performance standards in s. NR 504.04?					
(2) GEOTECHNICAL INFORMATION. Does the report contain an analysis of the following:					
<input type="checkbox"/> geologic <input type="checkbox"/> hydrogeologic <input type="checkbox"/> topographic <input type="checkbox"/> hydrologic features of the proposed property that may be favorable or unfavorable for landfill development					
(3) CONSTRUCTION AND OPERATION. Does the report contain a discussion of the following materials and support services required for landfill construction and operation?					
<input type="checkbox"/> Leachate treatment alternatives <input type="checkbox"/> Identification and detailed evaluation of the capability of any proposed wastewater treatment plant(s) to treat the leachate <input type="checkbox"/> Quality & quantity of liner and cap materials <input type="checkbox"/> Specialized engineering structures to support landfilling activities					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(4) EXISTING FACILITY PERFORMANCE. For a proposed contiguous, horizontal or vertical expansion, does the report evaluate the compliance status and performance of the existing landfill?					
(a) Does the report reference the discussion on the compliance status and performance of the existing landfill contained in any applicable pre-feasibility report and include any changes since the submittal of that report?					
(b) Does the report contain an exemption request under s. NR 140.28 and in accordance with s. NR 507.29 if a PAL or ES has been attained or exceeded at the site?					
NR 512.14 PROPOSED PRELIMINARY DESIGN.					
(1) PRELIMINARY DESIGN REPORT.					
(a) Does the report contain preliminary materials balance calculations for the necessary volume of clay to construct the liner and final cap of the first phase of the landfill?					
(b) Does the report discuss proposed methods for leachate and gas control? ___ Leachate collection ___ Gas collection ___ Leachate containment ___ Gas containment ___ Leachate treatment ___ Gas treatment					
(c) Does the report discuss the proposed operating procedures, including the general filling sequence?					
(d) Does the report include a description of the proposed monitoring programs to be implemented to meet the requirements of chs. NR 140 and 507? ___ Groundwater ___ Air ___ Leachate ___ Unsaturated zone ___ Surface Water ___ Other monitoring ___ Gas ___ Does the report contain a sampling plan for all monitoring devices in accordance with s. NR 507.16?					
(e) ___ Does the report discuss the proposed methods for storm water control in accordance with ch. NR 216? ___ Does the report discuss visual screening?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(f) Does the report discuss the proposed final use?					
(2) PRELIMINARY ENGINEERING PLANS. (24" x 36" Plan Sheets w/max. 5-foot contours):					
(a) Does the report include an existing conditions map that shows the following? <input type="checkbox"/> Proposed access <input type="checkbox"/> Associated buildings <input type="checkbox"/> Limits of filling <input type="checkbox"/> Storm water diversions <input type="checkbox"/> Internal roads <input type="checkbox"/> Sedimentation basins <input type="checkbox"/> Load out & scale facilities <input type="checkbox"/> Phase of facility development <input type="checkbox"/> Sub-base & base grades <input type="checkbox"/> Slopes <input type="checkbox"/> Leachate collection system <input type="checkbox"/> Leachate storage tank <input type="checkbox"/> Lift station/sewer hook up					
(b) Does the report include geologic cross-sections plan sheet(s) that display the following information? <input type="checkbox"/> Present topography <input type="checkbox"/> Proposed final grades <input type="checkbox"/> Proposed sub-base grades <input type="checkbox"/> Liner and final cap configuration <input type="checkbox"/> Proposed base grades					
(c) Does the report include a plan sheet showing the proposed closure sequence and final grades?					
NR 512.15 IDENTIFICATION OF SOIL BORROW SOURCES. Note: It may be necessary to obtain federal, state and/or local permits prior to excavating soil from a borrow source near surface waters or wetlands. For example, s. 30.19(1)(c), Stats., requires a permit for grading or removing top soil from the bank of any navigable stream, lake or body of navigable water where the area exposed by such grading or removal will exceed 10,000 square feet. It is the responsibility of the applicant or property owner to request an initial site inspection in accordance with ch. NR 509 and to obtain any federal, state and/or local permits that are required.					
(1) Does the report include a copy of the department's initial site inspection evaluation letter for the proposed borrow source(s) needed to construct, operate and close the first phase of the landfill?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(2) Does the report include documentation for soil borrow sources as described in NR 504.075 for the proposed soil borrow sources designated to be used in the construction, operation or closure of the first phase of the landfill? See below.					
NR 504.075 SOIL BORROW SOURCES.					
(1) GENERAL.					
Is the soil borrow source being developed for the purpose of construction, operating or closing a landfill? If yes, this section applies. Note: Written approval from the department shall be obtained prior to initiating soil borrow activities at any borrow source subject to these requirements.					
(2) EXEMPTIONS. The following activities are exempt from the requirements of this section:					
(a) ___ The production of processed aggregate products. ___ Excavation of soils from construction projects off of the landfill property and not being used for compacted clay liner or capping layer, soil barrier layer, leachate collection layer or final cover drain layer?					
(b) Is the soil borrow source within the proposed or approved limits of filling for a landfill? If yes, then the landfill is not subject to the requirements of subs. (3) and (4)(b).					
(3) INITIAL SITE INSPECTION.					
Does the report include a copy of the department's initial site inspection for each proposed borrow source?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(4) LOCATIONAL INFORMATION.					
(a) Does the submittal describe the following: <input type="checkbox"/> Total acreage <input type="checkbox"/> Ownership <input type="checkbox"/> Location (¼-¼ section) <input type="checkbox"/> Present land use <input type="checkbox"/> Transportation routes <input type="checkbox"/> Any access restrictions <input type="checkbox"/> Travel distance to and from landfill					
(b) Does the submittal include the following: <input type="checkbox"/> Surface water drainage patterns <input type="checkbox"/> Significant hydrologic features (surface waters, springs, drainage divides and wetlands) <input type="checkbox"/> Areas of special natural resource interest (critical habitat or state/local natural areas) <input type="checkbox"/> Historical/archaeological areas within and adjacent to proposed limits of excavation					
(5) FIELD AND LABORATORY INVESTIGATIONS FOR CLAY BORROW SOURCES AND SOIL BARRIER LAYER SOURCES.					
Does the submittal for soil borrow sources include field and laboratory investigations to define the physical characteristics of any clay borrow source or soil barrier layer source designated to be used for a liner or final cover?					
Has an alternate geotechnical investigation program been approved by the department in writing prior to the field and laboratory investigation? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, does the report include a copy of and justification for any approved alternative geotechnical investigation program? Note: An alternative geotechnical investigation program may be submitted in cases where previous information exists regarding the proposed soil borrow source.					
(a) Have the required number of test pits or borings been completed on a uniform grid pattern across the proposed borrow source(s)? <input type="checkbox"/> 10 test pits/borings for the first 5 or less acres <input type="checkbox"/> 1 additional test pit/boring for each additional 3 or less acres <input type="checkbox"/> Proposed acreage of proposed borrow source(s) <input type="checkbox"/> Number of test pits/borings required <input type="checkbox"/> Number of test pits/borings made <input type="checkbox"/> Have logs identifying geologic origin, testing results, USCS classification, and visual description of each major soil unit encountered also been included?					
(b) Does the report include Atterberg limits and grain size analyses to 0.002 mm particle size for 2 samples from each test pit/boring?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(c) Does the report include the relationship of water content to dry density using either the modified or standard Proctor method (curves must be developed with a minimum of 5 points) for 1 sample from each major soil unit and no fewer than 3 samples for uniform clay deposits?					
(d) Does the report include laboratory hydraulic conductivity test results for each sample used to develop the Proctor curves?					
(6) STOCKPILING.					
Does the report include discussion of segregating stockpiled soils by USCS soil type, soil gradation, Atterberg limits and compaction specifications? Note: Stockpiling of soils obtained from clay borrow sources and soil barrier layer sources for landfill liner of final cover construction shall be conducted in an organized manner that minimizes mixing of dissimilar soil types. Soils from differing sources may not be commingled unless soil properties are similar.					
(7) DATA PRESENTATION FOR ALL CLAY BORROW SOURCES AND SOIL BARRIER LAYER SOURCES. Does the submittal for soil borrow sources for clay and soil barrier layers include the following?					
(a) Calculated volume of soil needed and the volume of acceptable soil available					
(b) Property boundaries and test pit/boring locations on a topographic map (scale: 1" = 500') that extends a minimum of 500 feet beyond the proposed borrow source					
(c) Isopach map showing thickness of acceptable soil					
(d) Description of methods for separating acceptable soil from unacceptable soil					
(e) Proposal for maintaining drainage and sedimentation control					
(f) All data from the testing program					
(8) DATA PRESENTATION FOR OTHER BORROW SOURCES. Does the submittal for soil borrow sources other than those used for clay and soil barrier layers include the following?					
(a) Property boundaries shown on a topographic map (scale: 1" = 500') that extends a minimum of 500 feet beyond the proposed borrow source					
(b) Proposal for drainage and sedimentation control					
(9) STORMWATER MANAGEMENT.					
Does the submittal for a soil borrow source include a stormwater management plan that complies with the requirements of s. NR 504.09(1)(a) to (f) and (h) to (j), unless the borrow source is subject to other permits with equivalent authority and requirements, such as a stormwater discharge permit or non-metallic mining reclamation permit?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(10) RECLAMATION OR BORROW SITES.					
(a) Does the report include reclamation plans for borrow sources on the landfill property that include the following: ___ post-mining land use that is integrated with the existing and proposed drainage ___ surface water discharge requirements ___ grades and final use of the landfill Is the reclamation plan consistent with NR 135.06 to 135.12?					
(b) For soil borrow areas not on landfill property, is the reclamation plan consistent with NR 135? If required, has a reclamation plan been submitted and a nonmetallic mining reclamation permit been received from the appropriate regulatory authority?					
(11) OTHER REQUIRMENTS.					
(a) If the proposed clay borrow source(s) contains less than a five foot, but greater than 2 foot uniform clay thickness, does the report contain a construction methodology and documentation procedure to ensure the liner meets the soil index property requirements of s. NR 504.06(2)(a)?					
(b) Does the report include a description of measures to be taken to comply with wetlands protection requirements, runoff and sediment controls and surface water discharge permit requirements and to minimize effects on areas of special natural resource interest and historical or archaeological areas within and adjacent to the proposed limits of excavation?					
NR 512.16 ENVIRONMENTAL REVIEW. To aid the department in complying with ch. NR 150, Wis. Adm. Code, the report must include an environmental analysis (EA) section. Does the EA section include the following: Note: Information provided in previous sections of the ISR, any applicable pre-feasibility report, or the feasibility report may be referenced to satisfy this section's requirements.					
(1) PROJECT SUMMARY. Does the EA section contain a Project Summary that includes the following:					
___ Brief overview of the project ___ Listing of statutory authority ___ Relevant local, state and federal permits or approvals required ___ Need for exemptions, zoning changes & other special permits or approvals					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(2) PROPOSED PHYSICAL CHANGES. Does the EA section contain a brief description of the proposed physical changes that includes all of the following:					
(a) Changes in terrestrial resources to include a discussion of the following: ___ Quantity of soil to be excavated and the lateral extent of soil removal ___ Quantity and source of soils designated to be used in the construction, operation or closure of the landfill ___ Description of all earthen modifications (such as clearing & grubbing, excavation, soil placement needed to reach the proposed sub-base grades, construction of access roads, stockpiles and storm water controls).					
(b) Changes in aquatic resources including: ___ Potential impacts to streams, wetlands, ponds, lakes & flowages ___ Discharge rates and volumes under existing conditions as well as that anticipated during active operations and following closure for: ___ Groundwater control structures ___ Leachate collection systems ___ Storm water control structures ___ Information or reports on how the proposed landfill and soil borrow sources for the first phase of the proposed landfill comply with s. 30.19 Stats., and ch. NR 103.					
(c) Discussion of buildings, treatment units, roads and other structures (such as sedimentation basins and fences) to be constructed including: ___ size of the facilities (i.e., structures) ___ miles of road to be constructed:					
(d) Emissions and discharges (such as dust, engine exhaust, odors, noise, gases, leachate, storm water and collected groundwater) associated with the following: ___ Landfill preparation ___ Closure ___ Construction ___ Post-closure ___ Operation					
(e) Other changes anticipated with landfill development					
(f) Maps, plans and other descriptive material to clarify the discussion such as but not limited to the following: ___ County map ___ Proposed service area map ___ USGS map ___ Plat map ___ Zoning map ___ County wetlands map ___ Soils map ___ Landfill development plan					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(3) EXISTING ENVIRONMENT. Does the EA section contain a brief description of the existing environment that may be affected that includes the following:					
(a) A description of the existing physical environment including: ___Regional & local topography ___Geology ___Surface waters & drainage features ___Hydrogeologic conditions ___Air quality ___Wetlands ___Designated soil borrow sources					
(b) A description of the following: ___dominant aquatic and terrestrial plant and animal species and habitats found in the area including: ___Any threatened/endangered species ___Amount, type & hydraulic value of wetlands					
(c) Land use including dominant features and zoning in the area					
(d) Social and economic conditions including any ethnic or cultural groups					
(e) Other special resources such as: ___Archaeological ___Historical ___State/local natural areas ___Prime agricultural lands					
(4) ENVIRONMENTAL CONSEQUENCES. Does the EA section contain a brief discussion of the probable adverse and beneficial impacts including primary, indirect and secondary impacts that includes the following:					
(a) Physical impacts associated with landfill design, construction and operation, including: ___Air quality ___Windblown paper ___Dust ___Visual impacts					
(b) Biological impacts including: ___Destruction and creation of habitat ___Alteration of the physical environment ___Impacts to endangered/threatened species					
(c) Impacts on land use					
(d) Social and economic impacts (such as effects on taxes, noise, traffic and roads, and consistency with local planning and zoning) to the following groups served by the landfill: ___Local residents ___Communities ___Cultural groups ___Industries					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(e) Other special resources such as but not limited to: <input type="checkbox"/> Archaeological <input type="checkbox"/> Historical <input type="checkbox"/> State/local natural areas <input type="checkbox"/> Prime agricultural lands					
(f) Probable adverse impacts that cannot be avoided including: <input type="checkbox"/> Groundwater and surface water impacts <input type="checkbox"/> Modifications of topography <input type="checkbox"/> Soil borrow source limitations on development around the landfill <input type="checkbox"/> Loss of agricultural or forest land <input type="checkbox"/> Displacement of wildlife [in and around the landfill] <input type="checkbox"/> Adverse aesthetic impacts for people					
(5) ALTERNATIVES. Does the report identify, describe and discuss feasible alternatives?					
Alternatives: <input type="checkbox"/> Taking no action <input type="checkbox"/> Enlarging, reducing or modifying the project to mitigate impacts <input type="checkbox"/> Other landfills, locations or methods to the proposed action and their impacts					
Has particular attention been given to alternatives which might avoid some or all adverse environmental impacts, including planned and existing waste reduction & recycling, incineration, solid waste disposal, and transfer facilities that may serve to handle the waste expected to be disposed of at the proposed landfill, taking into account the economics of waste collection, transportation and disposal?					
NR 512.17 NEED AND DESIGN CAPACITY. Note: In determining the design capacity of the proposed landfill under s. 289.29(1)(d), Stats., the department considers the effect of planned and existing waste reduction and recycling activities and other existing or proposed competing solid waste facilities, regardless of whether or not the other facilities are located within the service area, as defined under s. 289.28(1), Stats., of the proposed landfill.					
Is the proposed landfill part of a prospection or mining operation or a landfill for the disposal of waste generated by a pulp or paper mill and exempt under s. 289.28(2)? <input type="checkbox"/> yes <input type="checkbox"/> no					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
<p>In addition to the information specified in s. 289.28(1), Stats. (below) does the report include the following:</p> <p>___ Identification of the following activities/facilities used to manage solid wastes generated within the anticipated service area of the proposed landfill:</p> <p>___ Identification of existing waste reduction/recycling activities</p> <p>___ Identification of existing solid waste facilities</p> <p>___ Remaining design capacity of each facility identified</p> <p>___ Information for the activities/facilities, identified above, for which a significant commitment or implementation or development has been made</p>					
289.28(1), Stats. DETERMINATION OF NEED.					
(a) An approximate service area for the proposed facility which takes into account the economics of waste collection transportation and disposal.					
(b) The quantity of waste suitable for disposal at the proposed facility generated within the anticipated service area.					
(c) The design capacity of the following facilities located within the anticipated service area:					
1. Approved facilities, including the potential for expansion of those facilities on contiguous property owned or controlled by the applicant.					
2. Nonapproved facilities which are environmentally sound.					
3. Other proposed facilities for which feasibility reports are submitted and determined to be complete by the department.					
4. Facilities for the recycling of solid waste or for the recovery of resources from solid waste which are licensed by the department					
5. Proposed facilities for the recycling of solid waste or for the recovery of resources from solid waste which have plans of operation which are approved by the department.					
6. Solid waste incinerators licensed by the department.					
7. Proposed solid waste incinerators which have plans of operation which are approved by the department.					
(d) If the applicant is a municipality and the need for a proposed facility cannot be established under the criteria listed under (a) through (c) above, does the report demonstrate need based on the extent to which the proposed facility is needed to replace other facilities of that municipality at the time those facilities are projected to be closed in the plans of operation?					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
289.29(1)(d), Stats. CRITERIA FOR DETERMINATION OF FEASIBILITY.					
Does the report indicate that the anticipated site life is between 10 to 15 years for a new facility or less than 15 years for an expansion? ___ yes ___ no					
NR 512.18 EVALUATION OF ALTERNATIVES TO LAND DISPOSAL. Does the feasibility report contain an analysis of the alternatives to land disposal of waste, including potential and existing waste reduction, reuse, recycling, composting and energy recovery initiatives and services?					
(1) ANALYSIS OF ALTERNATIVES TO LAND DISPOSAL. Does the analysis include a discussion of the trends affecting the waste stream, an estimate of the cost per ton for each alternative, when available and an evaluation of the feasibility of implementing each potential alternative?					
(2) EVALUATION OF IMPLEMENTING ALTERNATIVES TO LAND DISPOSAL. Does the feasibility report evaluate the feasibility of implementing waste reduction initiatives and recycling services in connection with the proposed landfill and describe any waste reduction incentives and recycling services to be provided at the proposed landfill?					
NR 512.19 NONCOMPLIANCE WITH PLANS OR ORDERS					
Does the report include the following: ___ Identify all persons owning a 10% or greater interest in the applicant or assets of applicant ___ Identify other Wisconsin solid and hazardous waste facilities owned by applicants ___ Indicate whether all plan approvals and orders for facilities owned by applicants are being complied with					
289.24(1)(c), Stats. COUNTY SOLID WASTE MANAGEMENT PLANS					
Does the feasibility report contain a description of how the proposed facility relates to any applicable county solid waste management plan approved under s. 289.10, Stats? Note: Applicants must address all DNR approved County plans within their proposed service area.					

Facility Name: _____

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
289.24(1)(d) ADVISORY AND PUBLIC OPINION PROCESS					
Does the feasibility report contain a description of the advisory process undertaken by the applicant prior to submittal of the feasibility report to provide information to the public and affected municipalities and to solicit public opinion on the proposed facility?					

Legal Note: This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.