INFORMATION REQUIRED IN AN IPWW APPLICATION PACKAGE

Industries are developing new processes and chemicals each year, which produce wastewater for disposal. Contaminants in the wastewater effluents may be in such high concentrations that the wastewater discharge results in groundwater contamination or excessive nutrient loading and bacterial contamination of surface waters. Therefore, there are potential hazards to the environment from the various chemicals, heavy metals, and organic and priority pollutants occurring in industrial process wastewater.

As North Carolina continues to grow, the regulation of industrial wastewater permitting becomes increasingly important to protect the surface and ground waters of the state – our most precious resources. Sources of industrial wastewater include manufacturing, processing, institutional, commercial businesses, mining, agricultural production and processing as well as wastewater from the cleanup of contaminated sites. The discharge of industrial wastewater is subject to state and federal rules, regulations, policies and standards.

Any industrial process wastewater generator shall be required to complete, sign and submit to the Local Health Department (LHD) an Industrial Process Wastewater Water (IPWW) system application package. Application fees, procedures, and forms may be prescribed by the LHD. All applicable fees must be paid when the application for an Improvement Permit (IP) is submitted.

State review should only be requested after the LHD has received and reviewed the consultant's submittal for completeness in accordance with these requirements.

Following review of the application package for completeness, the LHD shall forward **THREE** complete IPWW packages to the On-Site Water Protection (OSWP) Branch Central Office. **Incomplete packages will be returned to the applicant and/or LHD.**

1. **Identification information:** Complete the LHD on-site wastewater system application form in conjunction with the IPWW project information form. The required information includes, but is not limited to the following: project title, location, name, address, telephone number and fax number of the applicant, authorized agent, applicant's engineer and applicant's soils consultant.

2. **Facility Activities:** The application shall include statements describing the type of industry or business and the major end products manufactured, services supplied and byproducts. A qualitative description of the industrial processes that occur at the facility, especially those resulting in a wastewater discharge shall also be included. Operation and production schedules (the number of shifts and each shift's duration) as well as the number of employees (the total number and the number per each shift) must be quantified.

3. **Facilities Layout:** The submittal shall include a facilities layout or floor plan showing major process components, floor drains, plumbing, all sources of wastewater discharge and any wastewater pretreatment components internal to the facility.

4. **Existing System Components:** All existing wastewater components are to be field located, identified and evaluated for structural integrity. The watertightness of all existing tanks shall be verified. Any existing components proposed to be abandoned shall be identified and the proposed method of abandonment outlined.

5. **Waste Stream Discharge Restrictions:** The Material Safety Data Sheets (MSDS) for all chemicals used at the facility with the potential for entering the waste stream must be provided. This should include all chemicals used in the facility processes (including solvents and cleaning formulas). An industrial user may not introduce into an IPWW system, pollutants or process wastewaters which fall into the following categories:

    a. To the extent possible, substances discharged into the onsite disposal system shall be pH neutral. Chemicals exhibiting excessive pH ranges, (i.e., pH< 4.0 or pH > 10.0), shall not be introduced into

the subsurface disposal system. Unless the pretreatment system is specifically designed to accommodate such a discharge, waste streams with a pH of less than 6.0 or greater than 9.0 will not be discharged. No substances that would cause corrosive structural damage shall be discharged. Waste streams exhibiting excessive pH characteristics may require additional pretreatment to accomplish sufficient pH neutralization.

b. Substances that interfere with the biological degradation processes of the system pretreatment components shall not be introduced into the subsurface disposal system without appropriate pretreatment. Constituents in this category would include antiseptics, antibiotics, preservatives and fixing agents. Pretreatment of these substances may include but is not limited to sand filtering.
c. Excessive concentrations of salts, i.e., sodium, calcium, potassium shall not be introduced into the subsurface disposal system without appropriate pretreatment.
d. Substances that pass through the system and endanger underground sources of drinking water must be appropriately pretreated prior to discharge.
e. Constituents exhibiting a fire or explosion hazard shall not be introduced into the onsite system.
f. Hazardous wastes, as defined by NCGS 130A-290 (8), shall not be introduced into the onsite system.
g. Constituent concentrations that are in excess of the best available technology (BAT) industry specific standards developed for dischargers to surface waters shall not be introduced into the onsite system.

6. Flow Information: Design daily flow is to be determined as stipulated in 15A NCAC 18A .1949. Total average flow, peak flow, irregular flow patterns, and flow from <u>each process</u> resulting in a wastewater discharge shall be quantified. The basis for flow determination, either estimated or recorded flow data, must also be included as well as a description about wastewater minimization activities (reuse, recycle, low flow fixtures, etc). Best management practices (BMPs) such as the use of extreme water conserving fixtures are highly recommended for industrial process wastewater generators. Examples of these types of fixtures include: toilets which use no more than 1.6 gallons per flush (gpf), urinals which use no more than 0.5 gpf, showers which use no more than 2.0 gallons per minute (gpm) and spring-loaded faucets which use no more than 1.0 gpm.

7. Soil and Site Evaluation: The soil and site evaluation shall be conducted by a person licensed or registered to perform the work when required in accordance with NCGS 89E (Geologists) or 89F (Soil Scientists). Please refer to 15A NCAC 18A .1970(p) when a special site evaluation is required when proposing advanced pretreatment or if required based on the proposed dispersal system type. If a North Carolina Professional Engineer (NCPE) is required to design the system, a NC Licensed Soil Scientist (NCLSS) is required to conduct the site evaluation and generate the soils report.

8. A detailed evaluation completed by the LHD or the applicant's soils consultant must be submitted indicating the soils suitability and proposed hydraulic loading rate, i.e., the long term acceptance rate (LTAR) for the primary and repair disposal areas. This report must include the locations of all soils boring or pits, a description of the soils encountered and relevant depths. The depth to seasonal wetness must be determined either by soil boring or estimated with substantial justification. If a NCLSS conducts the soils evaluation, a letter from the LHD must be provided indicating concurrence with the soils report. **<u>ONE</u>** copy of each of the following shall be forwarded to the OSWP Regional Soil Scientist (RSS):

a. Consultant's soils reports;
b. Proposed site layout, including plans;
c. any required hydrogeologic evaluations; and
d. The LHD's site evaluation report.

9. An overall site plan drawn to scale of no less than 1 inch = 60 feet showing the dimensions of the property, a North arrow, the location of the house or facility, pretreatment components, property lines, utilities, other pertinent site features, and all of the following information shall be submitted. The information to be shown on the site plan includes the following.

a. Property lines with dimensions, fixed visible reference points, and vertical and horizontal benchmarks.
b. Contour lines on at least two-foot intervals or spot elevations when there is less than a two-foot elevation difference across the site. Alternatively, lines shall be field located on contour map with locations and relative elevations shown on the detailed site plan.
c. Proposed structures, vehicle accesses and appurtenances with setbacks to fixed reference points.

d. Any existing or proposed storm water management features within 50 feet of any part of the proposed system and repair area.
e. All proposed pretreatment system components, collection lines, supply lines, initial disposal field and repair areas shall be shown with dimensions and setbacks to fixed reference points.
f. The location of the soil/saprolite/fill profiles for the system and repair areas, including labeling of the profiles to match the individual profile descriptions.
g. The location of water table monitoring wells, location of hydraulic conductivity measurements (in disposal fields and at what depths measurements were conducted), etc. Water table monitoring well elevations (top of casing and ground surface) shall be referenced to established horizontal and vertical benchmarks.
h. Number and location of pits, auger borings, water table monitoring wells and hydraulic conductivity measurements is site specific, but all items must be individually labeled and identified on the plans.
i. Proposed or existing private or public water supply components, (wells, water lines, etc.) relative to the proposed pretreatment system, sewer lines, initial subsurface system and repair areas.
j. The location of all non-potable wells on the property (including UST groundwater monitoring wells, sampling wells, groundwater monitoring wells, irrigation wells, etc.) shall be shown on the plans.
k. Drainage modifications and modifiers, where applicable, including:
    i. Location of existing and proposed drainage features and modifiers;
    ii. Depth of drains, slope and elevations relative to a vertical benchmark;
    iii. Width of drains, including open ditches;
    iv. Outfalls and elevations relative to a vertical benchmark;
    v. Foundation drains;
    vi. Existing and proposed drainage system design and construction specifications; and
    vii. Other nearby features that may affect the drainage on the site (quarries, surface waters, areas of cut or fill, etc.).
l. New, proposed and existing easements, encroachment agreements, right of ways, access to offsite areas and utilities.
m. Location of any areas to be modified by cutting, filling or covering.
n. Existing or proposed site modifications or improvements.
o. All other features that would have a setback which would impact the on-site subsurface wastewater system and repair area.

Additional required information for the soil and site evaluation:

a. Soil/saprolite/fill profile descriptions (not in paragraph format) labeled to match field designation in a comparable format to the site evaluation form in use by the On-Site Water Protection Branch. Copies are available online at: http://www.deh.enr.state.nc.us/osww_new/new1//images/Forms/SiteEvalForm.pdf.
b. Proposed long term acceptance rate shall be indicated for each profile described, the initial system, and the repair area.
c. List of any special equipment and methodology used to perform the evaluation (Ksat equipment – specific manufacturer of equipment and a copy of the Users Manual, pits, etc.).
d. Results of in-situ hydraulic conductivity analyses, groundwater mounding analysis, lateral flow analysis, and monitoring or modeling of existing or projected depth to a soil wetness condition based upon the procedures of Rule .1942. Field measurement log sheets and calculations shall be included in or appended to the report. Information must be supplied to support length of time that the hydraulic conductivities were run, showing compliance with user's manual for steady state determination.
e. A detailed description of any existing or proposed site modifications or improvements. The plans shall include specifications for each modification.

The following items shall be clearly marked and identified in the field for the site visit. When an instrument is required for elevation determination, an engineer's level or equivalent shall be used.

a. Property lines, fixed reference points, horizontal and vertical benchmarks;
b. Location of soil/saprolite/fill profiles;
c. Location of water table monitoring wells, hydraulic conductivity measurements, etc.;
d. Collection, treatment and disposal components for the proposed initial system and the repair
e. system;

f. Primary structures and appurtenance (pools, garages, driveways, etc.);
g. Location of water supply components;
h. Location of storm water management components;
i. Any existing or proposed drainage modifications; and
j. Location of easements, encroachment agreements, right of ways, access to off-site areas and utilities.

10. **Site Hydrology:** The OSWP RSS shall determine if there is a need for a hydrologic assessment of the site. The applicant's soil scientist or hydrogeologist shall provide adequate substantiation that demonstrates that the performance requirements of 15A NCAC 18A .1946(4) shall be met, provide substantiation for proposed LTAR and assessment of projected compliance with groundwater standards, including justification. Information required typically includes, but is not limited to:
    a. In-situ hydraulic conductivity measurements in the most restrictive horizon within two feet of the trench bottom to support selected LTAR;
    b. Logs from deep borings (usually 10-20 feet deep) identifying restrictive layers, relevant changes in texture and density, and aquifer boundaries;
    c. In-situ lateral hydraulic conductivity measurements of effective shallow aquifer;
    d. Groundwater mounding analysis (level sites) or wastewater conveyance capacity analysis (sloping sites); and
    e. Contaminant transport assessment showing compliance with groundwater standards at property lines or at any water supply sources within or adjacent to property.

11. **Waste Stream Characterization:** The waste stream must be fully characterized by chemical analysis of the waste stream to determine whether or not the effluent exhibits any hazardous characteristics or the potential for a violation of NC Groundwater Standards. The applicant shall include the analytical results with the submittal. The types and anticipated concentrations of any chemical constituents contained in the discharge must be described and characterized. Waste stream characterization should be accomplished by review of the facility processes that may contribute to the industrial component of the wastewater discharge and by chemical sampling of the effluent.
    a. Wastewater sampling shall be conducted <u>at a minimum</u> of two-point in the wastewater stream: (1) prior to treatment; and (2) post-treatment prior to discharge to the disposal area. Sample collection may be required at other points dependent on characteristics, type of treatment and surrounding areas.
    b. Sampling should be conducted by personnel familiar with state-approved sampling protocols. Improper sampling may result in invalid or inaccurate results.
    c. Sample analysis must be conducted by a laboratory certified by the State of North Carolina for wastewater analysis.
    d. Sampling parameters will be determined by the expected nature of the proposed effluent based on the facility activities and waste stream to be discharged.
    e. Samples must be taken either from an existing or similar facility during normal working hours.
    f. Initially, a set of two (2) samples should be collected. The first at a point near the beginning of the wastewater stream and the second as far downstream in the waste stream as is feasible. The first collection point is used to determine the strength of the wastewater prior to any treatment. The second collection point is to determine wastewater characteristics after treatment. Therefore samples need to be collected from a point near the distribution to the disposal area(s). Typical sample collection points are at the effluent end of the septic tank, the disposal area dosing tank, and the distribution box or manifold.
    g. The applicant's NCPE should contact OSWP to confirm the appropriate sampling regimen. The proposed sampling regimen must include the sampling interval and the sampling parameters. Based on observed concentrations, the applicant may request modification to the sampling regimen, i.e., a reduction in the sampling frequency and a reduction in the number and type of sampling parameters.
    h. Waste stream characterization should be completed prior to application submission so that any pretreatment requirements resulting from the characterization may be included in the design.

12. **IPWW System Review Transmittal Checklist:** The "IPWW Plan Review Transmittal Checklist" is to be completed by the applicant's engineer, reviewed by the LHD and signed by the applicant/applicant's agent and a NC Environmental Health Specialist (EHS) from the LHD. Signature by the EHS indicates that the IPWW package is complete and that the LHD concurs that all items on the checklists appear to

have been adequately addressed.

13. **Site Plan:** The application shall include a site plan based on a survey plat showing the following:
    a. All corners of the property and property boundaries;
    b. A bench mark with elevation;
    c. Any sanitary sewer or water supply lines;
    d. All water supply wells within a 500-ft radius of the proposed disposal field(s) and repair area(s);
    e. Storm drainage or stormwater management facilities;
    f. Significant surface features such as buildings, roads, etc. including the classifications of those features;
    g. Surface waters and any designated wetlands;
    h. Locations of the proposed subsurface system and related structures;
    i. Locations of any soil borings or soil test pits;
    j. Topographic map of the property (or in the vicinity of the proposed disposal field and repair area if the property is extremely large) with at least 2-foot contour intervals; and
    k. A vicinity map.

14. **System Design:** Unless specifically exempted by OSWP in writing, the application shall include the system design in the form of engineering plans and specifications completed and sealed by a registered NCPE. The design shall be in accordance with applicable rules and guidelines, and shall incorporate relevant engineering calculations and findings of the soil and site evaluations.

    The primary concern with IPWW is the risk posed to the environment by the discharge of IPWW constituents. The engineering design shall address how the risk posed by operation of the proposed system and the discharge of relevant IPWW constituents will be minimized. It must be shown that IPWW constituents are either to be eliminated or minimized by internal facility processes or pretreated to acceptable levels prior to discharge to the onsite wastewater system.

15. **Pretreatment**: Pretreatment of IPWW constituents shall be accomplished using BAT or best engineering practice to ensure that minimal risk is posed by the IPWW discharge from the proposed system. For example, clearly toxic constituents should be captured for off-site disposal. Wastewater discharges should be pH neutral. Grease traps and septic tanks shall have effluent filters. Advanced pretreatment shall meet the requirements of the applicable rules and State approvals.
    a. A site plan detailing the proposed system shall be submitted. The site plan for the pretreatment area must be at a scale no smaller than 1 inch = 20 feet, and include a North arrow along with all of the following information:
    b. Tanks
        i. Plan and profile drawings;
        ii. Tank dimensions, location and relevant elevations (e.g. inlet and outlet inverts, ground surface elevations and other elevations as needed to show that the system design works as proposed);
        iii. Other pertinent elevations in recirculation and pump tanks (i.e. float activation levels);
        iv. Identification number of state approved tanks;
        v. Access riser, manhole, effluent filter and discharge pipe details;
        vi. Buoyancy calculations for all tanks when empty and for conditions when the influencing water is to the top of the tank; and
        vii. Provisions for anti-flotation including calculations and drawings, if applicable.
    c. Advanced Pretreatment components
        i. Plan and profile drawings;
        ii. Drawings showing all treatment units and appurtenances, piping (size and type), disinfection unit, blowers if needed, location of control panels, height of control panels, etc.;
        iii. Details on all appurtenances supplied with the advanced pretreatment unit (pump curves, cut sheets, control panels, valves, etc.);
        iv. Written documentation from the manufacturer (on company letterhead) supporting the proposed design and use of the advanced pretreatment system, if needed; and
        v. Reference the specific accepted, innovative, controlled demonstration or experimental approval.

d. Pump Systems
    i. Calculations for system total dynamic head including friction loss, elevation head, pressure head, etc.;
    ii. Cut sheet for pump with pump curve;
    iii. Description of float sequencing, control panel function under normal and other than normal conditions, and appropriate settings;
    iv. Control panel must meet the requirements of 15A NCAC 18A .1952(c)(6) and (7) and most recent version of the I&E approval, as applicable;
    v. Emergency storage capacity calculations and provisions for auto-dialer and stand-by power, where applicable;
    vi. For pressure dispersal, dosing and flushing conditions for pumping and filter backwash requirements as applicable; and
    vii. Single or multiple control panels, who will be providing the panel(s) and what each panel will be controlling.
e. Location and identification of all gravity and pressure lines, including calculations, size and type of piping from building to tanks, among tanks and pretreatment units, and from tanks to disposal area(s).
f. Testing and start-up procedures.

16. Disposal Fields: Gravelless nitrification trench systems per 15A NCAC 18A .1956(3)(a) shall not be used. For low-pressure pipe systems 15A NCAC 18A .1957(a), the long-term acceptance rate shall not exceed the mean rate for the applicable soil group. Any other systems (15A NCAC 18A .1969) may be used if concurred with by the system manufacturer and OSWP. **No reduction in linear footage of nitrification trench shall be allowed in conjunction with the proposed use of an innovative system.**

a. A detailed site plan showing the location, layout and design of the initial system and repair areas, at a scale no smaller than 1-inch=30-feet, must be provided. Field contour lines must be shown on the plans. A minimum of two-foot intervals or spot elevations shall be provided if there is less than a two-foot elevation variation across site. Alternately, lines shall be field-located on the contour map with locations and relative elevations shown on the detailed site plan. The following information must be included in the submittal:
    i. Trench and lateral distribution system plan and cross sectional details (e.g. trench width and length, trench depth, hole spacing, pipe size and type);
    ii. Specific trench media to be used, including model number if applicable;
    iii. Manifolds, supply lines, return lines, cleanouts, interconnection details and appurtenances;
    iv. Flow distribution device design and construction details;
    v. Drainage system locations, discharge points and design details;
    vi. Fill modifications referencing both depth and location to establish horizontal and vertical benchmarks;
    vii. Documentation that the disposal field layout has been field staked and verified by the LHD; and
    viii. Reference the specific accepted, innovative, controlled demonstration or experimental approval.
b. Site Preparation, Installation and Other Items
    i. Proposed installation procedures, including site preparation, method of trench/tubing installation, provisions and procedures for blanking, where applicable;
    ii. An operation and maintenance plan for the proposed system and proposed maintenance of pretreatment and drainage if applicable;
    iii. Details of cleanouts, aerial crossings, road crossings, water line crossings, storm sewer crossings, etc. as needed;
    iv. Proof that all necessary legal documents, including easements, have been submitted;
    v. Flow reduction information as needed;
    vi. Additional information based on the soil and site evaluation;
    vii. Fill installation procedures, including selection and incorporation of fill material;
    viii. Methods for removal of vegetation, including trees;
    ix. Slope stabilization plan and maintenance provisions for slopes greater than 30 percent;
    x. Final landscaping and vegetation establishment provisions for the disposal field area, including maintenance of vegetation or landscaping over system;
    xi. Identification of any well(s) to be abandoned, including a statement that well abandonment

shall be per the Division of Water Quality in the Department of Environment and Natural Resources or LHD regulations, as applicable;

xii. Identification of old roads, buildings, etc., to be removed and removal procedures;

xiii. Locations of any debris to be buried on site shall be specified; and

xiv. Any other site-specific installation procedures recommended by the consultant.

17. **Groundwater Monitoring**: The system design shall also incorporate any requirements for groundwater monitoring as required and stipulated by OSWP. The applicant's consultant shall submit a report with proposed groundwater monitoring parameters and frequencies. OSWP will review the consultant's report and evaluate the environmental and health risks to the groundwater posed by the proposed onsite IPWW discharge. Once the evaluation has been completed, proposed groundwater monitoring parameters and frequencies will be reviewed for approval. If no groundwater monitoring parameters and frequencies are proposed, OSWP will determine the appropriate parameters and frequencies and provide the requirements to the applicant and LHD. The Operation Permit shall include any specified groundwater standards and monitoring requirements.

18. **Operation and Maintenance (O&M):** IPWW applications shall contain a wastewater system O&M plan that details the operation, inspection and maintenance frequency, requirements and procedures for all system components. In addition to the O&M procedures normally required for non-IPWW onsite disposal systems, all IPWW applications are subject to the following O&M requirements:
    a. The provisions of 15A NCAC 18A .1961 shall be met.
    b. The operation, inspection and maintenance intervals and procedures for each component of the subsurface system, as well as any pretreatment facilities must be described in the system O&M plan. Pretreatment components shall be maintained as frequently as necessary to keep the system in proper operating condition and to prevent undesired materials such as chemical constituents and solids from reaching the disposal area.
    c. O&M procedures shall be made conditions of the operation permit and stipulated to by the applicant.
    d. Any post-treatment monitoring of pretreatment components that is required to assess the pretreatment effectiveness shall be addressed in the system O&M plan. All groundwater monitoring required and stipulated by OSWP shall be conducted by appropriately trained persons.
    e. Unless otherwise specified by OSWP, IPWW systems require that a certified subsurface operator (ORC) be contracted in writing to operate and maintain the subsurface system. The operator shall inspect the system and report findings to the LHD. Inspection and reporting frequency shall be determined by system size, daily flow and wastewater characteristics. Local Health Department review of system operation and maintenance will likewise be determined by OSWP.
    f. Disposal of residuals from any system component shall be specified to be in accordance with the requirements of the NC Solid Waste Management Division. An executable contract with an authorized hazardous waste service provider (waste hauler) shall be presented to the LHD before an Operation Permit can be issued.
    g. Water consumption at IPWW facilities shall be metered, and monthly readings reported to the LHD for continual evaluation. A flow meter shall be shown to be provided for this purpose.

19. **Project Review:** Once hard copies of the project submittal package are received by the OSWP Central office in Raleigh, submittals will be stamped received and included in the engineering review queue. Engineering reviews are conducted in the order in which the submittal packages are received. Before a definitive regulatory decision may be made, additional information may be required based on site-specific conditions. Furthermore, the state may request review assistance on a case-by-case basis, which will have an impact on the final regulatory decision timeframe.

20. **Project Completion:** Following project approval, the LHD may issue an Improvement Permit (IP) and an Authorization for Wastewater System Construction (Construction Authorization or CA). The IP and CA must include the approved plans and specifications, legal documents and any other conditions deemed appropriate by the LHD.

21. **Pre-Construction Meeting:** It is critical that the LHD require a pre-construction meeting be held prior to system installation. This meeting must be attended by representatives of the LHD, owner, installer and the engineer certifying the installation. During this meeting, the sequencing of project construction,

inspection, and testing activities must be discussed and clearly understood by all parties. Holding such a pre-construction meeting must be listed as a condition in the CA, with attendance required by all key parties prior to the onset of system installation.

22. **System Installation:** A registered professional engineer must certify that the system has been installed in accordance with the approved plans and specifications. This certification is based upon periodic observations of construction and a final inspection for design compliance by the certifying engineer or his representative. The LHD must receive the engineer's certification prior to issuance of the Operation Permit (OP).

Following system installation, inspection and start-up checks, the LHD shall contact the OSWP project review engineer to schedule a final inspection. Unless specifically stated by OSWP in the project approval letter, all IPWW projects shall have a final inspection conducted by the LHD with an OSWP representative. Issuance of the OP is contingent upon OSWP approval of the final inspection and a copy of the OP shall be forwarded to OSWP within **thirty (30) days of issuance**.

As-built plans with NCPE certification shall be completed after the installation is complete and the OP has been issued. Copies of the record drawings are to be forwarded to the OSWP Central office for review and archiving no later than **ninety (90) days after the final inspection of the installation** has been conducted and approval provided by the LHD and OSWP personnel.

NCDHHS On-Site Water Protection Branch Wastewater System
IPWW Plan Review Transmittal Checklist

DONE	NA	
		Application information (1, 2, 3, 4, 5, 9, 11)**
☐	☐	Application for Improvement Permit has been submitted to LHD (four copies attached)
☐	☐	Property has been shown on plat or boundary survey, and PIN number and locator map have been provided
☐	☐	Name, address, phone, fax, e-mail for owner, agent, engineer, soils consultant are attached
☐	☐	Project proposed is described, including whether new, repair, expansion, replacement, modification of existing, or combination
☐	☐	Water supplies (existing and proposed) and surface waters have been described and locations shown
☐	☐	Facilities are described and located (existing and proposed) which are to be served by proposed system, including occupancy and projected use patterns
☐	☐	List provided of all wastewater sources and water use fixtures (points of wastewater entry into system)
☐	☐	Projected wastewater characteristics (including wastewater quality data) and flow patterns are described
☐	☐	Wastewater system components are described and located (existing and proposed)
☐	☐	Proposed phasing schedule for facilities and system components is provided.
☐	☐	Documentation provided to LHD indicating wastewater system and facility are under ownership or control of person owning the facility or that an owners association and tri-party agreement shall be provided
☐	☐	MSDS have been provided for the chemicals to be utilized
☐	☐	Ingredients have been provided for the product to be manufactured
☐	☐	The description of the production process has been submitted
		Design Flow (6)**
☐	☐	Proposed design flow attached for sizing each system component (e.g. pretreatment units, and disposal areas) and phase of development
☐	☐	Basis, including calculations, for determining design flows provided by Applicant's engineer
☐	☐	If flow reduction proposed, the conditions of 15A NCAC 18A .1949(c) have been met
☐	☐	If reduction proposed is based on flow data:
☐	☐	Comparable facility has been fully described, including comparative occupancy, hours of operation, location, size, floor plans, water use fixtures and water use practices. For food service facility, documentation on comparable dining area size and use of multi- vs. single-service utensils and plates has been provided.
☐	☐	Flow meter(s) location(s) has been specified and measurement units have been field confirmed, with documentation attached.
☐	☐	Flow data provided include at least 12 previous consecutive monthly consumption readings and 30 days of consecutive daily flow readings from an average or above average month.
☐	☐	Occupancy data has also been collected, at least during this 30-day period.
☐	☐	If wastewater includes food service or other non-domestic sources, at least two effluent samples during hours of operation have been taken from a comparable facility. For food service, samples have been analyzed for five-day Biochemical Oxygen Demand (BOD_5), total suspended solids (TSS) and fats, oils & grease (FOG).
☐	☐	Pretreatment measures have been proposed to offset any high strength characteristics of the wastewater from the proposed facility (description attached).
☐	☐	If reduction proposed is based on using water-conserving fixtures:
☐	☐	Manufacturer's cut sheets are attached for proposed plumbing fixtures, including water consumption per use.

DONE	NA	
☐	☐	Provisions are described for wastewater minimization and for diverting extraneous waters from the wastewater system (eg: cooling system condensate discharges)
☐	☐	If reduction is based on flow equalization, anticipated flow pattern, basis for sizing dosing tank and disposal areas, and method of equalizing flows are fully described.
☐	☐	Design Flow Confirmation documentation provided that:
☐	☐	Proposed design flow has been confirmed by the LHD based on 15A NCAC 18A .1949(a) or Table I of 15A NCAC 18A .1949(b)
☐	☐	OSWP has previously concurred with proposed design flow
☐	☐	OSWP confirmation of proposed design flow is being concurrently sought
		Soil/Site Evaluation (7, 8, 11)**
☐	☐	Soil/Site evaluation report by applicant's soil scientist provided (3 copies):
☐	☐	Includes soil profile descriptions for pits and borings field located by gridding and staking at 50-foot intervals, taken at pre-approved intervals
☐	☐	Delineates sites which are suitable, provisionally suitable or unsuitable for different types of wastewater systems in manner which enables their field location
☐	☐	Recommends LTAR for proposed system(s), with justification
☐	☐	Includes recommendations for disposal area design and site modifications (maximum trench depth, fill depth, drainage needs, etc.).
☐	☐	Includes soil chemical data (pH, CEC, percent base saturation, etc.) when site is to receive wastewater from non-domestic sources, and background metal and cation levels (sodium, potassium, calcium and magnesium) when the wastewater is expected to contain concentrations greater than domestic wastewater
☐	☐	Includes site-specific documentation in accordance with 15A NCAC 18A .1948(d) when site proposed to be used originally is classified unsuitable
☐	☐	Soil/Site evaluation report by LHD provided (3 copies):
☐	☐	Includes verification of consultant's evaluation and compliance with rules
☐	☐	Includes results of independent check borings/pits, including their locations
☐	☐	Topographic map provided prepared by Registered Land Surveyor (3 copies to OSWP-Central Office, 1 copies to LHD):
☐	☐	Includes site(s) for all proposed disposal areas and repair areas, with at least two-foot contour intervals or spot elevations at 50-foot grid intervals for level sites.
☐	☐	Alternately proposed lateral lines for initial and repair system have been field-located, flagged and surveyed in on site plan.
☐	☐	Includes relative elevations along property lines and as needed to evaluate hydraulic gradient between field sites and adjacent property lines
☐	☐	Alternately these relative elevations are shown on site plan
☐	☐	Site-specific Information on site loading capacity and assessment of groundwater impact provided (4 copies):
☐	☐	Includes field data sufficient to show compliance with performance requirements of 15A NCAC 18A .1946(4)
☐	☐	Substantiation for proposed LTAR provided
☐	☐	Assessment of projected compliance with groundwater standards and justification provided
☐	☐	Revised Site plan and system layout provided by Engineer and Registered Land Surveyor (3 copies to OSWP-Central Office, 1 copy to LHD):
☐	☐	Shows all corners of property and property lines potentially influencing design
☐	☐	Shows all known wells/water supply sources (existing and proposed) within property or within 500 feet of any proposed disposal area(s) and repair area(s) and within 100 feet of all other system components
☐	☐	Shows known or proposed water lines within property and within 10 feet of any projected system component
☐	☐	Shows surface waters with their water quality classifications
☐	☐	Shows locations of any existing and proposed wastewater system components, disposal areas /repair areas

DONE	NA	
☐	☐	Shows existing and proposed structures, roads, drainage features, and any known underground utilities or utility rights-of-way
☐	☐	Delineates designated wetlands and elevations of 10-year and 100-year flood zones in vicinity of any system component
☐	☐	Shows existing or proposed sediment control and storm water management system components
☐	☐	Locations of any existing or proposed groundwater monitoring wells.
☐	☐	Shows proposed location and layout field-verified by LHD of new disposal area(s) and repair field(s), and proposed alterations to field topography
☐	☐	Legal documents for systems to be under joint or multiple ownership or control are attached, including easements, association documents, draft tri-party agreements, etc. (3 copies to OSWP-Central Office, 1 copies to LHD)

Existing System Evaluation (4)**

☐	☐	Existing wastewater system components are to be utilized.
☐	☐	Existing wastewater system components (including the disposal fields) have been investigated and evaluated by the LHD and the applicant's consultants
☐	☐	A written report of the LHD evaluation has been provided to OSWP

Site Plan and Layout Approval/Improvement Permit Issuance

Documentation provided that:

☐	☐	Proposed site plan and layout have been previously approved by OSWP
☐	☐	An Improvement Permit has been issued by the LHD (3 copies attached)
☐	☐	OSWP approval of proposed site plan and layout is being concurrently sought

Engineering plans and specifications and supporting calculations are submitted herein (3 copies to OSWP-Central Office, 1 copies to LHD) (3, 12)**

☐	☐	The North Carolina Professional Engineer's seal appears on all plan sheets and the first page of specifications and calculations
☐	☐	The design is in accordance with applicable rules, guidelines and recognized principles and practices of engineering and public health
☐	☐	The design incorporates and is found by the LHD to be consistent with approved site plan and layout and the improvement permit (if issued)
☐	☐	Facility description and details (floor plans, plumbing plans, stormwater provisions, etc) are provided to confirm compatibility with previously submitted information (3 copies to OSWP-Central Office, 1 copy to LHD)

Specifications are submitted that include the following: (12, 13, 14, 15)**

☐	☐	Description of all materials and equipment to be used, including proposed treatment standards and advanced pretreatment (with attached manufacturer's cut sheets, pump curves, etc.)
☐	☐	Project-specific construction methods, installation, testing and start-up procedures
☐	☐	Means of assuring quality and integrity of finished product
		Specific operation and maintenance procedures, including:
☐	☐	Requirements for system operation
☐	☐	Inspection process and performance monitoring schedules
☐	☐	Provisions for maintaining mechanical components and disposal area vegetative cover
☐	☐	Reporting requirements
☐	☐	Provisions for residuals management
☐	☐	Abandonment procedures for existing system components no longer required.
☐	☐	Effluent monitoring plan (including, but not limited to, sampling locations, parameters and frequencies)
☐	☐	Groundwater monitoring plan (including, but not limited to, well locations, sampling parameters and frequencies)

DONE	NA	
		Plans and specifications for specific system components include: (12, 13)**
		Collection Systems and Force Mains
☐	☐	Plan drawings showing locations of manholes and cleanouts
☐	☐	Profile drawings provided when the collection system is a 6-inch or larger gravity sewer serving two or more buildings or contains two or more manholes, or when it is a pressure sewer system.
☐	☐	Pipe invert and ground surface elevations are shown on plan drawings for all cleanouts/manholes
☐	☐	Force mains are shown in profile as required when their length exceeds 500 feet, or when their grade is not continuous.
☐	☐	Force main inverts are shown at their beginning and end, and depths of cover
☐	☐	Proximity indicated to utilities, wells, water lines, storms drains, surface waters, structures, roads, and other trafficked areas
☐	☐	Detail drawings are provided, as appropriate, of service connections, manholes, cleanouts, valves, other appurtenances, aerial crossings, and crossings of roads, water lines, storm drains, streams or ditches
☐	☐	Specifications include alignment, deflection and infiltration/exfiltration testing procedures and pass/fail criteria
		Tanks
☐	☐	Tanks located accessible to pumpers and maintenance vehicles with all setbacks shown
☐	☐	Plans show tank dimensions and relevant elevations (bottom, floor, inlet and outlet inverts, top and ground)
☐	☐	Plans show other pertinent elevations in pump tanks (i.e., float activation levels) or siphon tanks (i.e., siphon-trip and alarm elevations)
☐	☐	Access riser, manhole, chamber interconnection and sanitary tee details
☐	☐	Complete construction details are provided for built-in-place tanks, including dimensions, reinforcement details and calculations, and construction methods
☐	☐	State-approved precast tanks are specified as to manufacturer, nominal capacity, whether or not the tank is rated for traffic loading and State approval number (i.e., the PT- number for pump tanks, and the STB-number for septic tanks)
☐	☐	For grease traps, design and construction specifications are provided in accordance with 15A NCAC 18A .1955(k)
☐	☐	Installation (e.g.: bedding, method of sealing tank and riser, pipe connections, surface water diversion) and water tightness testing procedures are provided with pass/fail criteria
☐	☐	Anti-floatation (buoyancy) calculations and provisions have been provided
		Pump Stations
☐	☐	Plans show pumps, discharge piping, and all related appurtenances
☐	☐	Calculations provided for system total dynamic head, pump is specified, pump curve(s) provided, and expected operating conditions specified
☐	☐	Plans show accessible pump removal system and accessible float support system, float switches and float settings
☐	☐	Plans show control panel/high water alarm location and electrical connection details
☐	☐	Control panel/high water alarm components specified
☐	☐	Description of float sequencing, control panel function under normal and abnormal conditions, and appropriate settings
☐	☐	Emergency storage capacity calculations and provisions for stand-by power have been provided when required
☐	☐	Provisions for lighting, wash-down water-supply with back siphoning protection, and protective fencing, detailed as needed

DONE	NA	
		Ground Absorption Fields
☐	☐	Final layout, existing and finished ground elevations are shown on the plans
☐	☐	All lines have been re-staked in the field as needed to verify layout, relative elevations and distribution system design
☐	☐	Trench and lateral distribution system plan and profile details and invert elevations for each lateral are shown on the plans
☐	☐	Manifold and supply line and interconnection details and invert elevations are shown on the plans
☐	☐	Flow distribution device design, construction detail, location, and invert elevations are shown on the plans
☐	☐	Drainage system locations, discharge points and design details are shown on the plans
☐	☐	Site preparation procedures have been specified
☐	☐	Construction phasing and phased system testing has been specified
☐	☐	Groundwater monitoring well locations (on the plans and in specifications) and construction specifications (on plans and/or in specifications)
☐	☐	Final landscaping provisions have been specified, including compliance with erosion control requirements.
		Other Requirements and Guidelines
☐	☐	Guidelines and transmittal checklists have been obtained from the OSWP website or OSWP Central Office, and have been followed for advanced pretreatment systems (e.g.: sand filters, tertiary wastewater treatment plants), pressure sewer systems (e.g.: STEP or Grinder Pump Systems), and industrial process wastewater systems, and applicable information is attached.
☐	☐	Other requirements or guidelines have been followed as applicable and appropriate, with references attached.
		Site Modifications
☐	☐	Site modifications have been made as needed and approved by LHD and OSWP (and Authorization to Construct has been issued).
		Installation
☐	☐	Specified site preparation steps and layout have been properly completed and layout approved by LHD and OSWP.
☐	☐	Installation has been completed in a professional manner, in accordance with approved plans and specifications (or approved modifications), Improvement Permit, Authorization to Construct, and applicable laws and rules
☐	☐	Owner has maintained contract with the project's certifying NCPE and the NCLSS during installation
☐	☐	Final landscaping, seeding and mulching are properly completed.
		Engineering Certification and Inspections (16)**
☐	☐	Certifying NCPE and LHD have inspected substantially complete installation and prepared mutually acceptable final punch-list.
☐	☐	Certifying NC PE informs LHD of punch-list completion and LHD confirms installation acceptability, with OSWP assistance provided when requested and whenever system contains complex pretreatment, distribution or control components.
☐	☐	A "start-up" inspection has been completed and the system is found to be complete and operational
☐	☐	Certifying NCPE certifies installation was in accordance with approved plans and specifications (or approved modifications)
☐	☐	Certifying NCPE has provided record (as-built) drawings within the stipulated time-frame

DONE	NA	
		Provisions for Operation and Maintenance, and Legal Documents (16)'**
☐	☐	The certifying engineer has provided complete operation and maintenance manual including Operation and Maintenance materials provided by equipment supplier to system owner and certified Operator in Responsible Charge (ORC)
☐	☐	Provisions for operation, maintenance and monitoring are in place (including any required groundwater monitoring wells).
☐	☐	All necessary legal documents, including easements, association documents, Tri-party Agreements, etc. have been properly executed and recorded
☐	☐	Owner has contracted with an ORC who is duly certified by the Water Pollution Control System Operators Certification Commission to operate and maintain this system (attach copy)

Applicant's Concurring Signature, signifying that to the best of his/her abilities and belief, complete and factual representations of the information requested above has been provided:

_____ _____

Applicant or Applicant's Agent ***Date***

Health Department's Concurrence that an application has been submitted, the requested information appears complete and proposal is being submitted for State review:

_____ _____

Local Health Department Environmental Health Specialist ***Date***

* **Note to all interested persons.** This transmittal check list and necessary accompanying information shall be submitted via the Local Health Department with a request for review of the IPWW proposed project. The LHD will forward the copies of the proposal to the On-Site Water Protection, Division Public Health, 1642 Mail Service Center, Raleigh, NC-27699-1642 (Phone: 919-707-5874).

** Numbers in parentheses ( ) refer to the corresponding items in the document entitled "Required in an IPWW Application Package", which contains complete information on the IPWW review and approval process and may be obtained from the On-Site Water Protection Branch.