

**ORANGE COUNTY DEPARTMENT OF HEALTH
SEWAGE DISPOSAL SYSTEM CHECKLIST**

I. Application – Provide each of the following:

1. A check payable to the Orange County Health Department in the amount on current fee schedule (\$400.00/\$600.00) for each proposed sewage disposal system.
2. A completed Application (Form OCHD-SDS 09/2014).
3. If the design flow exceeds 1,000 gpd, the applicant must also apply for a SPDES permit from the New York State Dept. of Environmental Conservation. Provide a copy of this application. Systems designed for flows greater than 10,000 gpd should be submitted directly to the NYSDEC for their review and approval.
4. An engineer's report (one copy).
5. Two complete copies of the plans must be provided for our use. Plans must be legible, and in final approvable form, and must be signed and sealed by a New York State Licensed Professional Engineer or other appropriate N.Y.S. licensed design professional.
6. Provide a letter from the planning board, building inspector, or other responsible municipal officer referring the project to this office unless it was previously under review by the OCHD or operation of the facility is under the Health Dept. jurisdiction (e.g. restaurant, children's camp, hotel, motel, etc), then no referral is necessary.
7. Provide verification that any construction work performed within the watershed of a Public Water Supply source will be performed in a manner considered satisfactory to the water supplier and in compliance with any existing Watershed Rules & Regulations. If the property does not fall within a public water supply watershed, or if there will be no construction on the watershed lands, a statement to that effect must be provided on the plans and in the engineer's report.
8. The Design Professional will be required to submit scanned copies of the approved documents to the OCHD within 30 days following OCHD approval. Please provide an email address (in space provided on application) that will be used to submit these documents so that it can be entered in our Sharefile system. Failure to submit these documents may delay our review and/or approval of subsequent projects.

II. Site Plan

1. Locate all wells within 300 ft. of the project and show them on the plan view or indicate that no such wells exist with an appropriate note on the plans.
2. Provide a site location map that will allow field personnel to find the site.
3. Topography including: 2' contours, proposed and existing buildings, foundations, stone walls, tree lines, fences, driveways, water courses, storm-drainage, wells and sewage disposal systems (existing and proposed). If the area of the sewage disposal system is relatively flat, 1' contours should be provided and the lowest sewerable elevation and appropriate invert elevations should be indicated for all related piping/structures.
4. Complete metes and bounds (including easements).
5. Provide a legend and clearly indicate the scale of the map.
6. Required separations should be indicated in notes, charts, or in a typical lot layout detail.

7. Confirm that any wetlands determination has been accepted as accurate by the organization having jurisdiction for all wetlands within 200' of any proposed absorption area.

III. Sewage Disposal System Design

1. General

Sewage Disposal Systems must be designed in accordance with the appropriate design standards. In general, individual residential systems must be designed in accordance with Appendix 75-A and the NYSDOH Design Handbook. The OCHD has adopted a Design Policy & Standards to Appendix 75A & the 2012 NYSDOH Design Handbook that includes some additional guidance. The Design Policy & Standards is available as an Addendum to this checklist. Commercial systems must be designed in accordance with the appropriate NYSDEC guidelines. Separation distances listed in NYSDOH Appendices 5-B and 5-D must also be adhered to, as applicable.

2. Engineer's Report – Should include the following:

- a. Description of project
- b. Description of site, including the history of former uses of the land.
- c. Description of soil conditions
 - i. Provide results, including date, for at least 2 deep tests and 2 percolation tests that support the design of each proposed system.
 - ii. Note any bedrock, groundwater, mottling or impervious layers.
 - iii. Provide field notes (i.e. depth, start/stop times) for all percolation tests. Tests must be stabilized. Subsequent runs that are faster than previous runs should be disregarded. Tests will be considered stabilized when the last 2 runs are within:
 - a. 10% of each other for 0-10 minute tests.
 - b. One minute for 11-30 minute tests.
 - c. Two minutes for 31-60 minute tests.
 - iv. Discuss any percolation results less than 1 minute or greater than 60 minutes.
 - v. Discuss any areas in proposed fields which may be compacted (e.g. existing roadways, rock walls, buildings). Provide percolation tests in these areas.
 - vi. Describe any surface water or storm drainage that may impact siting of absorption fields.
 - vii. Describe any site work required (e.g. fill, curtain drains, etc.) to provide 4' min. of usable soil. Generally, this work must be completed prior to approval. When curtain drains are proposed, the potential for short-circuiting must be addressed.
- d. Describe design flow rates.
- e. For gravity dosed systems provide calculations showing 75-85% of distribution network volume discharged per dose.

- f. For pumped systems:
 - i. Provide performance curves for specified pump(s).
 - ii. Calculate TDH.
 - iii. Provide calculations for pump settings to dose 75-85% of distribution network volume. (5-10 times network volume for pressure distribution)
 - iv. Address potential force main freezing or flotation of the structure.
- g. Include current manufacturer's catalog "cut sheets" from a locally available supplier for all septic tanks, distribution boxes, drop boxes, dosing chambers/devices, pump chambers, pumps, etc.
- h. Subsurface absorption systems described in Sections 8b-8h of Appendix 75-A must meet the requirements found in that publication and this Department's Addendum thereof. Use of absorption trenches is required where practical.
- i. Indicate the Section of Appendix 75-A that the proposed system is designed in accordance with. Note that Alternative systems (i.e. any system described in Section 9 or 10 of Appendix 75-A) are generally not acceptable for new construction, and are permitted only in an individual situation because of hardship or other similar circumstances. Use of Alternative systems must be justified in the engineering report, and must receive conceptual approval from the OCHD prior to the submission of final design plans.
- j. Secondary Treatment:
 - i. If required soil conditions or separation distances cannot be provided, it may still be possible to design a system that otherwise addresses health and environmental concerns. Secondary treatment will be required as part of any such proposal.
 - ii. Any manufactured units must be certified as meeting NSF Standard 40, Class 1.
 - iii. No increase in the application rate will be granted for the absorption field design solely due to the provision of secondary treatment.
 - iv. A service contract must be in place for the life of the unit. A copy of the initial contract signed by the service provider and the applicant, for a minimum term of 3 years should be provided prior to approval of the plans by the OCHD.

3. Plan

- a. Indicate the design basis for the expected flows, number and length of laterals, and location of soil tests (a minimum of 2 percolation tests and 2 deep tests). Indicate the date soil tests were performed.
- b. Also address the following, if applicable:
 - i. If water treatment backwash/regeneration waste is added to the system the entire volume must be added to the daily design flow and an air gap detail must be shown.
 - ii. Describe any other unusual loads (e.g. spa tubs, garbage grinders, etc.)
- c. Provide a minimum of 50% expansion area. (100% required for all commercial facilities).

- d. The reviewing engineer may require inverts be provided for the septic tank, dosing or pump chamber, distribution or drop box, first and last lateral, and lowest sewerable elevation (LSE) of the building.
- e. Provide surface water diversion swales.
- f. Satisfy all separation requirements.
- g. Show roof/footing drain discharge locations.
- h. If curtain drains are proposed, show them discharging to grade, provide invert elevations at highpoints, transitions from perforated to solid pipe and outlets. Show proper separations to absorption areas and screened outlets.
- i.
 - i. Building sewers shall be constructed of cast/ductile iron or Schedule 80 PVC, and shall not have fittings (bends) exceeding 45°. Cleanouts shall be provided every 75' (min.) and at every 45° bend.
 - ii. The effluent line shall have cleanouts every 75' (min.) and at all bends of 45° or greater.
- j. If grading (e.g. for road) will impact absorption areas, provide proposed contours.
- k. The orientation of pipe inlets and outlets shown on the plans must be consistent with the details.
- l. If the area of a proposed field has a slope between 15% and 20%, the laterals must be spaced further apart as described in the Residential Onsite Wastewater Treatment Systems Design Handbook. No portion of the absorption field shall have a slope of greater than 20%.

4. **When applicable, each of the following should be added to the plans as appropriately worded notes:**

- a. The design and location of sanitary facilities (water and sewer systems) shall not be changed.
- b. All wells within 300 ft. of this project have been located and are shown on the plans.
- c. Trenches shall not be installed in wet soil. The sides and bottom of trenches must be raked. The ends of the laterals must be capped.
- d. There shall be no regrading, except as shown on the approved plans, in the area of the absorption fields.
- e. Heavy equipment shall be kept off the area of the absorption fields except during the actual construction. There shall be no unnecessary movement of construction equipment in the absorption field area before, during, or after construction. Extreme care must be taken during the actual construction so as to avoid any undue compaction that could result in a change of the absorption capacity of the soil on which the design was based.
- f. No swimming pools, driveways, or structures that may compact the soil shall be located over any portion of the absorption field.
- g. This system was not designed to accommodate garbage grinders, jacuzzi type spa tubs over 100 gallons, or water conditioners. As such, these items shall not be installed unless the system is redesigned to account for them and reapproved by the Orange County Health Department.
- h. There must be an uninterrupted positive slope from the septic tank (or any pumping or dosing chamber) to the building, allowing septic gases to discharge through the stack vent.

- i. The owner/applicant shall be provided with a copy of the approved plans and an accurate as-built drawing of any existing sanitary facilities.
- j. Provide notes for any of the following that may apply:
 - Septic tanks should be inspected periodically and pumped every 2-3 years.
 - Pump stations/dosing chambers should be inspected periodically by a properly trained person for proper operation, including high water alarms, venting and any physical damage.
 - Distribution Boxes/Drop Boxes should be inspected periodically to assure that they are level and operating properly.
- k. *Individual wells and sewage disposal systems shall no longer be constructed or used when public facilities become available. Connection to the public sewer system is required within 1 year of availability.
- l. *Orange County Department of Health plan approval is limited to 5 years. Time extensions for plan approval may be granted by the Orange County Department of Health based upon regulations in effect at that time. A new plan submission may be required to obtain a time extension.
- m. A New York State licensed professional engineer (or other Design Professional as allowed by the NYS Education Department) shall inspect the sanitary facilities at the time of construction. The engineer shall certify to the Orange County Department of Health and the local code enforcement officer that the facilities have been installed in accordance with the approved plans and that any septic tank joints have been sealed and tested for water tightness.

*** These notes must appear on sheet 1 of the plans.**

5. Construction

- a. Septic tanks
 - i. Make and model
 - ii. Dimensions (length, liquid depth, baffles, tees, inverts, etc.)
 - iii. Access manhole openings (20" min. in smallest dimension)
 - iv. 12" max. earth cover
 - v. 3" min. sand, pea gravel, or trench aggregate as bedding.
 - vi. Sanitary tees with gas deflection baffles are recommended for all installations.
 - vii. Analyze for flotation where appropriate.
- b. Central Distribution Boxes
 - i. Sufficient number of openings for system plus expansion area.
 - ii. 12" maximum earth cover
 - iii. 12" min. bedding of sand, pea gravel or trench aggregate.
 - iv. Outlet inverts identical
 - v. Baffle, extending vertically to inlet centerline, and laterally ~4" from inlet. May instead use sanitary tee, with adequate clearance from top and bottom of box.
 - vi. 2" minimum sump.
 - vii. 2" minimum drop between inlet and outlet inverts.
 - viii. Flow equalizers are required on all outlets.

- ix. Note that outlets must be used in a manner that will allow access to the expansion area without disturbing existing piping. A piping detail may be necessary if this cannot be clearly shown on the plan view.
- c. Drop Manholes (not for use with dosing by gravity or pumping):
 - i. Baffle or sanitary tee as per distribution box.
 - ii. Cover and bedding as per distribution box.
 - iii. Outlets to laterals 1" to 1 1/2" below outlet to next box.
 - iv. 2" minimum sump.
 - v. 1" min. between the invert of the inlet and outlet to the next.
- d. Absorption Fields:
 - i. Sized as per Table 4A of Appendix 75-A, or manufacturer's installation manual, as appropriate.
 - ii. All laterals the same length.
 - iii. Maximum lateral length 60', 100' if dosed (by gravity or pumping).
 - iv. Trenches to be 6' on center (minimum).
 - v. 4' min. undisturbed soil between trenches.
 - vi. If drop manholes are used, provide 2' min. of solid pipe between the box and trench. This section of trench should be backfilled with native material, not aggregate.
- e. Absorption Trenches (pipe and aggregate):
 - i. 2' min. width.
 - ii. Bottom of trench to be set level.
 - iii. 12" min. 3/4"-1 1/2" aggregate (washed gravel, crushed stone or manufactured tire derived aggregate), 6" min. under lateral, 2", min. over lateral.
 - iv. Aggregate must be covered with (in order of preference) a permeable geotextile fabric, or 4" of hay or straw.
 - v. 12" max., 6" min. earth back fill over appropriately covered aggregate, mounded for settling.
 - vi. Gravity fed systems – slope laterals 1/32 to 1/16 inch per foot. If dosed, laterals should be set nearly level.
 - vii. Perforations in pipe must face down.
 - viii. Indicate size and material of pipes.
 - ix. Do not install in wet soil. Rake sides and bottom of trench prior to placing aggregate. Ends of all laterals must be capped.
- f. Gravity Dosing (dosing required with over 500' of laterals)
 - i. Make and model and dimensions of equipment, including chamber and siphon.
 - ii. 3" min. bedding of sand, pea gravel, or trench aggregate.
 - iii. 12" max. earth cover.
 - iv. Dimensions including high water level, draw down, pipe diameter, height of overflow, trap depth.
 - v. Recommend high water alarms.
- g. Pump Chambers
 - i. Make and model and dimensions of pump chamber.
 - ii. 3" min. bedding under structure.
 - iii. Openings at grade must be lockable and watertight.

- iv. Indicate settings of controls.
- v. Indicate the size and material of discharge piping.
- vi. Address venting of the chamber.
- vii. Provide duplex pumps or 24 hour storage between the high water alarm and the inlet invert elevations.
- viii. Describe the alarm to be provided (audible/visual), including its location.
- ix. Provide a note indicating that applicable NEC requirements are met.
- x. Analyze for flotation where appropriate.
- xi. Address protecting the force main from freezing.
- xii. Cleanouts in force mains are not required, however provisions for periodic flushing of pressure distribution laterals are recommended.
- xiii. Orifice shields are recommended for pressure distribution laterals.
- h. Other Absorption Area Designs
 - i. Installation must be detailed in accordance with manufacturer's instructions and any Health Department addenda.
 - ii. Manufacturer's installation instructions must be included on the plans.
- i. Miscellaneous Construction Items
 - i. Indicate minimum slopes of all pipes in the sewage disposal system.
 - ii. Polylock Seals, used in many precast products allow a maximum deflection of $15^{\circ} \pm$ from perpendicular which must be reflected throughout proposed designs.

6. Joint Site Inspection

- a. Onsite personnel must be knowledgeable and familiar with the project.
- b. Design soil test locations and absorption area corners must be accurately marked and in agreement with the plan view.

7. Miscellaneous

- a. Identify plan sheets and details not for review or approval by Orange County Health Department (e.g. erosion control, road profiles, etc.).
- b. All information submitted must be legible.