

Summary of Proposed January 1, 2022 Revisions to the Technical Standards for Subsurface Sewage Disposal Systems

- **Cover Page, Table of Contents, and Public Health Code (PHC) Regulation Sections**
 - Cite January 1, 2022 date for the revised standards and add January 1, 2018 revision date to the list of former standards.
 - Include a reference to CT General Statute Section 22a-430 (g) in the note about the 7,500 GPD jurisdiction change per Public Act No. 17-146, Section 30. Make similar reference in the PHC B103 and B104 regulation section headings.
 - Add the Environmental Engineering Program's abbreviated email address to the cover page: DPH.EnviroEng@ct.gov
 - Add a note to the PHC B100a regulation section that the reference to PHC Section 19-13-B103d (d) in the Technical Standards definition is a clerical/Scrivener's error as it should have been PHC Section 19-13-B103d (b).
 - Revise Appendix E title to Water Treatment Wastewater Discharges to Subsurface Sewage Disposal Systems to be consistent with actual appendix title.

- **Section I Definitions:**
 - Add the word "gravity" before pipe in the building sewer definition.
 - Replace Commissioner of Public Health with Department in the following definitions: Approved aggregate, Proprietary leaching system, Proprietary pressure-dosed dispersal system, Watertight tank seal, and Water treatment wastewater dispersal system. Note #1: Department is defined in PHC Section 19-13-B103b (a). Note #2: The reference to Commissioner shall be changed to Department throughout the standards except in cases where a regulation citation specifically cites the Commissioner.
 - Replace "guest houses, and in-law apartments" with "accessory apartment" in the outbuilding definition.
 - Minor grammar revisions made to definitions.

- **Section II Location of Sewage Systems:**
 - Subsection A. Separating Distances: Change subsection title to **Separating Distance to a Water Supply Well**. Reference Item A in Table 1 for the minimum separating distance to a water supply well for a SSDS installation **or repair** and note an exception is required from the Commissioner pursuant to PHC Section 19-13-B103d (a) (3) if the distance cannot be achieved. Move all other current language in Subsection A into Subsection B **retitled Separating Distances to Approved SSDS Piping & Table 1 Items Except Item A (Water Supply Well)**. Note that the application for an exception to minimum separating distance for Item A in Table 1 is the Department's website with guidance that references CT General Statute Section 19a-209c that requires certified notice to all affected well owners and mention the notice must include a copy of the exception application per the statute.
 - Change current Subsections B, C, and D to Subsections **D, E, and F**, respectively.
 - Subsection B (retitled per above): Stipulate SSDS piping may also be approved by the Department in an approval letter issued after the current revision of the standards.
 - Create new Subsection C titled **Off-Site & Central Subsurface Sewage Disposal Systems**. Cite PHC Section 19-13-B103d (d) that requires each building be served by a separate SSDS located on same lot as building served, cite PHC Section 19-13-B103d (a) (2) that provides for

Commissioner exceptions for off-site SSDSs and central SSDSs serving more than 1 building. Note that the applications and guidance for exceptions for off-site and central SSDSs are available on the Department's website. Mention the guidance includes information about SSDS assessments for proposed new building connections to existing SSDSs.

- Subsection D. System Abandonment: Stipulate the DOH may authorize a former sewage system component to be utilized for another purpose (e.g., WTW dispersal system) rather than be formally abandoned if property owner/applicant demonstrates the component is in acceptable condition and such use will **unlikely** cause a health hazard or nuisance condition. Stipulate the DOH may authorize hollow sewage system structures to be filled with material (e.g., concrete) other than sand or gravel when abandoning such structures.

Table 1 Revisions:

- Add statements above the table: #1: Separating distances are based on horizontal measurements except for non-vertical closed-loop geothermal system bore holes that are measured from the closest portion of the bore hole. #2: Reference to sewage tanks in Table 1 include septic tanks, grease interceptor tanks, pump chambers, and holding tanks.
- Item H. Storm water infiltration system (SWIS): Remove sewage tank from special provision #2 that applies to non-single-family residential buildings lots, as a reduction to 25 feet is already provided for all sewage tanks. Add statement to special provision #2 that distance can be further reduced to 25 feet for a minor SWIS (e.g., rain garden) with the approval of the DOH if demonstrated that the leaching system will not be adversely impacted. Add a statement that a minor SWIS discharges storm water collected from a localized area on a property and does not include a SWIS that discharges storm water collected from large areas on a property.
- Item J. Property line: Stipulate large (>2,000 GPD) leaching systems **for new buildings** shall provide a 50 feet minimum separating distance to the down-gradient property line on MLSS applicable lots unless there are restrictions that ensure the receiving soil surrounding the leaching system (See Appendix A: MLSS) will be preserved. Revise special provision #2 to indicate the reduced distance provision down to 15 feet on flat groundwater table lots applies only to small (<2,000 GPD) leaching systems. Potentially remove reserve leaching area special provision reference depending if revisions are made to Section VIII A reserve area requirements.
- Item K. Water piping: Include provision to reduce distance to 25 feet when the water supply suction piping is sleeved in an approved solid carrier pipe and casing end seals are provided to seal the annular space around the inner pipe at the ends of buried carrier pipe. See Section III D for information on approved carrier pipes, and casing end seals.
- Item O. Utility service trench: State in the special provision that the distance does not apply to electrical and alarm connections to sewage tanks. Add recommendation that detectable underground magnetic tracer/warning tape be provided at least one foot above buried utility lines within 25 feet of a SSDS. Required by other codes?
- Item R. Closed Loop Geothermal System: Cite a 25 feet minimum separating distance to trench or bore hole. Provide special provision to allow reduction to 15 feet to sewage tank if tank is evaluated and confirmed to be in satisfactory condition. Reduce minimum separating distance from geothermal piping to trench or bore hole from 10 feet to 5 feet.

○ **Section III Piping:**

- Subsection A. Building Sewers: Require a cleanout to grade on a building sewer connection to a slab on grade building for a SSDS repair **that includes a new building sewer** if a cleanout is not provided within the building per building code requirements.
- Subsection A. Building Sewers: Stipulate that when a cleanout is provided for a multi-bend change in direction on a building sewer, it shall be provided prior to the first change in direction.
- Subsection D. Drainage & Water Supply Piping: Include provision that the minimum distance between approved solid SSDS piping and water supply suction pipes is reduced from 25 feet to 10 feet if a satisfactory low-pressure air test is conducted on the SSDS piping, or when the water or SSDS piping is sleeved in an approved solid carrier pipe and casing end seals are provided to seal the annular space around the inner pipe at the ends of buried carrier pipe. Stipulate approved carrier pipes are listed in Tables 2 & 2-B, and casing end seals shall be rubber boot or wrap-around seals with stainless steel clamps.
- Table 2: Change the pressure minimum pressure class of PVC AWWA C 900 pipe from 100 to 150 psi. Note that the 3" wide stainless-steel joint couplings are for 4" diameter building sewers. 4" wide couplings are required for 6" and 8" diameter building sewers. Stipulate Fernco couplings without shear bands can be used for joint connections between cast iron pipe and the bell end of an **approved** PVC Schedule 40 or 80 pipe. Stipulate in the Use column that building sewers and water piping shall be installed in accordance with Section III D. **Add Gripper Gasket LLC Maxadaptor Sewer Repair Coupling (under review) to the acceptable joint column. Consider allowing use of PVC ASTM D 3034, SDR 35 piping for non-lateral building sewer mains utilized in central SSDSs.**
- Table 2-A: Stipulate in the Use column that solid effluent distribution piping and water piping shall be installed in accordance with Section III D.
- Table 2-B: Change the pressure minimum pressure class of PVC AWWA C 900 pipe from 200 to 150 psi. Stipulate in the Use column that force main piping and water piping shall be installed in accordance with Section III D.
- Table 3: Add PE ASTM D 2239 & D 2737 pressure pipes. Add ADS N-12 Mega Green WT IB pipe (ASTM F 2648) pipe 4" to 24" diameters with gasketed bell/spigot (ASTM D 3212) pipe. Delete the ASTM F 667 reference from the currently approved ADS N-12 pipe listing and update the ASTM references for other ADS pipe. Delete the Hancor Blue Seal pipe.

○ **Section IV Design Flows:**

- Subsection A. Residential Buildings: Make note that the reduced design flow (75 GPD) for each bedroom beyond three in a single-family residential building does not apply to the bedroom(s) in a residential outbuilding for central SSDS sizing purposes.
- Subsection C. Water Usage Monitoring and Permits to Discharge: Add language to reference non-compliant ELA or MLSS leaching system repairs to be consistent with reference in Permit to Discharge Form #4.

○ **Section V Septic Tanks & Grease Interceptor Tanks:**

- Subsection A. General: Add statement in Subsection 3 (Septic Tank Access) to acknowledge that ASTM C 1227 allows oversized non-stepped covers that sit on top of tanks if the covers are prevented from lateral movement. Stipulate approved CT concrete septic tank manufacturers

making such tank covers shall provide documentation to the Department on lateral movement control provisions.

- Subsection A. General: Make note in Subsection 6 (Performance Testing) that installed tanks can be vacuumed tested prior to backfill in accordance with ASTM C 1719 to ensure water tightness.
- Subsection A. General: Consider requiring a secondary safety lid or device for a riser assembly when the tank cover is not left in place, regardless of weight of riser cover. Currently it's only required when riser cover weighs less than 59 pounds. If this revision is made, make similar revisions for grease interceptor tanks, pump chambers, and holding tanks.
- Subsection B. Septic Tank Capacities: Stipulate that for tank sizing for a central SSDS serving a single-family residential building and a residential outbuilding shall calculate the minimum required capacity based on the single-family criteria for the main house and an additional 250 gallons for each bedroom in the outbuilding. Stipulate that for a single-family home with an attached or internal accessory apartment the minimum required tank capacity shall be calculated based on the single-family criteria for the main house and an additional 250 gallons for each bedroom in the accessory apartment.
- **Section VI Effluent Distribution, Pump Systems & Air Injection Processes**
 - Subsection A. General: Discuss current requirement that the top of level leaching systems be below the septic tank outlet invert.
 - Subsection C. Pump Systems: Recommend detectable underground magnetic tracer/warning tape be provided at least one foot above buried electric lines within 25 feet of the SSDS.
 - Subsection C. Pump Systems: Stipulate concrete pump chambers 1,000 gallons or larger shall provide manhole openings of at least 24 inches in diameter.
 - Subsection C. Pump Systems: Discuss need to specify minimum size (e.g., ¼-inch) for a weep hole for back drainage into a pump chamber.
 - Subsection C. Pump Systems: In the raw sewage pump paragraph recommend (require?) that to reduce velocity the force main should discharge to a distribution box that in turn directs the sewage to the septic tank via a 4" pipe connection, or the force main should transition to a 4" pipe with dissimilar pipe size coupling. An inlet baffle is required for the tank pipe connection.
- **Section VII Percolation Tests:**
 - Discuss leaching system sizing (design percolation rate) for systems constructed entirely in select fill where the bottom of the system is not above existing grade.
 - Stipulate water level readings shall be taken until there is no more than 2 inches of water remaining in the hole unless the water level has stabilized for at least three consecutive readings and there is no more than 4 inches of water remaining in the hole.
- **Section VIII Leaching Systems:**
 - Subsection A. General: Recommend conceptual SSDSs for proposed subdivision lots be laid out with leaching systems that have an ELA credit of 10 SF/LF or less.
 - Subsection A. General: Revise the current 4th bulleted minimum separation distance provision that applies to tidally impacted groundwater tables. Delete statement about SSDSs in coastal areas with tidally impacted groundwater tables. Stipulate that on a property in a coastal municipality bordering Long Island Sound that has a leaching system located in a 100-year or

500-year FEMA flood zone, the system shall be at least 30 inches and 24 inches above maximum groundwater, respectively.

- Subsection A. General: Stipulate that lots that are to be filled to address unsuitable soil conditions shall be prepared with necessary select fill needed for the leaching system installation and shall be done in a manner to protect the naturally occurring soil, and the prepared area be stabilized to protect against erosion.
- Subsection A. General: Further discuss reserve leaching system area requirements for new SSDSs. Cite language (“...one hundred percent reserve leaching area...”) included in the “Code-complying area” definition in PHC Section 19-13-B100a (a). Consider stipulating a one hundred percent reserve leaching area (100% RLA) shall be identified on the lot in an area complying with Table 1 minimum separating distance and without unsuitable soil per PHC Section 19-13-B103e (a) (3). Consider stipulating the 100% RLA shall provide for additional leaching system area to accommodate an increase in the building’s design flow as follows:
 - 2-bedroom single-family residential buildings: 1 additional bedroom
 - 3 or more bedrooms single-family residential buildings: 2 additional bedrooms
 - Non-single-family residential buildings: A 25% increase in design flow.Add language recommending preservation of the 100% RLA and make note the area can be included in code-complying area designations for activities (e.g., increase in design flow) regulated by PHC Section 19-13-B100a. These revisions would require additional language changes to the 2nd to the last paragraph on page 34, 3rd paragraph on page 35, and 2nd to last paragraph on page 35.
- Subsection A. General: Clarify that MLSS is not applicable when the receiving soil depth (RS Depth) is greater than 60 inches rather than more than 60 inches of receiving soil. Delete the word “essentially” that is in parenthesis along with “0 percent slope”.
- Subsection A. General: Revise the language about select fill lateral extensions around the outer perimeter of leaching systems: 5 feet extension down-gradient of systems on sloped restrictive layer lots, and 2 feet for all other extensions (up-gradient and sides on sloped restrictive layer lots, and on flat groundwater table lots). Discuss if this warrants reduction of 10 feet top of embankment (Table 1, Item I & Figure 13) for the sides of fill packages.
- Subsection E. Proprietary Leaching Systems & Proprietary Pressure-Dosed Dispersal Systems: Add the nine GLF 72 Series GreenLeach Filter proprietary leaching systems approved by DPH in an October 25, 2018 approval letter to the list of approved GreenLeach products.
- Subsection F. Leaching System Sizing: In the 1st bullet in category 1 (Residential Buildings) delete the phrase “on single-family residential building lots” from the current language concerning SSDSs for 1-bedroom residential outbuildings and revise the language to allow these systems to also serve one-bedroom tiny houses once criterion for such houses is incorporated into the State Building Code. Note: Appendix AQ of the 2021 International Residential Code governs tiny houses and adoption of the 2021 family of codes is expected in the final quarter of 2021.
- Subsection F. Leaching system Sizing: Revise the language in the 3rd bullet (central SSDSs) in category 1 (Residential Buildings) to stipulate that the required ELA for each bedroom in a residential outbuilding shall be based on the multi-family classification. Add a 4th bullet concerning a single-family home with an attached or internal accessory apartment and note the required ELA for main house shall be based on the single-family home criterion and the required ELA for the accessory apartment shall be based on the multi-family criterion.

- Subsection G. Leaching System Product Approvals, ELA, Center to Center (C to C) Spacing: Stipulate the Department, **within available appropriations**, may approve multi-product single trench leaching systems that are exempt from the C to C spacing requirements and note internal interfaces shall not be credited unless they are a minimum of 4 inches apart and there is at least 4 inches of sand between the product bottoms for partly treated septic tank effluent movement.
- **Section IX Groundwater and Surface Water Drainage:**
 - No changes
- **Section X Water Treatment Wastewater:**
 - Revise requirement #2 to indicate the DOH should consider requiring a PHC Section 19-13-B100a (e) review for WTW daily discharges that exceed the building's design flow (sewage). Note: Certain water treatment systems (e.g., whole house/building reverse osmosis systems) can produce very large quantities of WTW that may require significant area for a WTW dispersal system, and such a review would ensure preservation of SSDS areas.
 - Discuss whether Table 9 warrants additional items (e.g., building with and without drains).
- **Section XI Non-Discharging Toilet & Sewage Disposal Systems:**
 - Subsection C. Incineration Toilets: Lower the minimum combustion temperature from 1,400 to 1,000 degrees Fahrenheit and stipulate that incineration can occur when the toilet lid is open if the toilet has a combustion chamber that is separate from the collection bowl.
- **Forms #1, 2, 2A, 3, & 4:**
 - Form #3 (SSDS Final Inspection Report): Delete one of the two "Sieve Required (Y/N):" citations and add space to note type of effluent distribution pipe. The CEHA Subsurface Workgroup also recommends a space be provided to note exceptions (e.g., minimum separating distances, MLSS, ELA).
 - Form #4 (Permit to Discharge): Revise the standard reference for non-compliant repairs from Section IV D to Section IV C and add "ELA or MLSS" between "non-compliant" and "repairs".
- **Appendix A, MLSS Revisions:**
 - Stipulate multiple SSDSs on a lot that rely on the same receiving soil (e.g., <50' apart on sloped lots) shall be evaluated collectively. Note: This is currently in the code however it doesn't indicate it's only for SSDSs on the same lot.
 - Delete the word "essentially" that is in parenthesis along with "0 percent".
 - Establish minimum depths (**e.g., 18 inches**) of receiving soil surrounding the leaching system for Categories 1 and 2. Currently not addressed and Category 2 cites minimum depth for including select fill in the receiving soil in the leaching system area measurement. Further discuss with CAC.
 - Clarify language in the heading for Category 2 (New SSDSs and MLSS Compliant Repairs) that the latter includes B100a Code-Complying Area and MLSS Compliant Potential Repair Area SSDS installations.
 - Add a statement to Category 3 (Non-compliant repairs) stipulating leaching systems that solely utilize select fill as receiving soil (Diagram 6) shall be designed a minimum of 24" above maximum groundwater.

- Add statement in Flow Factor (FF) chart that for a central SSDS serving a single-family home and a residential outbuilding the main house shall utilize the FF based on the single-family criteria and the FF shall be increased by 0.5 for each bedroom in the outbuilding. Add statement in Flow Factor (FF) chart that for a single-family home with an attached or internal accessory apartment the main house shall utilize the FF based on the single-family criteria and the FF shall be increased by 0.5 for each bedroom in the accessory apartment.
- **Appendix B, Approved Septic Tank Effluent Filters**
 - No changes.
- **Appendix C, Approved Filter Fabric for Covering Stone Aggregate**
 - Replace list with the list of approved filter fabrics dated August 14, 2019 and remove Carthage Mills M35 filter fabric from the list.
- **Appendix D, Approved Non-Concrete Septic Tanks:**
 - No changes.
- **Appendix E, Authorized Water Treatment Wastewater Discharges to SSDS's**
 - Add arsenic, lead, and heavy metal adsorption medias (e.g., titanium oxide, iron oxide, activated alumina) to the list of water treatment wastewater that are authorized to discharge a SSDS.